

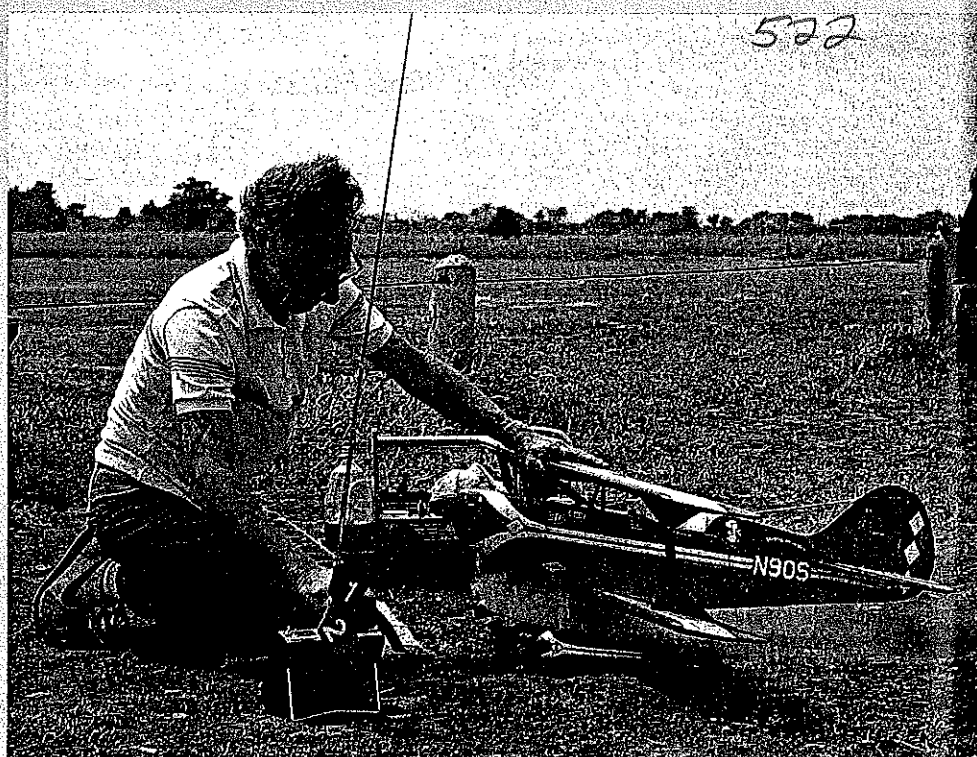
Sorta Pitts



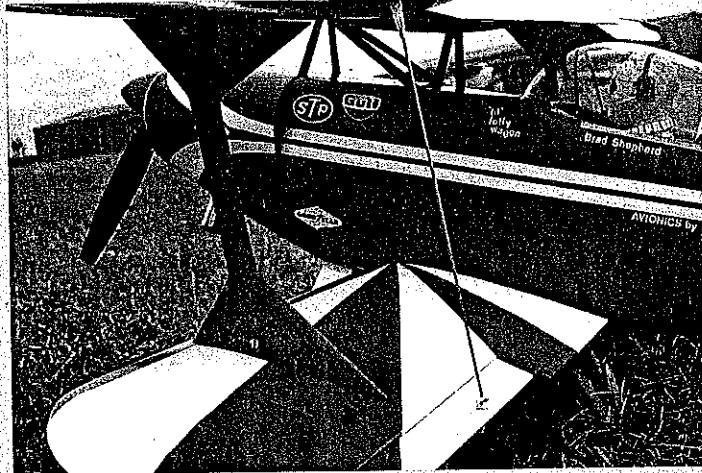
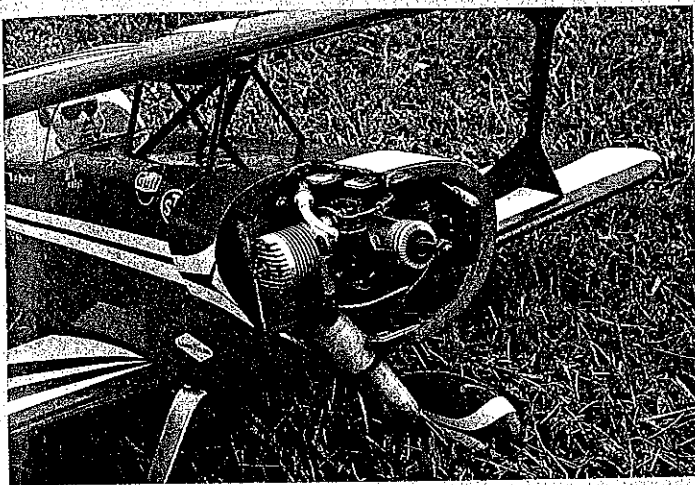
In this RC model you can see all the romance of today's full-scale sport flying and aerobatics, but it's a look-alike without the complication of duplication in miniature. The design is for .40-.60 sport engines, and it uses five RC channels (fifth for the smoker).

■ Brad Shepherd

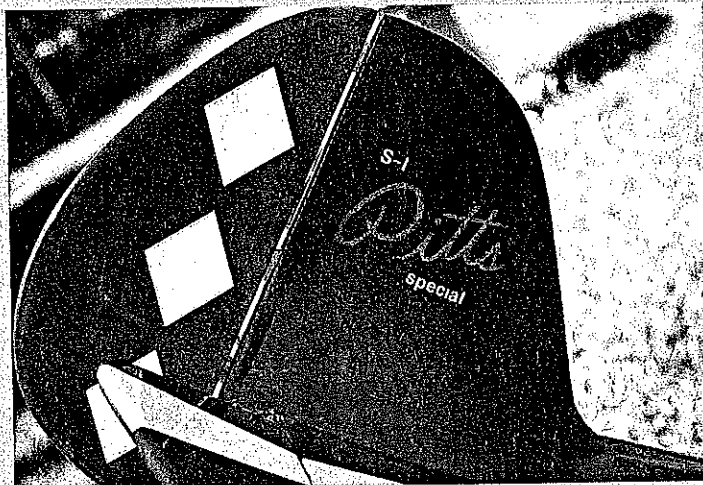
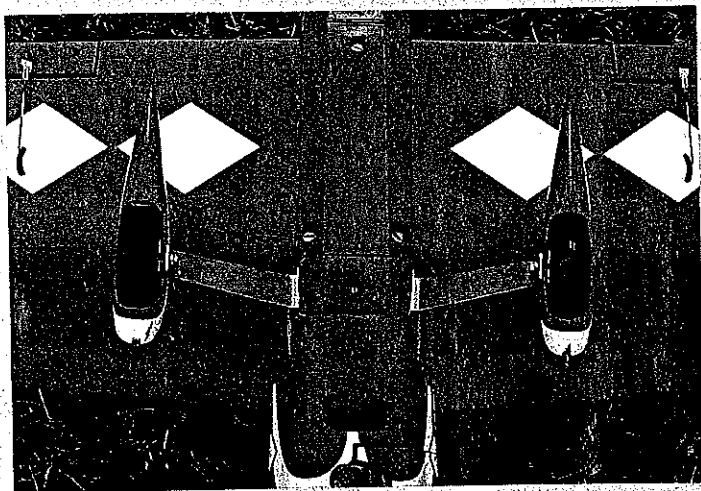
THE SKY DIVERS have gathered up their chutes, the "drunken" pilot in the J-3 has given everyone a lot of laughs, the



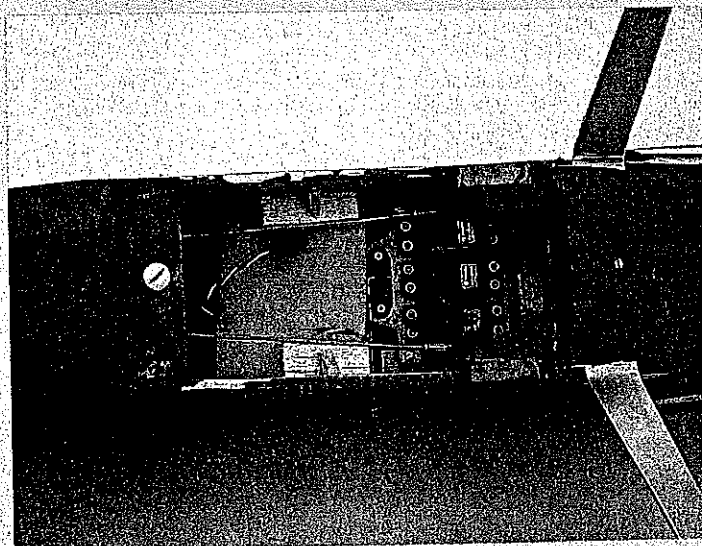
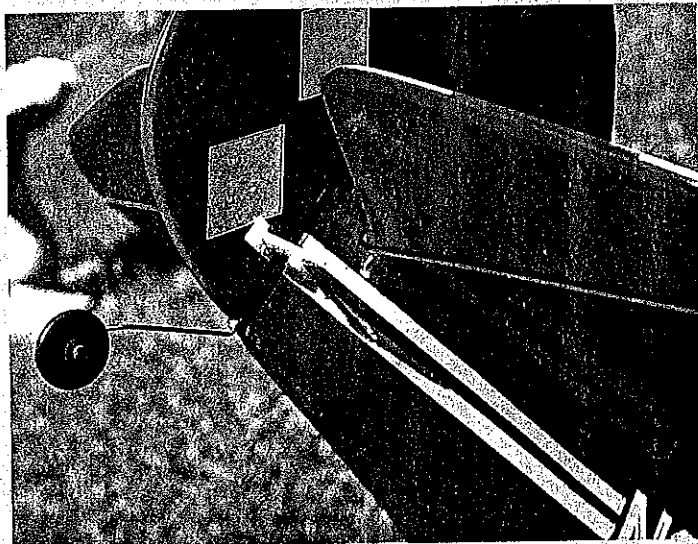
Top: From this view you can't tell that this picture was taken at Ball Airport in Texas which, according to the author, evokes the "pea patch" kind of flying which he thinks the Pitts so readily evokes. Mr. Ball at the airport still mows the grass, does some fabric work, and expounds his wisdom to the younger set of sport fliers. A vanishing breed. Above: Brad Shepherd is warming up the engine and checking the smoker before putting the Sorta Pitts into the air. Pic taken by Brad's grandson, Gary, at a model airport in the Dallas area.



Left: Cowling removal reveals the muffer/smoke generator and some of the plumbing. Note hole in the plywood on the left half for the hold-down screw. Right: Aileron interconnecting link was made from a Goldberg mini-link and rod. Screws hold the interplane struts. It takes about five minutes to get the model ready for flight upon arrival at the flying field. It may not be a true Pitts, but it could fool lots of folks.



Left: Things to see in this bottom view include the three wing attachment bolts, landing gear fairing block held with one 4-40 screw, and the engine compartment vent hole. Right: Pitts lettering on the fin was hand-painted with gold Pactra Name! and sealed with clear urethane. Smaller lettering is the dry transfer type that you can find in art supply stores, drafting supply houses, or large stationers.



Left: Detail of the rudder horn and Sullivan cable pushrod that makes a neat installation. Right: Picture shows where the author finally located the radio gear after test flying. Receiver, well-padded with foam, is behind the servos. Note the plywood shims under the bottom wing leading edge—referred to in the text (the part concerning flight testing). The setup finally achieved is as shown on the plans.

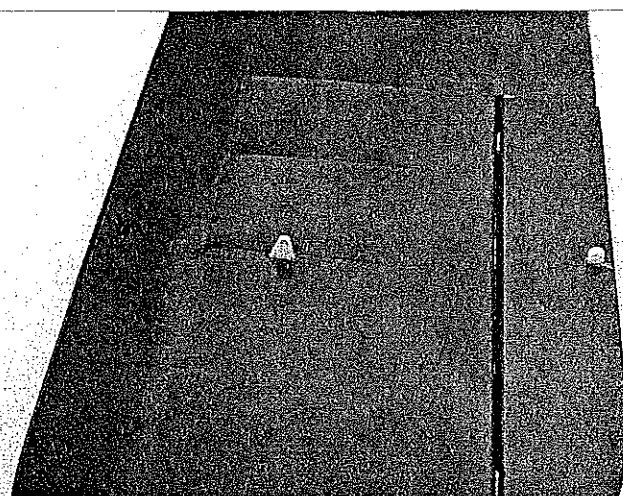
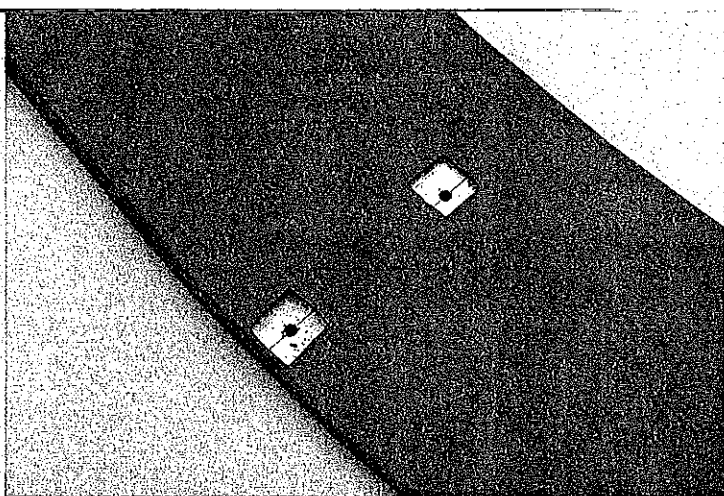
clipped-wing T-craft has put on a good show of primary aerobatics, and the Decathlon is taxiing to the ramp.

It is about 3:00 in the afternoon at the local air show when the pulsing sound of 180 horses fills the air as the small red

object on the far end of the runway begins to move. Faster now, it lifts off staying two feet above the runway. With smoke billowing from the exhaust stacks, it pulls up and rolls inverted as it passes the crowd. Pushing outside to a vertical climb, a half roll,

and then a hammerhead stall, it comes boring down, pulling up a few feet from the runway into a loop with a snap roll on top!

Who among us does not get their "jolly juices" flowing as one of these little bi-planes does its thing painting a ballet in the



Left: Holes in the bottom sheeting of the top wing fit snugly around the cabane strut blocks and are covered by the cabane fairing when the wing is bolted in place. **Right:** Interplane strut fittings on the bottom of the upper wing showing the nylon horn hold-down for the strut and the piece of aileron horn used for the interconnecting link on the ailerons. Except as noted, all photographs are by the author.

sky? Since 1946 when Betty Skelton started thrilling people with an aerobatic routine in her Little Stinker, the first plane that Curtiss Pitts built, this little biplane has been at or near the top of the heap of aerobatics competition, with several World Championships to its credit.

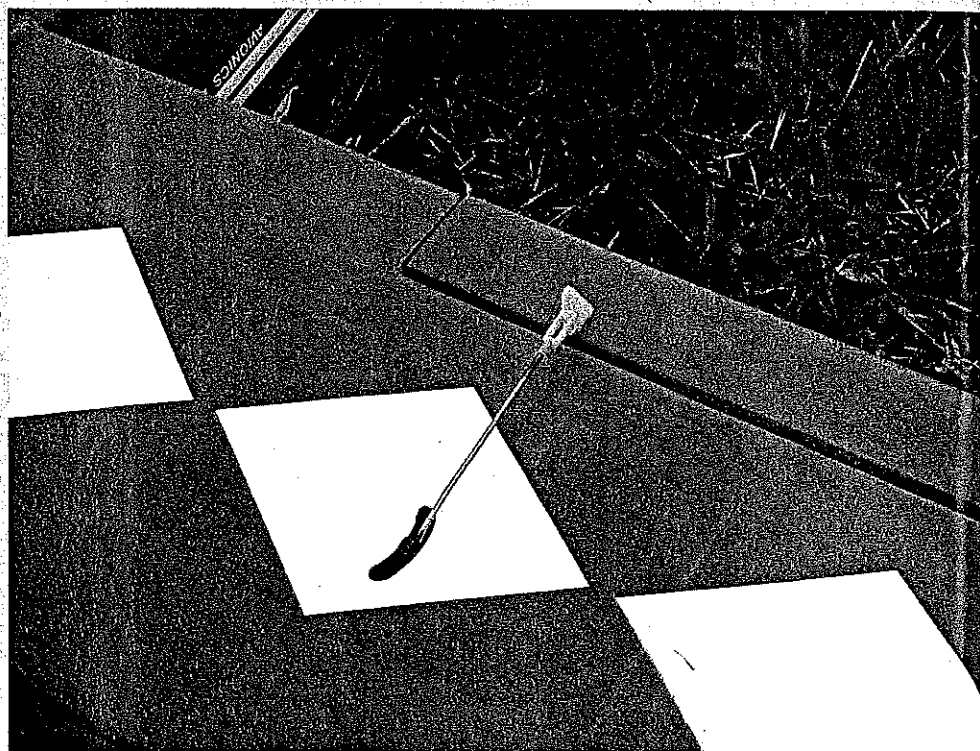
Contrary to some opinions voiced in the past (mine included), the new breed of monoplane has not yet replaced the Pitts in competition aerobatics. Seven out of the nine planes on the U.S. Aerobatics Team at the Hungary World Champs in 1984 were Pitts airplanes, with Debbie Rhin winning a bronze in the Women's Individual and Harold Chappel in his Pitts helping Henry Haigh and Kermit Weeks to capture the Team Trophy.

It is difficult to know exactly how many have been built worldwide, but undoubtedly they number in the thousands, with custom models still rolling off the line in Afton, Wyoming, where Herbe Anderson produces them under the Christen banner.

While browsing among the materials and mementos I've saved over the years, I found several pictures of Pitts Specials. Suddenly the question of what to build for my weekend biplane was settled.

I made no attempt to scale this model, so the purists among us might take me to task for calling it a Pitts. Anyway, it looks like a Pitts in the air, and that's what I built it to do.

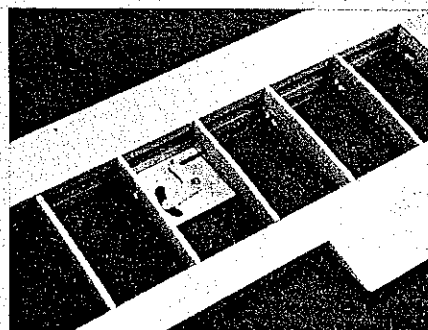
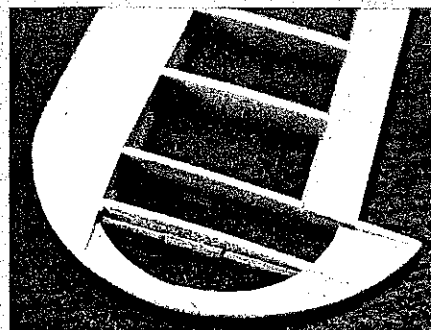
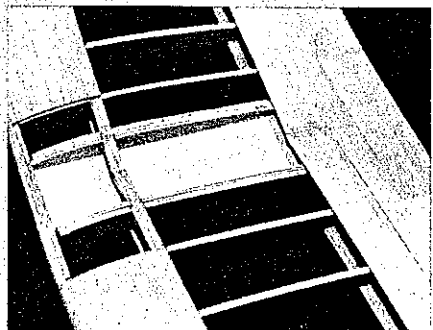
As a reference in designing the model, I used some pictures of Pitts airplanes and some general dimensions that I thought would make a good flying model for .40 to



We see here the final installation of the aileron crank mount, radius slot, and horn with flange cut off for burying into the aileron leading edge and securing with Hot Stuff glue.

.60 power. The initial flight wasn't exactly "right off the board," as the center of gravity (CG) was slightly too far aft and it had some built-in left turn, but I managed to get it back in one piece. Shifting the gear forward and adding nose weight brought the CG to the correct location. Adjusting the

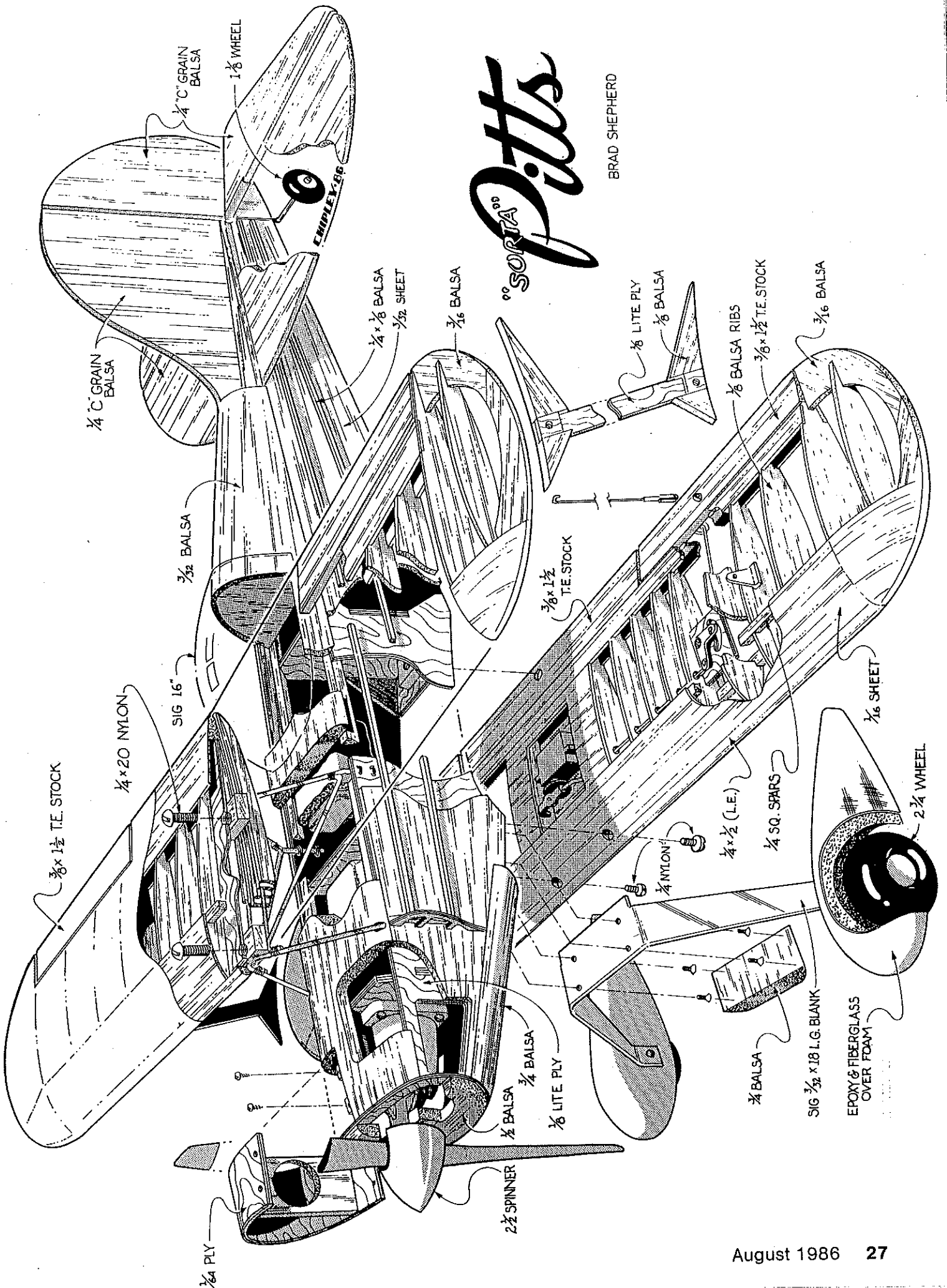
aileron setup eliminated the model's tendency to turn. The next flight was considerably better but still not what I wanted, so I began shimming the lower wing. As originally built, the lower wing had about 1° of positive incidence. I added 1/64-in. shims one at a time until the force arrangement

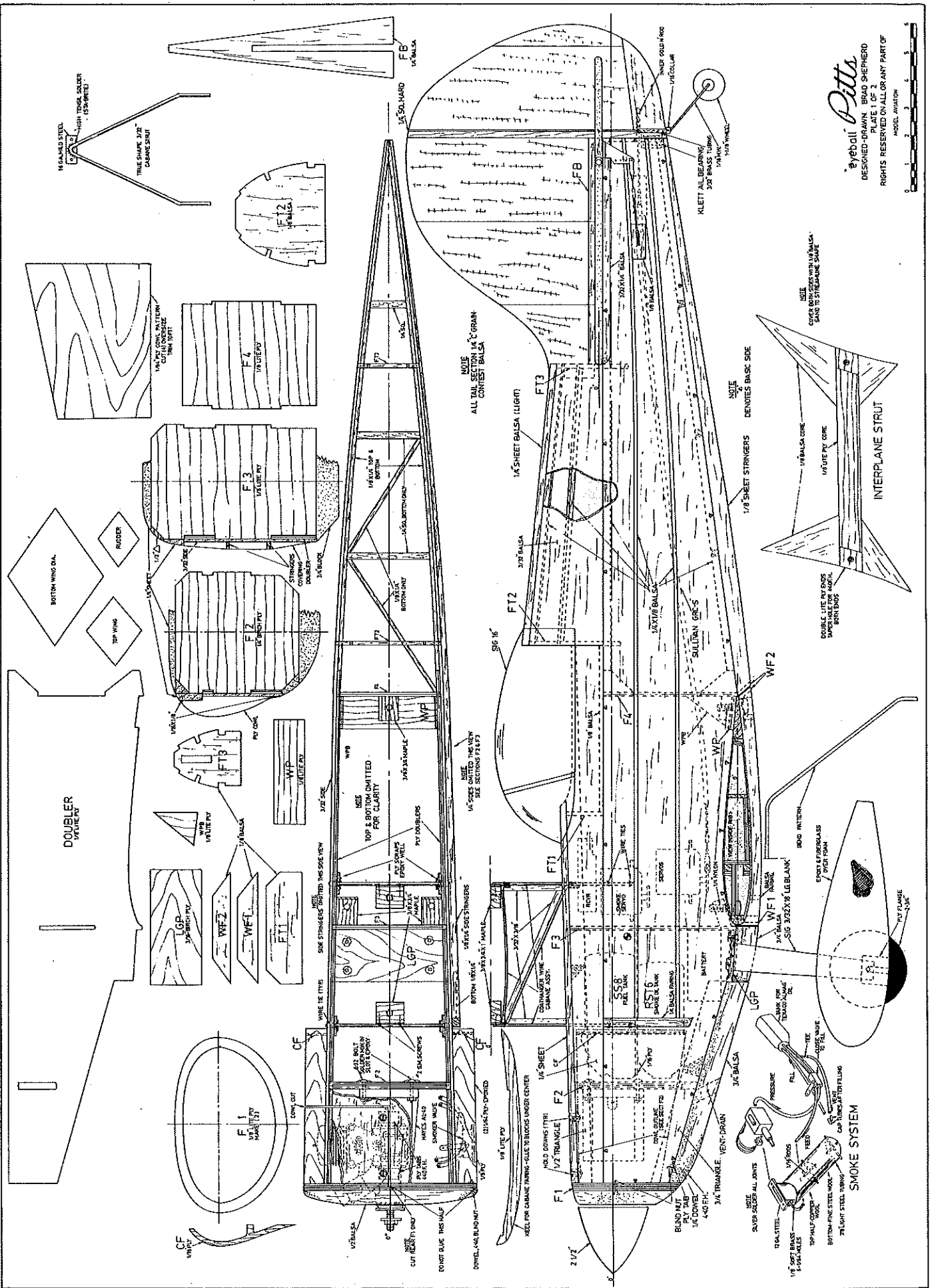


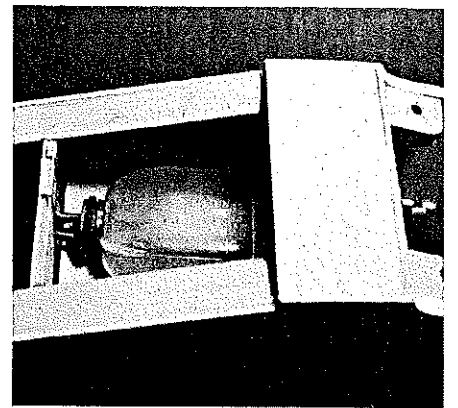
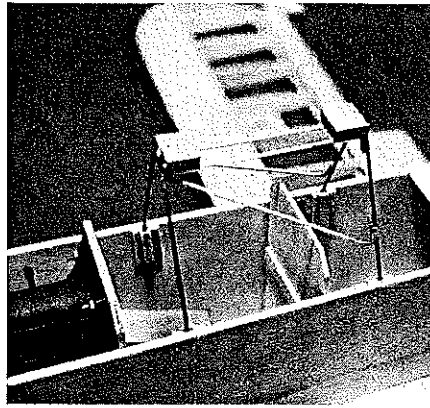
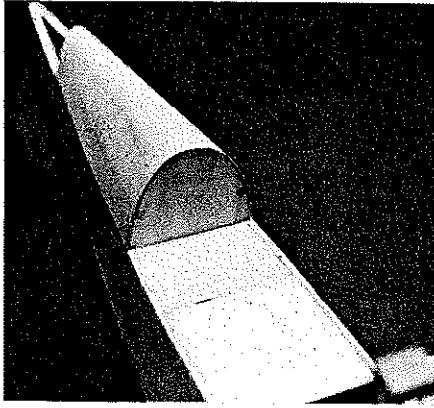
Left: Center section of the upper wing showing the ply half-ribs and plywood mounting plate. Spar joiners haven't yet been installed. **Center:** Wing tip with soft blocks sanded to shape and scrap balsa between the tip ribs. Note how the sub-ribs fair into the tip. **Right:** Aileron crank mount glued to the rib cutouts with the crank and pushrod mounted. Note the curved slot needed for the aileron pushrod.

SORTA[®] Pitts

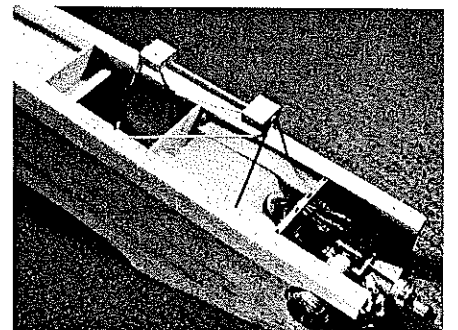
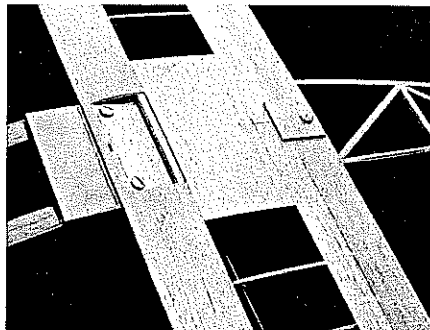
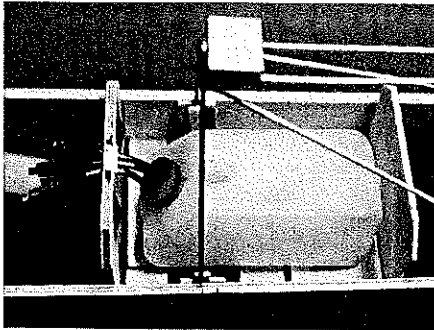
BRAD SHEPHERD







Left: Turtledeck side sheeting and $\frac{1}{4}$ -in. top sheeting in place and sanded to final shape. Center: Cabanes installed and soldered. Note ply braces on the doublers, wire ties on the fuselage sides, and centerlines on the maple blocks for lining up the cabanes. Right: Smoker tank installation, bottom triangles glued in place. The landing gear plate has been epoxied; note how it fits flush with the sides and F3.



Left: Ply firewall is relieved to accept the tubing for the fuel tank installation. Tubing is epoxied in place with a scrap filler piece added to the top. Center: Bottom wing bolted on. Note ply bearing plate at the trailing edge of the wing and brass braces at the fuselage rear. Should you see differences between the pictures and plans, author says that you should follow the plans. Right: Side pieces of $\frac{1}{4}$ -in. balsa and $\frac{1}{2}$ -in. triangles have been glued in place. Note foam packing around fuel tank and slot for engine cylinder so cowling can be mounted.

reached 0° , and the bad habits seemed to be ironed out.

With 726 sq. in. of wing area and a loading of 18 oz./sq. ft. with my .40 engine installed, it does all that is asked of it except for four-point vertical maneuvers. With a .60 engine and some additional beefing up of the spars, it can be turned into a real honker.

At the CG is shown on the plans, the model has the following surface movements: elevator, $\frac{3}{8}$ in. up and down, ailerons $\frac{3}{8}$ in. up and down, and the rudder has as much movement as you can get without interfering with the elevator. The smoke system shown on the plans has worked well for me over the past few years, and I've

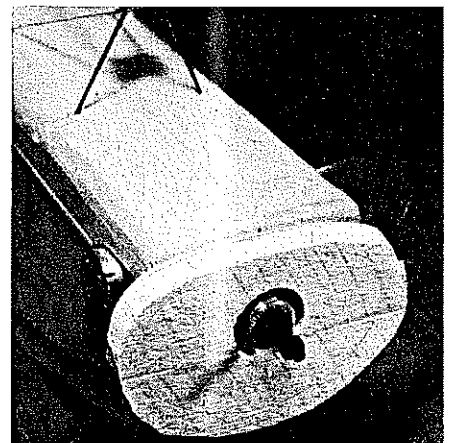
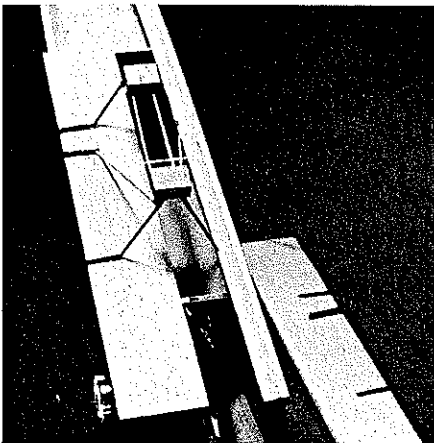
increased the density by stuffing the muffler with copper wool made from the strands of an unraveled car battery ground cable.

If all this interests you enough to get your building adrenalin flowing, look over the pictures and the plans together to help clear up any areas that might appear a little difficult.

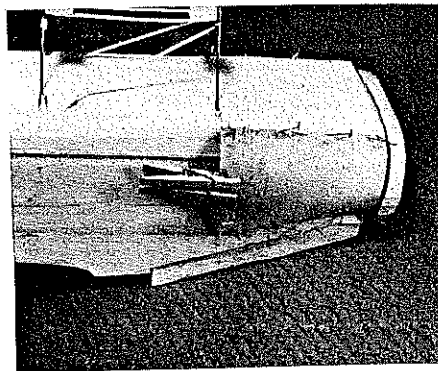
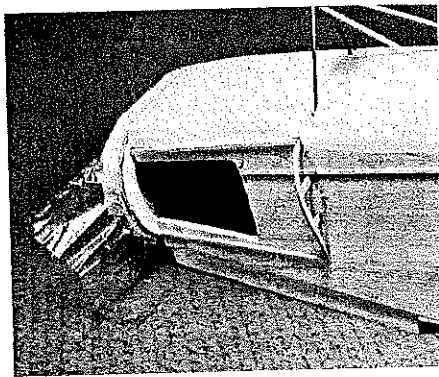
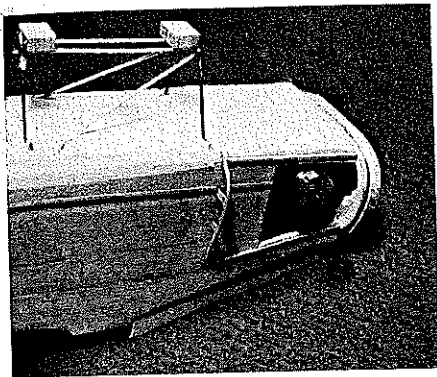
Construction. The wings are pretty much standard and have to be built first in order to set the cabane strut blocks properly. The notes and details on the plans should be sufficient for construction to proceed without any problems. The horn locations for the interplane struts are approximations, as the final location will depend on the in-

dividual model. The exact length of the plywood core of the struts may vary slightly, so when you get to the stage of rigging the wings, remember that the strut shown on the plan is the length of the prototype and may not exactly match yours.

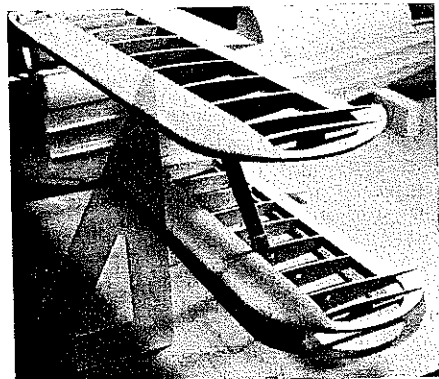
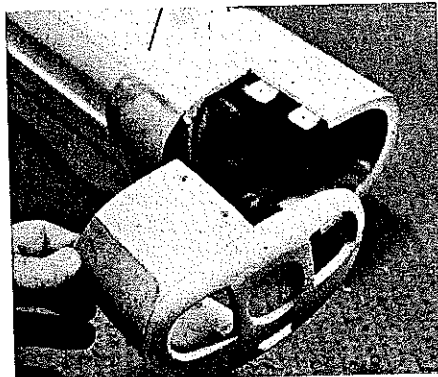
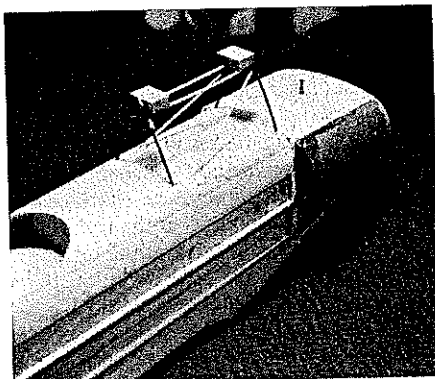
Note the drawing of the main rib #2. A jig to ensure correct placement of the ribs is made of $\frac{1}{16}$ -in. shims under the bottom spar and a piece of $\frac{1}{4}$ in. sq. positioned at the leading edge of the bottom trailing edge sheeting. The top wing is built flat and in one piece, but the bottom wing will be built as two halves, then joined. Pin the spar, shims, and the piece of $\frac{1}{4}$ in. sq. to the covered plans; glue all the ribs in place. Note the cutouts in the ribs where the



Left: Top $\frac{1}{4}$ -in. sheet halves showing the relief slots for cabane struts. Sheets are attached one at a time for ease of installation and to get a neat, smooth job. Center: Former F1 glued in place. Note centerlines on fuselage blocks and F1 for alignment. Right: Front balsa cowl block is roughly cut and glued on after the second F1 has been glued in place. Note the poly sheet between the two F1 formers.



Left: Hole around the engine has been enlarged and C1 has been glued on—along with balsa strips for the cowl outline. Center: The opposite side cutout for cooling air to pass into the cowl and out the rear exit. It's ready for the 1/64 plywood skin to be epoxied on. Right: A ply side cowl piece glued, pinned, and clamped in place while the epoxy cures. Clothespins work nicely for holding it to C1.



Left: Side stringers and balsa fairing piece just aft of the cowl have been added. Note how the fairing is tapered to conform to the shape of the cowl and top side of the fuselage. Center: With this much of the cowl being removable, there is good access to the engine and smoker fittings. Note the anchor tabs and countersunk holes in the inset dowels to allow the screw heads to be flush. Right: This is the most critical part of rigging the model. A triangle is used to get the top wing square with the bottom one. Fuse and wing blocked level.

aileron bellcrank mounts go. Glue the top spars into place.

Glue the 1/8 x 1/4-in. rear spar to the edge of the 1/16 x 1-in. trailing edge sheet, then glue both pieces onto the ribs, butting the spar against the rear of the ribs. Glue the 1/8 x 1/16-in. leading edge spar to the front of the ribs, and sand to conform to the contour of the ribs.

Add the leading edge sheeting. Make sure the joints in the sheeting are over the center of the ribs as shown on the plans. The 1A plywood ribs can be glued to the top of the wing at this time, after which the ply spar pieces should be added.

Turn the top wing and bottom panels over, and glue the 1/16-in. webbing and the bottom sheeting in place. Raise the bottom wing with 1/2-in. blocks at each tip, then glue DB1 and the three DB2s in place.

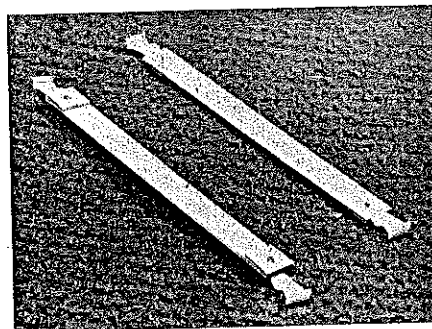
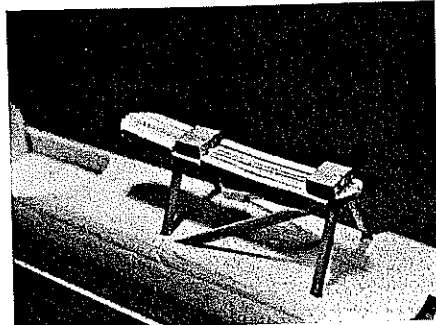
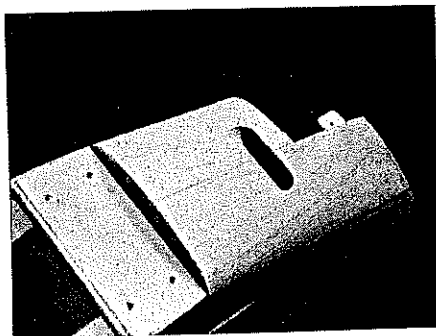
Draw centerlines on the outboard #2 ribs and glue the tips in place, keeping them 90° to the ribs. Glue scrap 1/8-in. sub-ribs to the wing tips and 2A ribs and soft block to the top and bottom of the tip leading edges. Sand the leading edge sheeting with a long sanding block, then glue the 1/4 x 1/2-in. balsa leading edge in place. Cut the 3/8 x 1 1/2-in. trailing edge stock to length. Sand to a good fit against the rear spar. Glue in place with cyanoacrylate (CyA).

The ailerons will need about 1/16 in. trimmed from the leading edges so they will fit flush with the rest of the trailing edge. After trimming, sand to a double taper as shown on Sec. A-A of the drawing.

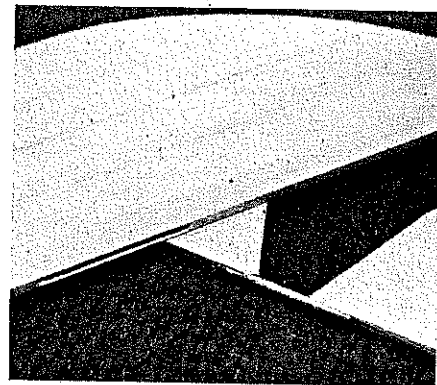
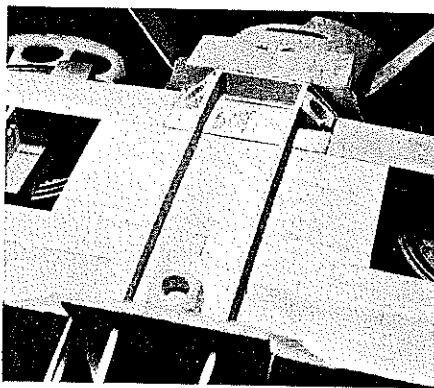
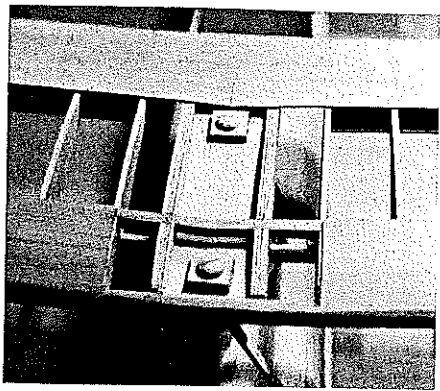
Glue ply piece MP to the top of the wing, using epoxy for a strong joint. Add the 1B ribs to the bottom wing, then glue the 1/8-in. ply mounting plates to the ribs using liberal

amounts of epoxy. Glue the 1/16 ply aileron bellcrank mounts to the rib cutouts on the four #2 ribs. Install the 1/16-in. music wire pushrods, leaving some excess at the center section for the servo hookup. Glue the ply plate at the bottom trailing edge of the lower wing and the top center section sheeting. Set the wings aside for the time being.

Fuselage. The sides are straight lines except for the lower wing recesses. Unless you have 6-in. sheet balsa available, it will be necessary to edge-glue two 3-in. sheets for the sides. Draw the thrust line on the wood, then lay out the sides very accurately as this will be the basis for setting up the wings and stabilizer. Doublers are cut from 1/8-in. Lite Ply and glued to the sides. I did the laminating on the prototype with contact cement and then sealed the edges with



Left: Extra air and drain hole sanded into the bottom block at the front edge of the firewall. Holes and blind nuts are installed in the landing gear plate. Note rounded shape of the bottom block at the landing gear plate. Center: Plywood keel on the cabane struts has been added to the fuselage. Fairing strips have been glued on along with two 1/4-in. balsa pieces on each side (awaiting shaping and final sanding). Right: Interplane struts of 1/8-in. Lite Ply with double ply ends and the horns already screwed on. Balsa fairings are added later, after the wings are properly rigged.



Left: Top wing bolted to the cabanes. Heads of the nylon bolts have been raised so they will be flush with the top sheeting when the wing is finished. Center: Bottom of the fuselage is being finished. Balsa block fairings around the nylon wing bolts and also the landing gear fairing block await final shaping. Right: Elevator connector tie bar keeps the elevator from twisting out of shape under flight stresses.

CyA. Glue the $\frac{1}{8}$ x $\frac{1}{4}$ -in. longerons to the sides and a piece of $\frac{1}{16}$ x $\frac{1}{8}$ -in. balsa at the tail post. Sand the longerons to a taper at the tail.

Pin the sides down at F4 over the top view. Install F4 into the recesses in the doubler, and glue in place. Draw the sides together at the tail, and glue. Pin the fuselage down from F4 to the tail. If you plan to use the engine mount setup as shown on the plans, lay out the bolt holes on F2 at this time, and install the bolts. Solder the wire across the slots, and coat the heads liberally with epoxy. Glue F3 and F2 in place. Glue FT2 and FT3 in place, and add the $\frac{1}{4}$ -in.-sq. braces.

Glue the stringers to the turtledeck formers, then glue the $\frac{3}{8}$ sheet to the turtledeck. Sand the top sides of the turtledeck square, and glue $\frac{1}{4}$ -in. sheet to this. Glue the $\frac{1}{8}$ -in.-sheet cockpit floor in place.

Bend the cabane struts out of coat hanger wire; sand the finish from the wire where the solder joints will be. Cut the sheet metal flange, and solder it to the struts using a high-tensile solder such as Sta-Brite to secure it. Drill holes in the flange for securing the maple blocks with sheet metal screws as shown on the cabane detail. The blocks should be flush with the top of the flange and secured with only one screw at this time.

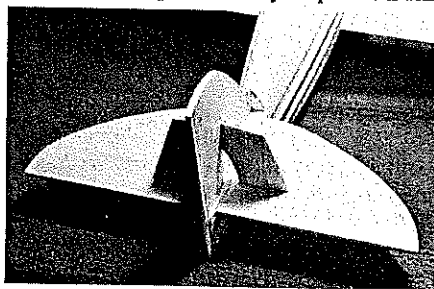
Mark the location of the cabanes on the fuselage sides, and block up the fuselage until the top of the sides is perfectly level fore, aft, and sideways. Temporarily glue some ply pieces across the top of the fuselage just aft of the cabane locations. Mark off and draw centerlines fore and aft

on the ply.

Draw centerlines on the maple blocks, and slip the cabanes into place. Drill $\frac{1}{16}$ -in. holes on each side of the strut for the wire ties as shown on the fuselage drawing. Use copper wire, and twist the wire ties tight until the struts are firmly secured. Using a 90° triangle, line up the centerlines on the blocks with the lines on the temporary ply plates. Do not rush this procedure, as it determines the accuracy of the wing setup.

Place a level on top of the maple blocks, and get both cabanes level with the fuselage top. When adjusted, solder the struts at the wire ties. Epoxy the ply braces to the struts and doublers; refer to the pictures of the cabanes for help here. Bend the wire cabane braces, and solder them to the struts.

Glue the fuel tank floor in place, and install the fuel and smoker tanks. Add the bottom triangles, ply landing gear plate, and the lower wing mounting blocks. Glue the $\frac{1}{8}$ x $\frac{1}{4}$ -in. truss braces in place behind F4. Place the lower wing in the recesses, line it up, and pin securely in place. Drill



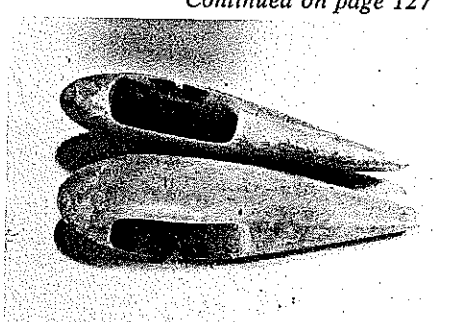
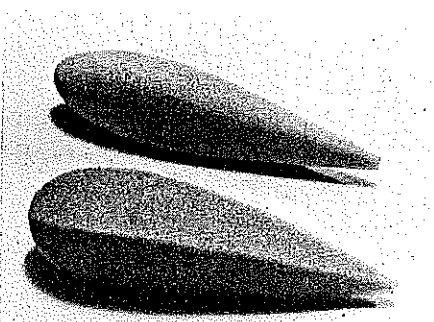
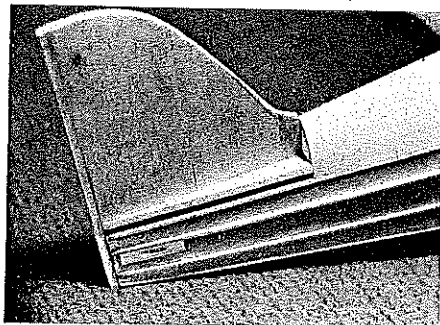
Vertical fin being attached to the fuselage with the aid of 90° balsa triangles. They are saved and reused when the stab is glued on.

holes and tap the maple blocks for $\frac{1}{4}$ -in. nylon bolts. Glue FF1 in place, cut $\frac{1}{4}$ -in. side pieces to shape, and glue in place. To ease installation, the top $\frac{1}{4}$ -in. sheeting is made in two pieces. Cut relief slots in each piece at the cabane locations as shown in the picture, and install the sheet. Glue the bottom $\frac{1}{4}$ -in. block in place. Mark centerlines on top and bottom at the front of the fuselage and another centerline on one of the F1 formers. Line up this mark with the fuselage marks, and glue in place.

Tape some poly sheet across the left half of F1 to keep from gluing the two F1s together on this half. Glue the second F1 to the right half of the F1 that is glued to the fuselage. Rough-cut the balsa nose block, and glue it into place. Glue formers C1 in place as well as the $\frac{1}{16}$ x $\frac{1}{8}$ -in. balsa cowl edge strips. Cut out the fuselage sides inside the cowl outline as shown in the pictures. Coat the inside of the $\frac{1}{4}$ ply cowl pieces with slow-dry epoxy, and pin in place over F1, C1, and the balsa edge strips. When dry, coat the outside with slow-dry epoxy, and install the second layer of the cowl.

Spend some extra time sanding and shaping the front end of the fuselage, using the plans and pictures as a reference. Glue the $\frac{1}{4}$ -in. fairing strip in place on the fuselage side behind the cowl and the $\frac{1}{8}$ x $\frac{1}{4}$ -in. side stringers. Take particular note of how the fairing piece is sanded in the picture. Cut the cowl away from the fuselage, but *do not* cut through the front F1. Install ply hold-down tabs and dowels in the cowl. Drill through the dowels and tabs, and install blind nuts on the tabs. Cover the

Continued on page 127



Left: The stabilizer is removed after the fin is glued. It will be reinserted and glued after the fuselage has been covered. Balsa $\frac{1}{8}$ -in. sheet has been added at the exit of the rudder drive cable, and side stringers have been sanded to a taper at the rear of the fuselage. Center: Foam blanks for the wheel pants. The one in front has been roughly cut while the finished one behind awaits the fiberglass/epoxy treatment. It takes about 20 minutes to get a blank ready for fiberglassing. Right: Finished wheel pants needing only an application of paint. The foam has been gouged out, and a plywood reinforcement flange has been epoxied to the inside of each wheel pant.

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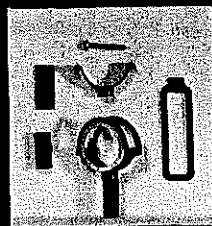


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Safety/Preston

Continued from page 22

As I write this column (May 1), I am listening to a report on the radio of the Soviet nuclear reactor disaster at Chernobyl, just 60 miles north of Kiev which I visited with the U.S. CL Scale Team in 1982. That's a disaster several magnitudes greater than anything I can visualize happening in the world of model airplanes. However, the purpose of this column is to alert you to hazards in your hobby. So, as usual, I hope you have a safe month.

John Preston, c/o Model Aviation, 1810 Samuel Morse Dr., Reston, VA 22090.

Sorta Pitts/Shepherd

Continued from page 32

bolts and tank outlets with bits of fuel tubing to protect them while epoxying the inside of the engine compartment.

Take your time with this next series of steps, as they are very critical in determining how well the model will fly. Bolt the bottom wing in place, and block up the fuselage until it's level again. Set the top wing on the cabanes; using a 90° triangle as shown in the pictures, make sure the top wing is square with the bottom wing; then drill and tap the front cabane block. Screw the top wing on snugly, then check again with the triangle to make sure it's square with the bottom wing. Drill and tap the rear hole.

Rock the top wing until the distance between #2 ribs at the interplane strut location is equal. Cut the interplane strut core the length of this distance, and add the double pieces of ply to the ends. Screw the horns in place as the picture shows, and slot the ribs to accept the horn flanges. CyA-glu the horns to the ribs, unscrew the interplane struts carefully, and unscrew the 1/4-in. mounting bolts.

Drill a pilot hole for each of the remaining sheet metal screws that hold the maple blocks, and install the screws. Back off both screws on each block, smear epoxy between the block and flange, and screw them back down. Wipe any excess epoxy off the top of the block. Glue the 1/8-in. cabane keel in the center of the maple blocks, then glue

the 1/4-in. side pieces to this and sand the cabane fairing to shape.

Turn the model over, and install the landing gear and fairing block. Glue formers WF1 and WF2 to the bottom wing. Cut the two 1/8-in. stringers, and glue them to the wing. Install the bolt fairing blocks (WF2) behind the wing, and the 1/8-in. stringers aft of the wing. Shape the LG fairing block to conform to WF1 and the forward bottom block.

Pin the stab in place on the fuselage, lining it up with the bottom wing. Sand the stab saddle, if necessary, to get it level with the wing. Place FB on top of the stab; pin it in position and glue to former FT3. Do not glue to stab. Cut two 90° angles from balsa sheet, and place the fin in slots FB and FT3. Pin the angles to the stab and fin, and glue the tail post of the fin to the fuselage and the fin to FB and FT3. Remove the stab from the slot, and cover the model before mounting it permanently. Install the tail wheel assembly and cable pushrods, notching the 1/8-in. sheeting where the cables exit the fuselage.

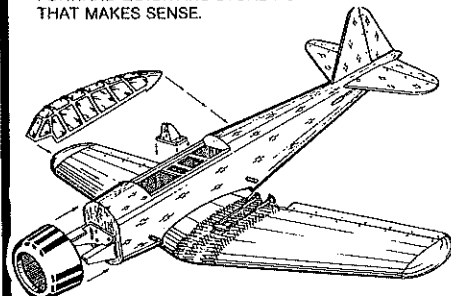
Covering/finishing. My original model was covered with Sig Koverall using dope as a finishing medium. Any of the iron-on coverings should work well if you are inclined to use that method. After covering, cut the fin tail post at the stab slot, install the stab and elevator, and glue some scrap 1/4-in. balsa back into the slot aft of the stab. The wheel pants were made using the foam and fiberglass method. This procedure has been detailed by others, so I won't add anything except to say that it is a great way to make fiberglass parts.

If you plan to use a .60-size engine, I would recommend that webbing be glued to the spars on both wings, at least out to the interplane struts, as this model can perform some pretty strenuous maneuvers. The decoration on the model is a combination of decals, decal sheet, hand painting, and dry transfer letters. Snoopy and the registration numbers were made using Sig's blank decal sheet painted with about six coats of Aero-gloss white, then cut out. The Pitts was hand painted using Pactra 'Namel gold and covered with a coat of clear urethane.

This has been a rewarding project for me,
Continued on page 130

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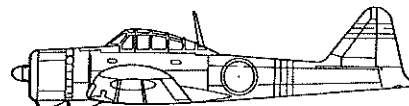
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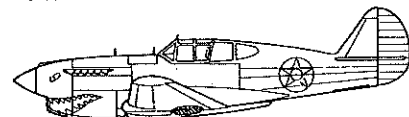
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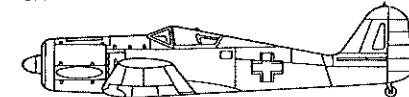
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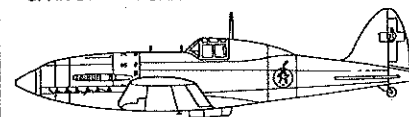
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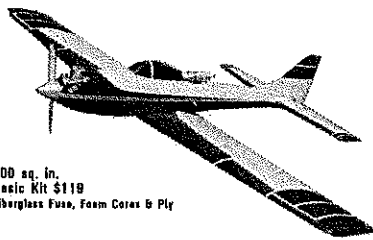
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Sorta Pitts/Shepherd

Continued from page 127

especially when the model gets in the air and the smoker is really putting out. All was not roses at first, though, as it took me quite a few flights to get it trimmed out. Every model will be a little different, so keep in mind that the arrangement shown is only a starting point for getting the model adjusted to fly the way you want it. If you have built and flown only monoplanes in the past, remember that this is a different ball game; it won't handle the same as a monoplane. Have fun.

Plane Talk/Winter

Continued from page 38

(like many Rubber Scale jobs).

I procrastinated in doing a redesign which would have such dihedral, a nicely-tapered wing, still a tail-dragger (almost a spitting image of Hartsfield's ship, but with a romantic open cockpit). Hartsfield's plane is the answer for anyone who wants such an aircraft. However, the modest dihedral suggests it is for four-channel controls and grand for a sport airplane.

There are plans! *MAN* published it. Specs reported by John: span, 6 ft.; area, 600 sq. in.; weight, 4 lb.; power, O.S. .20FS four-stroke; prop, Graupner 10-3½. The locals "believe" this engine should pull it okay. It will, and it will be beautiful.

John made a dummy cylinder for an opposed twin look, and it is hard to tell that the right-side cylinder is the working one. The two-wheel gear is simple and sturdy. The scalelike cowl removes readily.

Location of the vertical tail allows a simple, one-piece elevator. The top deck suggests a full-length straight line to the fuselage. I don't know if the canopy is stock, modified, or home-brew; but unless you want exact scale, one could do almost anything with a canopy/open cockpit motif. His orange-and-white scheme accentuates the long, graceful wings. A ship to be proud of.

Don't worry about climb at that power. My eight-footer climbed better than the six-footer. This is flying on the wing, and you will get as high as you could possibly wish. The stab is big enough to keep this bird on the step. On a warm day one supposes it could maintain cruise on a fast idle. (It won't be an 'airplane' without that dummy pilot!)

Chinook: "A warm, moist southwest wind of the

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coast from Oregon northward, or that descends the eastern faces of the Rocky Mountains." It's an appropriate name for an ultra-nice ultralight. How does one explain the peculiar lack of awareness of ultralights among so many of us? There are at least two fine magazines filled with full-color pictures and reports of projects (just like the other home-builders), of magical craft, many factory-produced as kits and even fly-away planes—things like a 50 mph lookalike Cub or Citabria. If you have images of hang gliders and grasshopper cuties, open-air stuff, wires and struts all over the place—and they are immensely popular—you've missed the boat. I've met my first enclosed ultralight model in the flesh, and I'm fascinated.

Kaluf blew by with a red-and-white pusher lovely with a canopy big enough for the family goldfish. (Also a Stolp Starlet; I buy the locals' word that there should be a law against anyone who builds like this!) It spans 78 in., has 914 squares for .40 two- and four-strokes (his has an O.S. four-stroke), and four channels. It's from a Scale kit of a Canadian ultralight imported from Germany, which means exquisite engineering that requires patient assembly of ingeniously-fitted parts that are cut with what seems like micrometer exactness. Believe me, I don't give a tinker's damn about commercial plugs. This is unvarnished reporting. European plywood can be different, and they use whatever woods best suit their purpose, such as limewood. Plastics are different, and their strange-looking/smelling glues stick to absolutely anything. Enough. The photos deserve scrutiny. Incidentally, Bill Kaluf, who generally takes three months for each of his classic flying machines, says this complicated-looking thing was done in six weeks, or half the usual time. (I won't take questions but will forward letters).

Ships of legend. "I empathize fully with your peaks and valleys," starts off John Oldenkamp of San Diego, CA, "having been one of those who, growing up poor and doing my aeromodelling in a vacuum, had to wait until my 40th year to witness True Flight (i.e., Loss of Airplane Through Thermal Activity). The acronym is LOATTA! I have nothing against RC. I just have not yet 'graduated' to finger control. But I do have an Airtronics Monarch on the boards.

"Project tonight," John warms up, "is tussing a 1937 Lanzo Combo Stick/Cabin job—far too much time in drawing it up from the Zaic three-view, bending the hoops, all those ribs and teeny spars. The dog got up on the bench after a housefly and smushed the whole tail. Rebuilt and recovered it. My first red airplane! Fourteen pieces of paper on the wings. It is a beaut. Two gigantic hand-carved freewheeling props. They