



SUPER CHIPMUNK

Fred Reese's scale model of Art Scholl's Super Chipmunk is fully aerobatic with a 4-stroke .90 engine.



Art Scholl and his Super Chipmunk were stand out attractions at air shows all over the United States. His skill and showmanship kept him in high demand for movie and television work. The DeHavilland Chipmunk, used as a trainer for England and Canada during WW II, has been highly modified to handle the bigger engine and greater flight loads imposed by air show work. The rudder and fin have been enlarged and the wing tips have been clipped. The spin strakes ahead of the stabilizer have been removed and an entire new cowl has been made to cover the opposed, flat six cylinder engine with more than twice the original horsepower. Art continued to modify and improve the Super Chipmunk over the years

By Fred Reese

The model spans 66" and has 720 square inches of wing area. Power in the prototype is an Enya .90 4-stroke swinging a Master Aircrow 14 x 6 propeller. As originally flown, the model weighed 8¾ pounds. Since then I have added an onboard ignition system and a smoke system which raised the weight to 9½ pounds. Even at this weight the take-off roll is less than 25 feet. The model does not know it is overweight. The big wing and powerful engine fly the model like a pattern ship. The Super Chipmunk will easily do the IMAC patterns, that is if you can do them. The wing is extremely forgiving and has no tendency to tip stall on landings or

model handles the weight very well but it would be nice to be able to do one more roll going uphill and some of my landings might be softer.

My Super Chipmunk was designed to be a sport scale and pattern ship. The outlines are correct and only the airfoil has been changed. If you plan to build the Super Chipmunk for pattern or sport use, I would suggest that you use the dihedral as called out on the plan for pattern use. The scale dihedral produces some roll in knife edge flight that must be corrected with opposite aileron.

CONSTRUCTION

Many years ago I built a Jack Stafford Chipmunk and I think his construction method for this type of oval fuselage is the easiest to build. However, you must be very selective

ABOUT THE AUTHOR

Fred Reese, right, and Don Harris, left, in 1953, with a Fred Reese original 1/2A U-Control stunter. Do you remember the McCoy .049 diesel? Neither of them had an unbleeding finger left at the end of the day. They would take turns flipping while the other set the compression lever.

Don and Fred met in the seventh grade in 1951 in Manhattan Beach, California. They built boats, U-Control, free flight and R/C airplanes until Don and his family moved away in 1956. They have kept in touch over the years, and it was Don who brought Fred back into R/C in 1968.

Don went into the sandblasting business while Fred was in Pharmacy school. Don has since retired to Lake of the Pines, near Auburn, California, where he makes his famous smoke mufflers for the 1/4 scale fliers. Fred sold his drug store in 1972 and worked as a designer for House of Balsa for two years, developing their popular series of 1/2A schoolyard scale designs. Currently Fred and his wife Gwen, her twin sister Judy, and her husband Ken, own a campground in Jackson Hole, Wyoming. Fred and Gwen spend the winters in Penn Valley, California, which is quite close to Lake of the Pines. The result is like turning the clock back to 1953.



and each new set of pictures of the aircraft showed some new changes or additions. The plans reflect the changes observed in the color photograph set of the Super Chipmunk available from Repla-Tech International (48500 McKenzie Hwy., Vida, Oregon 97488). These photographs show the aircraft from many angles and include close-up shots of the cockpit interior and many other details.

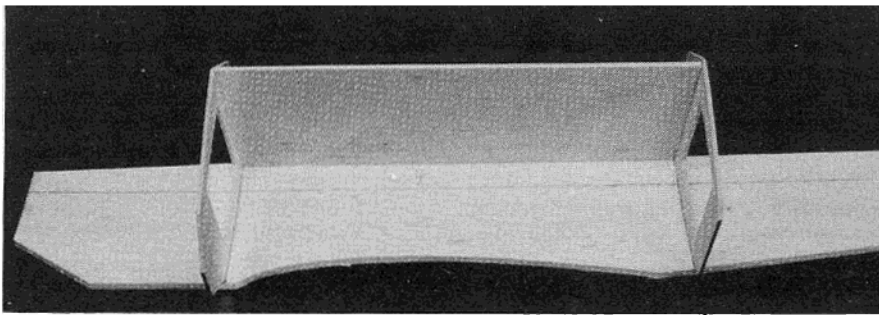
Don Harris, a modeling buddy since childhood, has made molds for the cowl, wheel pants and canopy and will also have a complete fiberglass fuselage available for scratch builders. He has also had a decal set made for this model. His decals and other fiberglass parts were used on the prototype.

take-off. Even though the airfoil is semi-symmetrical, the model will fly inverted with only a touch of down elevator and will do both inside and outside maneuvers with ease. Just like its namesake, the Super Chipmunk will do a true Lomcevak. Start with an inside snap at full power in a gentle climb and hold full aileron, rudder and elevator through 1½ snaps and then feed in full down elevator while maintaining full aileron and rudder deflection. If your timing is right, the model will gyrate and then the tail will tumble forward and around, end for end. It's spectacular, especially with smoke.

If I had the model to build over again, I would try to lighten it some. I would try for a dry weight of 7½ to 8 pounds for best performance. The

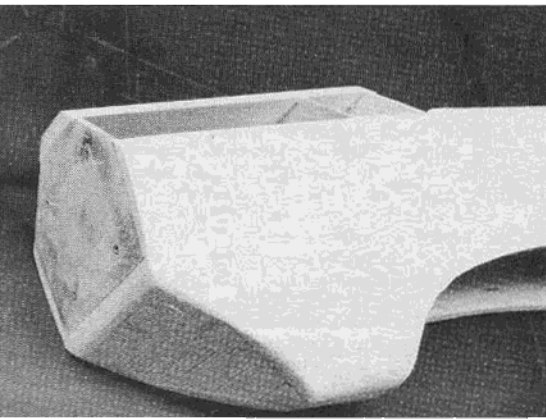
when picking wood or the model could be heavy. Sig contest weight balsa is ideal for the 1/4" and 3/8" fuselage sides and corners. The fuselage is built as a typical slab sided box with narrow top and bottom sheeting. The corners are planed off at a 45° angle and 3/8" sheets are glued on. The fuselage is then planed and sanded to the final oval cross section.

Begin construction by cutting out the two fuselage sides from light 1/4" balsa. Cut out the two major bulkheads and the firewall. Bolt the engine mount to the firewall and set the blind nuts. The fuselage sides are slightly curved around the bulkheads and should be dampened on the outside before gluing on the bulkheads. I used Zap CA Plus for all construction. Glue the two bulkheads

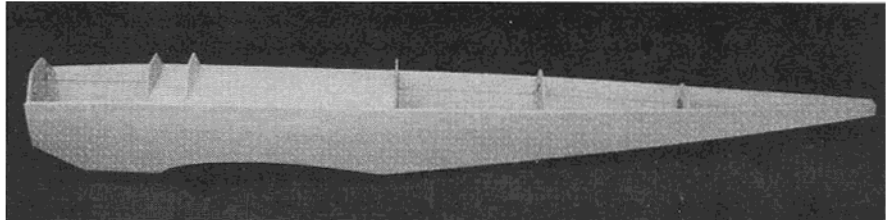


Glue bulkheads B and D to one of the fuselage sides and add the 1/8" cockpit floor between the bulkheads. Dampen the outside of the fuselage side to bend easily to the bulkheads.

B and D to one of the fuselage sides and add the 1/8" balsa cockpit floor between the bulkheads. Glue on the other fuselage side. Pull the tail and glue with a 1/4" sq. spacer. Add bulkheads E and F and the firewall, A. Glue on the top and bottom 3/8" sheets, both front and rear. Fit and



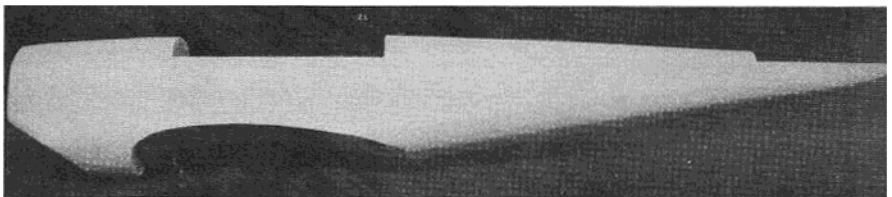
Glue on the top and bottom sheeting and plane off the corners to match the bulkheads. Glue on the angled piece behind the firewall and glue on the corner sheets.



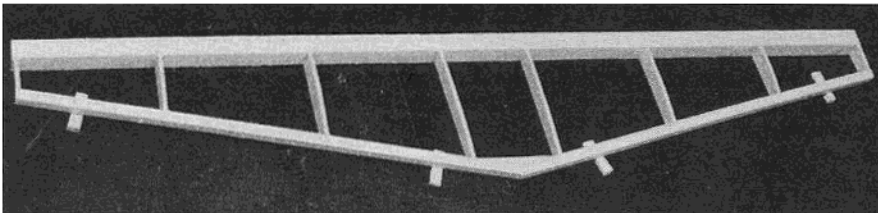
Glue on the other fuselage side. Pull the tail together and glue with a 1/4" sq. spacer at the tail. Add the firewall and the rest of the bulkheads.

glue on the angled bottom piece between the firewall and the forward bottom. Plane and sand the sides and top and bottom to match the angles of the bulkheads for the corner sheets. Glue on the corner sheets. These will be oversize and the excess wood is

that 1/16" wood is adequate and will be lighter. The stabilizer and fin airfoils are sanded to shape with a large sanding block. Only the ribs and the 1/4" sq. leading edge need be shaped. Pin the stab and fin back down to the plan with the 3/16" shims and

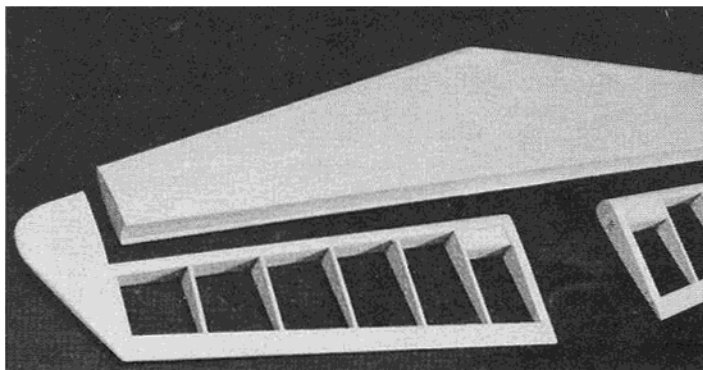


Plane and sand the fuselage to finished oval shape.

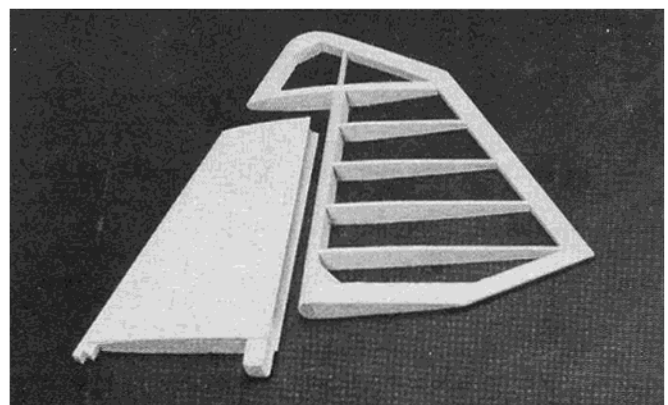


Build the fin and stabilizer over the plan using 3/16" building shims to center the leading edge on the ribs. The rectangular ribs are sanded to airfoil shape when this basic structure is completed.

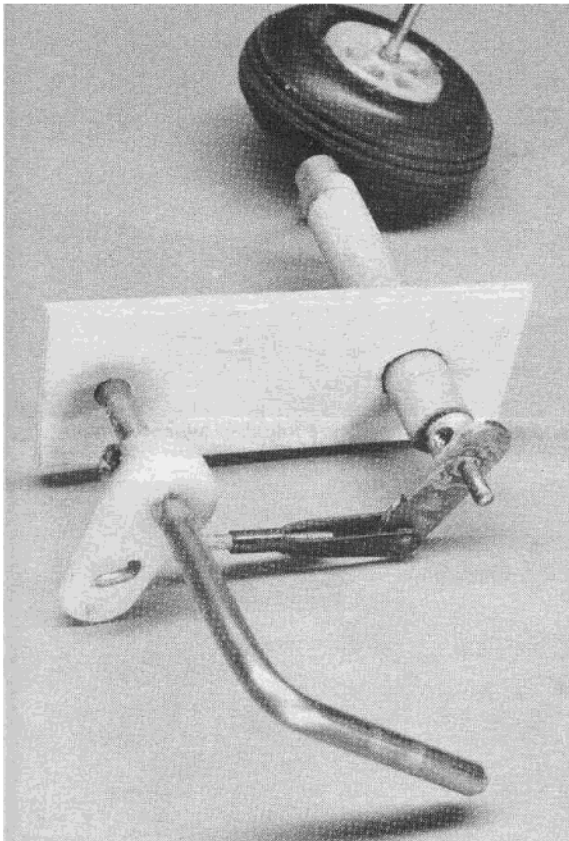
glue on one side of the 1/16" sheet covering. Turn the parts over and replace the shims and glue on the other side of the covering. Add the 1/4" x 3/8" leading edge and sand to shape. Sand the aft face of the spar to a concave shape with a 1" dowel and coarse sandpaper. See the typical cross section drawing of the fin and stab on the plan. The rounded leading edge of the rudder and elevators fit into the



The stabilizer and fin are covered with 1/16" balsa while the elevators and rudder are fabric or film covered. The open structures are built over the plan with shims also, and then sanded to a triangular shape to complete the airfoil.



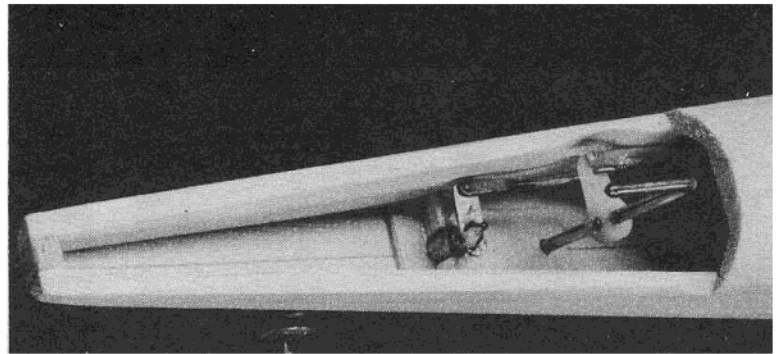
The finished rudder and fin. Note that the fin leading edge and rudder post are left long to notch into the fuselage and stabilizer.



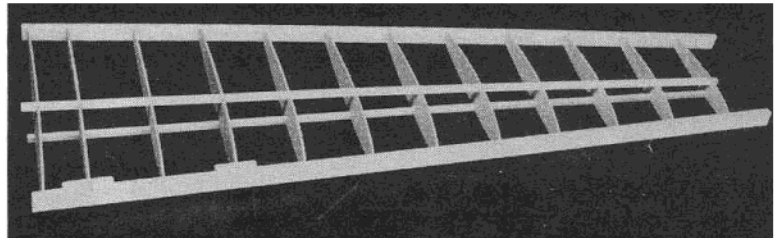
The tail wheel and rudder arm assembly is fitted outside of the fuselage. The plywood base acts as a bearing for the rudder arm.

concave sanded spar for gap-free hinge lines. Next build the rudder and elevators. You will have to cut the 1/2" x 5/8" and 1/16" x 5/8" wood from sheet stock. Pin down the 1/2" x 5/8" leading edge to the plan. Pin down the 1/4" x 1/2" trailing edge over 3/16" shims. Glue in the ribs. Note that the inboard rib is 1/4" thick so that the covering does not distort the shape. Glue on the tip blocks to the elevators and the top portion of the rudder made from 1/2" sq. Add the 1/4" gussets, 1/4" x 1/2" hinge blocks and the 1/2" sq. elevator horn blocks faced with 1/8" plywood. Draw centerlines all the way around the leading and trailing edge of the rudder and elevators as a guide and

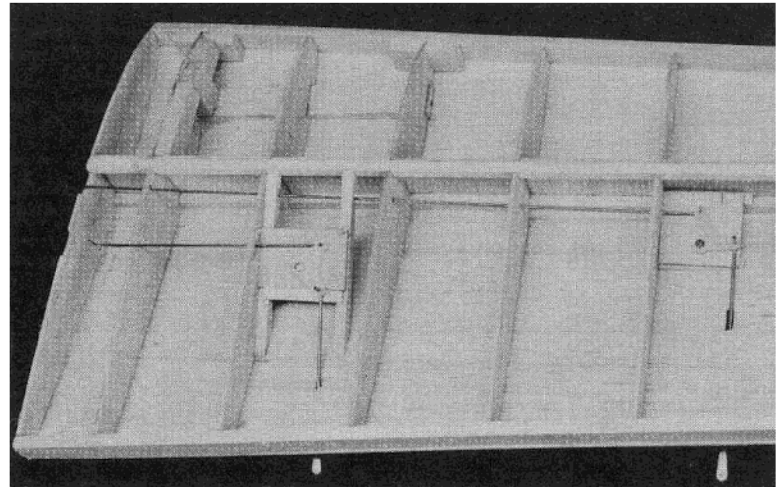
sand them to a triangular cross section. Round the leading edges to fit into the fin and stab. Pin the rudder to the fin and the elevators to the stab and finish sanding the parts to match.



The tail wheel steering arm can be built up from brass and a wheel collar or a 1/8" nose gear steering arm can be cut down and used. The fuselage side must be relieved a little for the rudder steering arm and rudder pushrod.

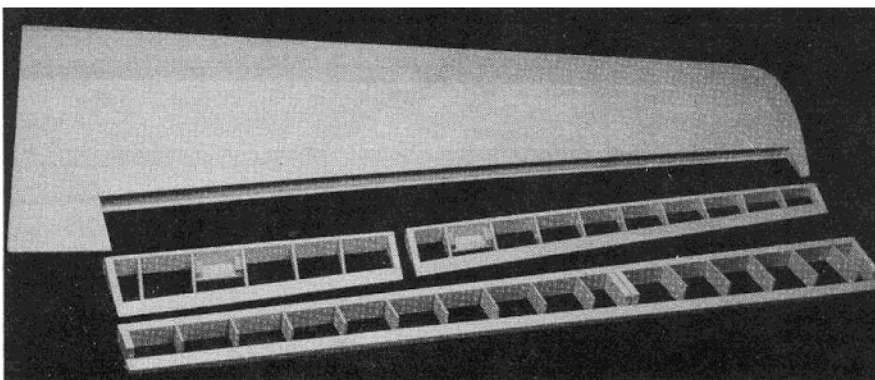


The wing frame is built over the plan with the tabbed ribs glued onto the bottom 1/4" sq. spruce wing spar.

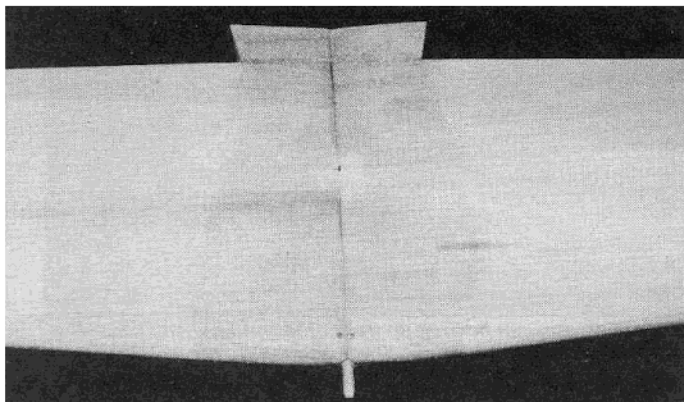


Remove the bottom tabs, but mark and save the four corner tabs so they can be glued on again to the bottom sheeting before gluing on the top sheeting. Glue in the landing gear blocks and the bellcranks and pushrods.

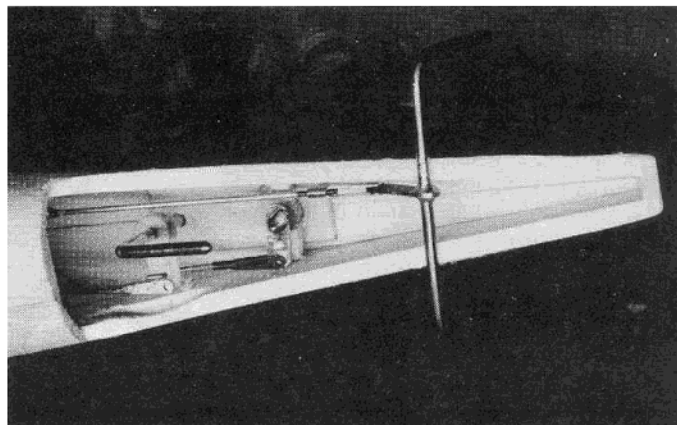
Make the tail wheel and rudder linkage assembly outside of the airplane and glue it into the fuselage when everything fits. Bend the tail wheel wire from 1/8" music wire and the rudder arm from 5/32" music wire. Cut the base from 1/8" plywood. Center drill a length of 3/8" dowel for the tail wheel support and drill the base for the 3/8" dowel. Also drill the base for the 5/32" rudder arm. Shorten a 1/8" nose gear steering arm for the tail wheel and a 5/32" nose gear steering arm for the rudder to match the plan. Bend the connecting link with an adjustable clevis also to match the plan. Glue the base into the fuselage and drill down through the fuselage for the 3/8" dowel. Glue in the dowel and insert the tail wheel wire and attach the steering arm. Tighten and Zap. Attach the steering arm on the rudder arm and attach the



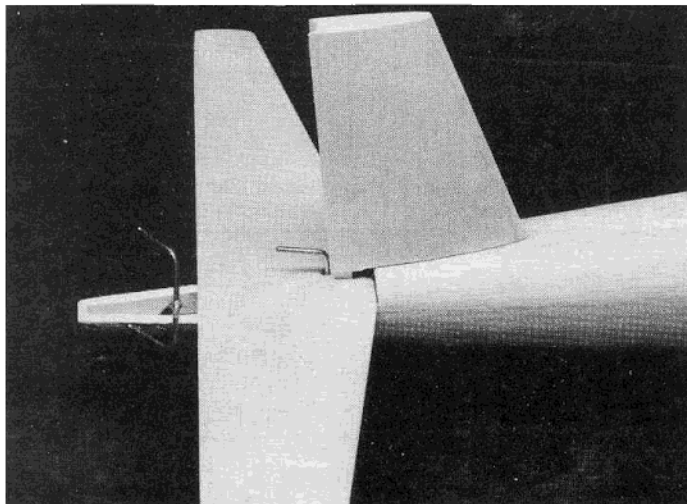
The flaps and ailerons are made in one piece flat on the plan and then sanded to shape. Glue on the hollowed wing tip blocks and block filler, trailing edge at the root. Pin in the shaped flap-aileron to the wing and finish shaping the wing.



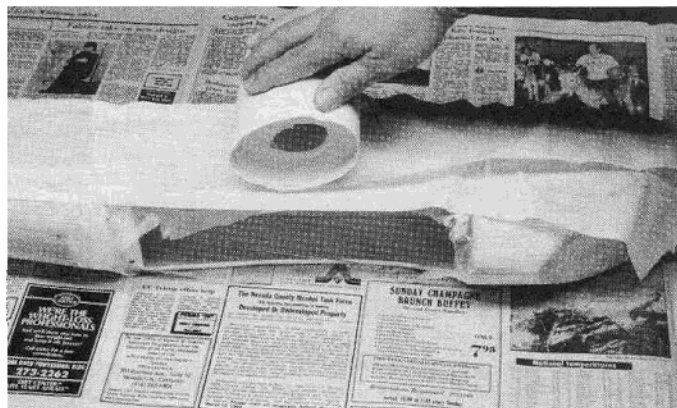
Glue the wing panels together and wrap the center section with a 6" wide strip of heavy fiberglass cloth and resin. Feather sand the edges of the cloth into the balsa sheathing.



The rudder and elevator pushrods are installed with adjustable clevises at the servos.



Glue the fin and stabilizer to the fuselage.



To remove excess resin from the weave of the glass cloth, blot with a roll of toilet tissue by gently pressing and unrolling the tissue over the surface. Tear off the tissue at the end of each pass and then gently remove the tissue before the resin sets. This will leave the weave saturated, but there will be no excess resin to sand off.

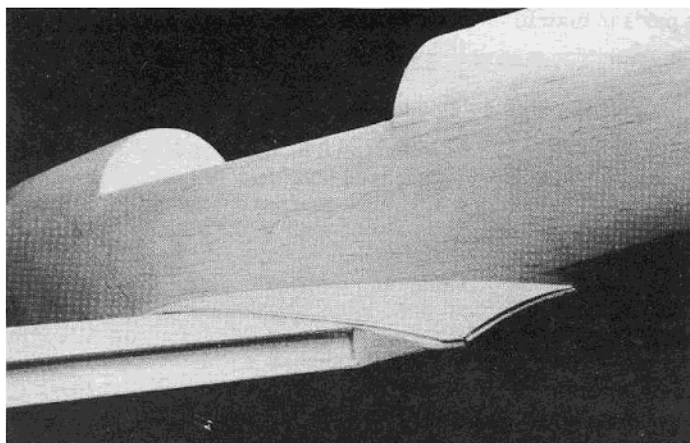
connecting link to both steering arms. Make the two pushrods to the servos from 1/4" sq. hard balsa, 1/16" music wire and solder links. Leave the servo end of the balsa pushrods long and unfinished for now.

Cut a notch for the rudder post in the top sheathing of the stab and a hole through both sides for the rudder steering arm. Enlarge this hole until the rudder arm will slip through this hole. Fit the stabilizer to the fuselage.

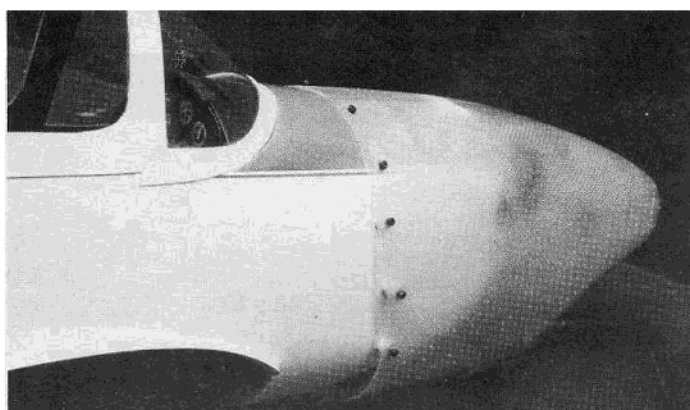
Pin the fin and stab in place and fit the rudder. Check the tail wheel alignment and adjust the connecting link if needed. Small tail wheel steering corrections can be made on the finished model by simply bending the tail wheel wire at the wheel. Glue the stab and fin in place. Make the center section of the elevators from 1/16" balsa and glue in place over the elevator horn wire. Add the 1/4" x 1/2" balsa filler piece and sand to shape.

Glue on the 3/8" balsa dorsal fin and fill all cracks and seams with a mixture of resin and micro-balloons.

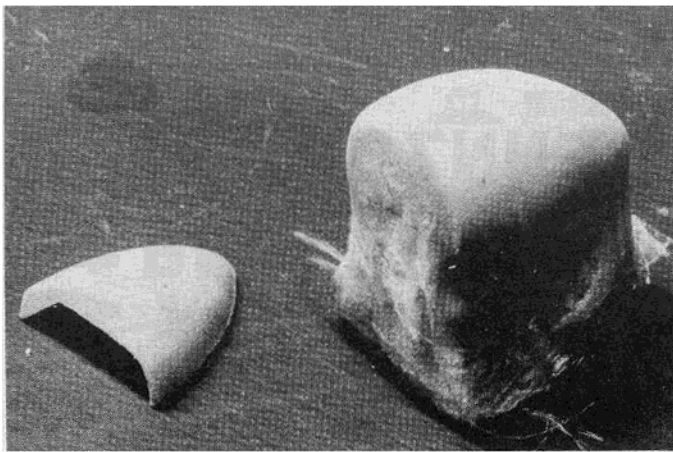
The wing of the original was built up using 3/32" wood for the ribs and the wing sheathing. The wing was covered with 3/4 oz. glass cloth and finishing resin. Only one coat of resin was used and it was blotted with toilet tissue to remove all excess resin. Two coats of primer were sprayed on and wet sanded off leaving no more than



Wing fillet starts with a 1/32" ply base, 1/16" balsa and finished off with resin and micro-balloon filler.



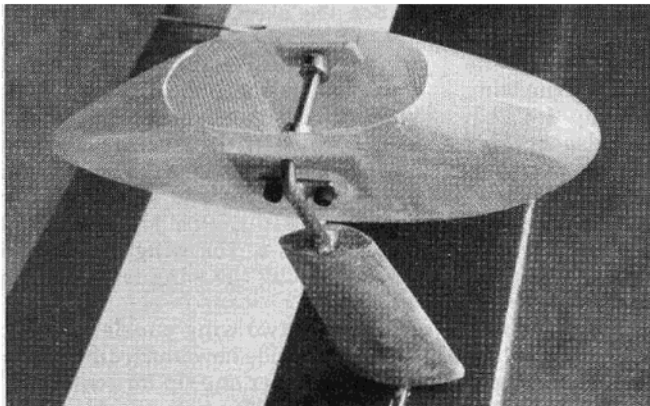
Fit the cowl with the engine installed. Great Lakes RC 4-40 Perma-serts were used in 3/8" dowel stand-offs to bolt the cowl to the fuselage. 4-40 nylon bolts from Ace R/C are used when flying to reduce vibration damage to the fiberglass cowl. Drill hole for needle valve access while cowl is still clear.



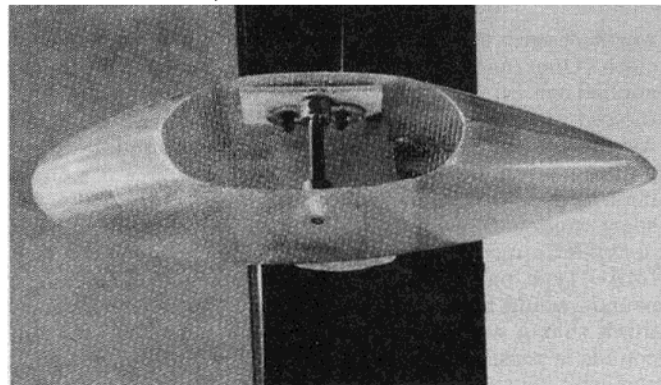
The little side scoops were made with heavy glass cloth and 5-minute epoxy over a foam mold, then pushed into a balloon until the resin sets. Trim off the excess cloth and dissolve out the foam with acetone and you have a finished part.



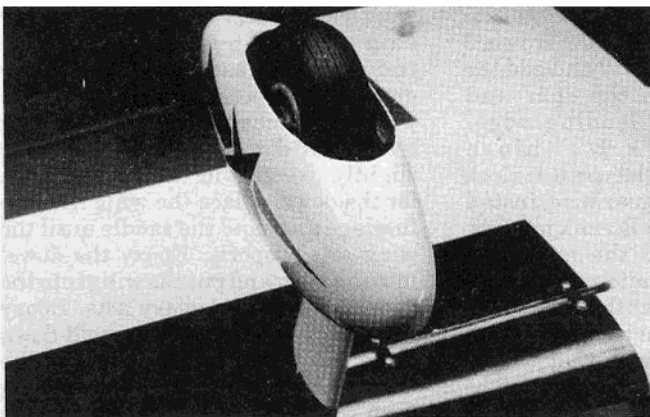
Finished cockpit with fiberglass canopy frame over clear plastic canopy. Modify Williams Bros. pilot to look like Art Scholl by changing hair, cheekbones and add mustache.



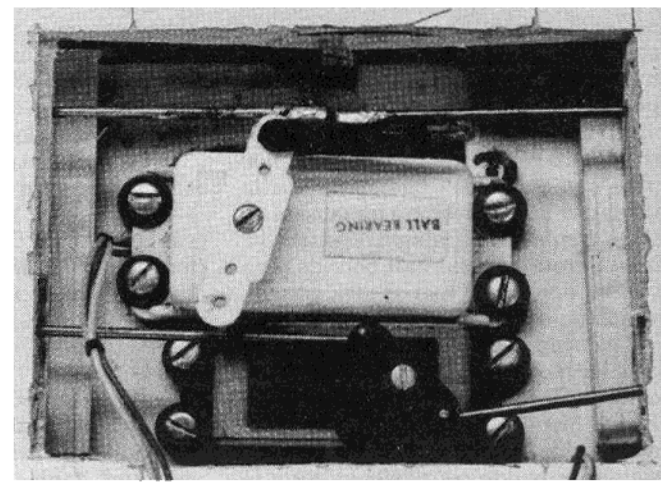
Fiberglass wheel pants from Don Harris on 3/16" wire landing gear. Sig has grooved landing gear blocks for the larger wire sizes. Gear fairing glued on with silicone which allows flexing without breaking.



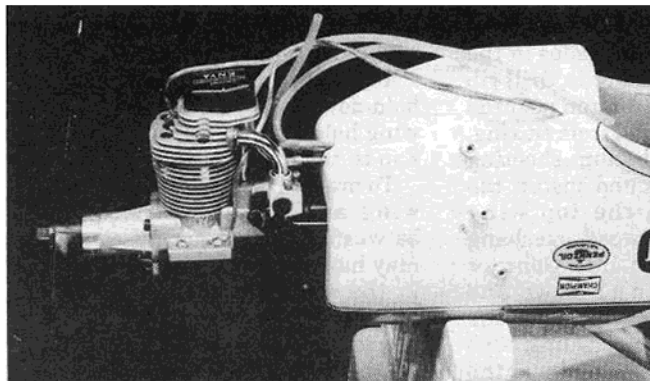
Inside view of wheel pants attachment.



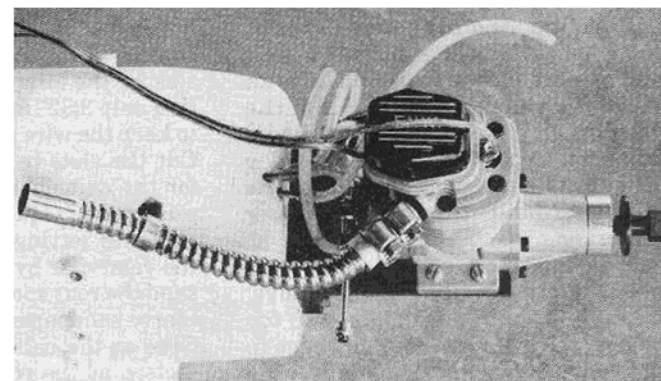
Finished landing gear — looks like the work worthwhile.



Flap and aileron servo in the wing. Standard servos will handle the model.



Enya 90 4-stroke powers this beauty. Ace R/C NiLite III system installed on the inverted engine.



Flexible plumbing tube used as an exhaust tube. Note needle valve extension and glow plug wiring.



Fred checks out the smoke system before a flight.



This four color mylar decal sheet with image size of 11 x 17 is available from Don Harris. See plan sheet.

was necessary to fill the weave of the cloth. One coat of white paint was applied overall followed by one coat of the red and blue trim. Still the wing weighs two pounds finished and three pounds with the servos and the landing gear installed. For a scale or sport model, 8¾ pounds is not too heavy for a model of this size but for IMAC type pattern work, 7½ to 8 pounds would be a lot better. I don't think that a weight of less than 7½ pounds is possible because of the size and complexity of the model. Don has made the cowl, canopy and wheel pants as light as possible, yet they add at least ten ounces over a simple streamlined pattern design. I will happily suffer this kind of weight penalty in order to have a scale airplane. The Enya .90 4-stroke with the 14 x 6 Master Airscrew propeller puts out about 8½ pounds of static thrust which is adequate for most of us in an airplane weighing 8½ pounds or less. Seven and one half pounds plus twelve ounces of fuel is 8¾ pounds which is just about right.

The wing could be built using a foam core with no weight penalty if you are careful. Dean Pappas in his column in *Flying Models* has shown how to build a wing this size for a pattern ship that weighs only one pound. That wing is only partially sheeted, has cut-outs in the foam and is covered with an iron-on film. Another option would be to only sheet the wing back to the spar and capstrip the rest and use an iron-on covering. Based on the preceding, you will have to choose what you want the airplane to be. The following instructions will be for the wing as I built it, but using lighter materials.

Pin the 1/4" sq. spruce spar to the plan and glue on ribs one and twelve. Draw a straight line along the top edge of the 3/8" x 3/4" leading edge to position the ribs. Glue on the leading edge and the 1/4" x 3/4" hinge line spar. Glue in the rest of the ribs using

a straightedge along the tops of the ribs at the rear spar to keep the wing straight. Glue in the top 1/4" sq. spruce spar. Add the balsa bracing around the plywood ribs W-2 and W-4. Plane off the excess wood on the leading edge and the rear spar even with the ribs and beveled to match the angle of the ribs. Carefully mark and cut off the tabs on ribs W-1 and W-12 and set aside so they can be glued back on after sheeting the bottom of the wing. Trim off the other bottom tabs and discard.

Glue the bottom sheeting on both wing panels and glue the four corner tabs back on to the bottom sheet. Cut away the bottom sheet for the landing gear mounts and glue the mounts into the wing. Glue the vertical hardwood landing gear block to W-2 and add the 3/8" balsa between the spar and the block and the leading edge. Glue in the 1/4" x 1/2" hinge support blocks. Drill the vertical block for the 3/16" landing gear wire. Install the flap and aileron bellcrank mounts, the bellcranks, and the pushrods. Leave the 1/16" wire aileron pushrods to the servo 1/2" longer than the wing. The flap pushrods can be bent to final shape and length now or they can be left 1/2" longer than the panels and be cut and bent later. The flaps are optional and probably add about three ounces to the total weight. Flaps are helpful when landing if the model is heavy. When drilling the holes in the ribs for the aileron pushrods, drill rib W-4 only 3/32" for the aileron pushrod to keep the wire pushrod from flexing. Cut the slots in the bottom sheeting for the exit pushrods and install the pushrods. Glue on the top wing sheeting letting the wood overhang the rear spar by about 1/8". Concave sand the rear spar with a 1" dowel and coarse sandpaper from W-2 to the tip. Glue on the balsa block trailing edge section at the root. Rough shape the wing tip blocks and hollow them out as much as possible, then glue them to

the wing tips. Build the ailerons and flaps flat on the plan. I use straight strip stock for the ribs and cut off the excess wood with a razor saw and sanding block. Build each flap-aileron unit as one piece and separate after final shaping. Pin the finished flap-aileron to the wing panels and finish shaping the wing leading edge and tips.

Glue the two wing panels together after you decide how much dihedral to use, 6½" under one tip for scale or 3" under one tip for pattern. Align the wing tips when gluing the two panels together, any slight misalignment at the root can be sanded off and the wing will fly more truly. Wrap the joined wing center section with a 6" wide strip of heavy (6 oz.) glass cloth and resin. Feather sand the edges of the glass cloth to blend into the sheeting.

Drill bulkhead B for the 1/4" wing hold-down dowel and drill the wing slightly oversize in the leading edge for the dowel. Place the wing into the fuselage and sand the saddle until the wing sets properly. Epoxy the dowel into the wing and put the wing into the fuselage until the epoxy sets. Epoxy the 1/4" plywood rear wing hold-down plate into the fuselage. Center the wing to the fuselage by measuring from the rear of the fuselage to each wing tip. Tape the wing in place and drill two 3/16" holes through the wing and the hold-down plate for the two 1/4" nylon wing hold-down bolts. Run a 1/4-20 tap through the wing and hold-down plate holes. Drill out the wing holes with a 1/4" drill and apply Zap to the inside of the holes.

To make the wing fillets, loosen the wing and slip the plywood bases between the wing and fuselage. You may have to run a piece of sandpaper in the slot first to open up the slot enough for the bases. Zap the bases to the fuselage with the wing in place and bolted on tight. Be sure the bases are flat against the wing. Use the glue

ART SCHOLL'S SUPER CHIPMUNK

Designed By:

Fred Reese

TYPE AIRCRAFT

1/6 Sport Scale

WINGSPAN

66 Inches

WING CHORD

13 3/4" Root

8" Tip

TOTAL WING AREA

720 Sq. In.

WING LOCATION

Low Wing

AIRFOIL

Semi-symmetrical

WING PLANFORM

Double Taper

DIHEDRAL EACH TIP

1 1/2" — Pattern

3 1/4" — Scale

O.A. FUSELAGE LENGTH

52 Inches

RADIO COMPARTMENT SIZE

(L) 12" x (W) 4" x (H) 2 1/4"

STABILIZER SPAN

26 1/4 Inches

STABILIZER CHORD (incl. elev.)

6" (Avg.)

STABILIZER AREA

144 Sq. In.

STAB. AIRFOIL SECTION

Symmetrical

STABILIZER LOCATION

Top of Fuselage

VERTICAL FIN HEIGHT

9 1/2 Inches

VERTICAL FIN WIDTH (incl. rud.)

8" (Avg.)

REC. ENGINE SIZE

.60 2-stroke; .90 4-stroke

FUEL TANK SIZE

10-12 Oz.

LANDING GEAR

Conventional

REC. NO. OF CHANNELS

4-5

CONTROL FUNCTIONS

Rud., Elev., Ail.

Flaps, and Throt.

BASIC MATERIALS USED IN CONSTRUCTION

Fuselage Balsa and Ply

Wing Balsa, Spruce, and Ply

Empennage Balsa

Wt. Ready To Fly 128-144 Oz. (8-9 Lbs.)

Wing Loading 25.6-28.8 Oz./Sq. Ft.



surfaces of the cockpit as the cardboard can be finished with a couple of light spray coats of flat black lacquer. The instrument panel is also card stock painted flat black with cut-outs for the instruments. Glue a piece of clear plastic behind the card and then glue the instruments to the clear plastic from behind. Glue the finished panel into the cockpit. The portion of the fuselage above the instrument panel is also flat black while the fuselage behind the back seat is white. The blue seatback with a white star was painted with Aerogloss Curtis Blue as it more closely matched the color of the blue leather seatback. The other cockpit details are made of balsa or dowel and painted flat black. The 2" Williams Bros. pilot figure was modified to look like Art Scholl. Grind off the forward part of the hair and fill the hole with a mixture of micro-balloons and 5-minute epoxy. More of the epoxy mixture was used to simulate Art's hair and mustache and higher cheekbones. Paint the pilot figure according to the Williams Bros. directions using a mix of grays for the hair.

If you use the optional fiberglass canopy frame over the clear plastic canopy, you will have to cut the canopy into two pieces, front and rear, to get it to set into the frame. The frame was designed so you could make an opening canopy if you wanted. Mine is fixed but I used the frame anyway as it does look better with actual raised edges. After the canopy is glued into the frame and the frame bottom is trimmed, you will have to trim away some of the clear plastic around the bottom and sides on the inside to allow the finished canopy to fit properly to the fuselage. Glue the finished canopy to the fuselage.

The cowl is most easily fit before painting as you can see through it. Mount the engine, side mounted is best for idle and reliability, but it will fit inverted if you want to completely hide it as I did. With the engine inverted, I strongly suggest you use an onboard glow plug battery to improve the throttle response and idle. I used the Ace R/C Nilite III system which I highly recommend. The simple

throttle switch allows you to turn on the glow plug at the rpm that it is needed. The switch slides over the throttle pushrod and a dab of silicone secures the switch to the fuselage side. What I really like is never having to hook up glow plug leads to start the engine. Just bring the throttle to idle and hit it with the starter and it is running.

With the engine inverted, the heavier Master Airscrew gives a much smoother and slower idle. A wooden 13 x 8 flies the model a little faster but also has to idle faster which makes ground control and landing a little harder. The 14 x 6 flies the model plenty fast and may have more vertical pull. The engine will idle well side mounted with any propeller. With the engine mounted, cut out the cowl to fit the engine and trim the rear of the cowl to match the plan. The cowl is held on with eleven 4-40 nylon bolts in the scale positions around the rear of the cowl. This may seem excessive but it works and holds the cowl firmly and has withstood some rather rude nose first three point landings. The cowl is much wider than the front of the fuselage so 3/8" dowels were used as stand-offs to hold the cowl in place. The 3/8" dowels can be drilled and tapped for the 4-40 bolts or Great Lakes R/C 4-40 Permaserts can be glued into the dowels. I used them. The top screws hold the cowl tight to the fuselage while the three side screws on each side must have the stand-offs. Slip the threaded dowels into holes in the fuselage and screw the cowl into place including the side screws pulling the dowels out to the cowl. With the cowl held even, side to side, Zap the dowels into the fuselage.

Make a needle valve extension or at least a socket on the needle valve that can be reached from the outside with a ball driver. I solder the head of a 4-40 or 6-32 Allen head screw to a wheel collar that will fit over the needle valve stub. With the cowl unpainted, you can line up and drill a hole in the cowl to adjust the needle valve. I have never bothered with the choke as the engine starts easily without it with an electric starter and there is less chance of flooding the engine.

sparingly or the wing may be permanently glued to the fuselage. Use some scrap wood to partially fill up the fillets and then apply micro-balloons and resin to finish forming the fillets.

Before gluing the canopy, finish the cockpit interior. I use card stock and contact cement to finish the flat

From RCModeler Feb. 1986

Cover and finish the model as you wish and apply the decals. Use a soapy water wash under the larger decals so they can be positioned without sticking. All of the air bubbles can be worked out and when the solution dries, the decal is permanently attached. Spray a coat of clear urethane or epoxy to seal the edges of the decals and pin stripes.

Install the fuel tank with the center of the tank even with the center of the carburetor. With the wing, engine, cowl and landing gear in place, check the balance point to get an idea where to place the radio. Mine was nose heavy, and required the radio to be positioned as far back as possible. Position the radio as needed and mount the servos. Cut off the 1/4" sq. balsa pushrods 1/2" short of the rear of the servos. The pushrods are adjusted by the clevises at the servo. Cut the wire ends of the clevises to overlap the balsa pushrods by about an inch and make a sharp bend in the wire and cut off leaving about 1/16" to dig into the balsa. Cut 1" lengths of 3/8" brass tube and slip them over the balsa and wire with some epoxy to complete the pushrods. The throttle pushrod is 1/16" wire.

The stock exhaust pipe can be angled so that exhaust dumps out of the bottom or side of the cowl. I made a scale-like exhaust extension from a flexible plumbing tube which will work if you use a flexible connector between the engine and the exhaust tube. Otherwise the vibration will crack the tube. The O.S. exhaust pipes will fit both the O.S. and Enya 4-stroke engines.

When the time comes for that first take-off, you will discover that you need every bit of the rudder you can move, just like those high powered fighters of WW II. When the tail comes up, the nose starts to swing and you start pushing rudder to keep it straight along with a little elevator to lift off. Gradually release the rudder during climb out. Once in the air and trimmed out you will also discover that you have a big pussycat that is gentle and easy to fly but will do anything that you ask of it. Keep some power on during final approach for landing and chop the power completely just before touchdown putting the Super Chipmunk down on the mains and let the tail settle. The big wing does not tip stall, but if you slow it down too much, the sink rate increases and you will bounce it. With a little practice you will be greasing it on just like the real thing. A fiberglass cowl and wheel pants, canopy and decal set are all available for the scratch builder to complete the model as shown. Complete source and pricing information is shown on the plans. □