

Taylorcraft 593



Above: Our author poses with his standard version of the Taylorcraft. This airplane is in its element on a grass strip reminiscent of the private airports of the 1930s and 40s. Big Picture: The clipped-wing model sits ready to go on the tarmac at Victoria Regional Airport.

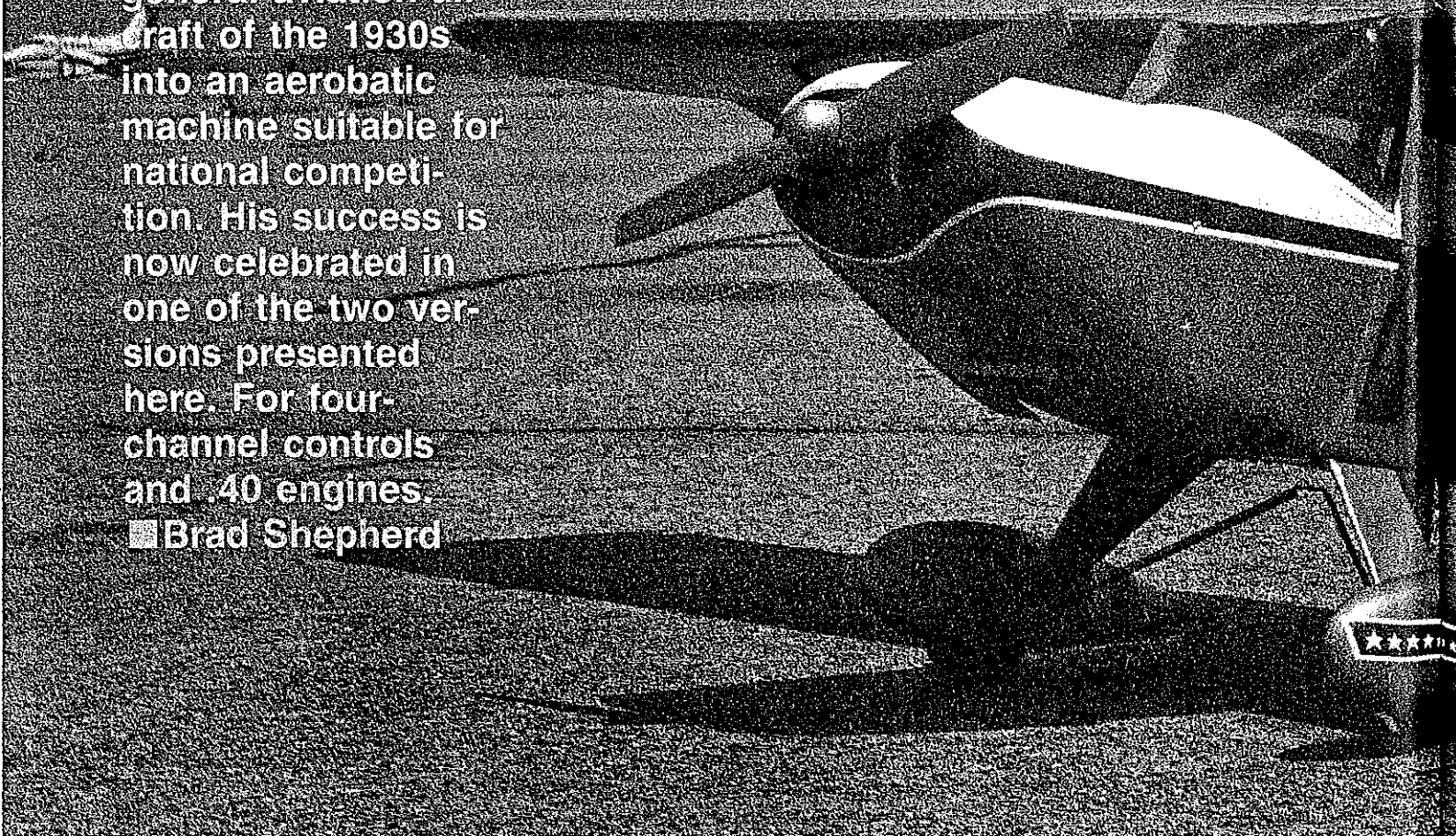
It was one man's dream to turn this general aviation aircraft of the 1930s into an aerobatic machine suitable for national competition. His success is now celebrated in one of the two versions presented here. For four-channel controls and .40 engines. ■Brad Shepherd

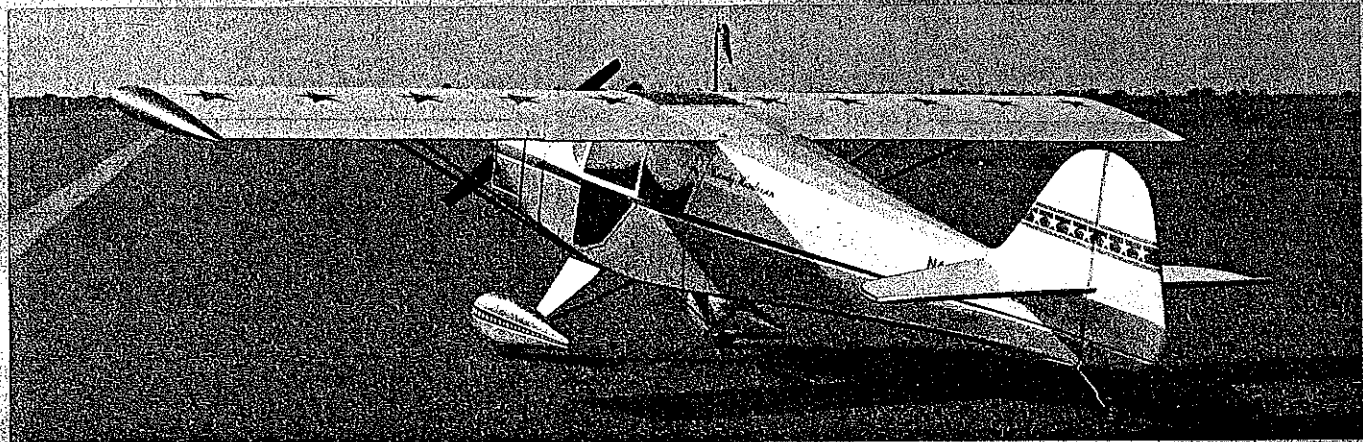
ONE LOOK at the in-flight picture in *Sport Aviation*, the Experimental Aircraft Association (EAA) magazine, and I was hooked. The subject was a clipped-wing Taylorcraft which had won all the prizes flying Intermediate Class aerobics in international aerobics competition at Bondouville Base. Wil Randy Henderson was the owner and pilot. The longer I gazed at the picture, daydreaming, the surer and more persistent became my urge to copy it. Jotting down some numbers, I decided that a 1/6-scale model would be just about the right fit for my pocketbook, drafting table, and engine.

Building the clipped-wing Taylorcraft turned out to be the most

satisfying project of my modeling career that spans some 50 years. In part, that's because the enterprise took on a whole new character when it acquired a second branch. Early on in my research, I discovered a standard Taylorcraft like the one that Randy Henderson had modified, and before long I'd decided to base a model on that original version in addition to duplicating Randy's later variant. My project had become a dual one.

But I'm getting ahead of myself. Even the most rewarding projects can take a while to build up steam, and the happy inspiration to build both Taylorcrafts didn't strike overnight. As I began my research, perusing the





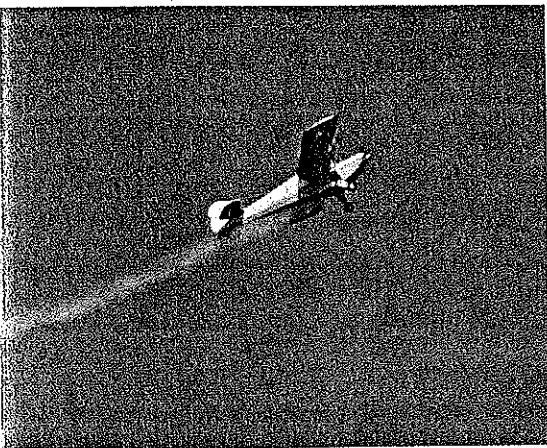
The 1/4 scale version of Randy Hemenway's Taylorcraft biplane on the ramp at Jackson County Airport in Edna, TX.

stock of pictures and paraphernalia I'd collected over the years, nothing resembling a Taylorcraft turned up. What did come to light was the interesting information that a 1941 T-Craft was hangared at Jackson County Airport in Edna, TX, which is about 25 miles from my home in Victoria. On a chilly winter day, I sketched out a three-view, slid the tape measure into my jeans, and headed east to Edna.

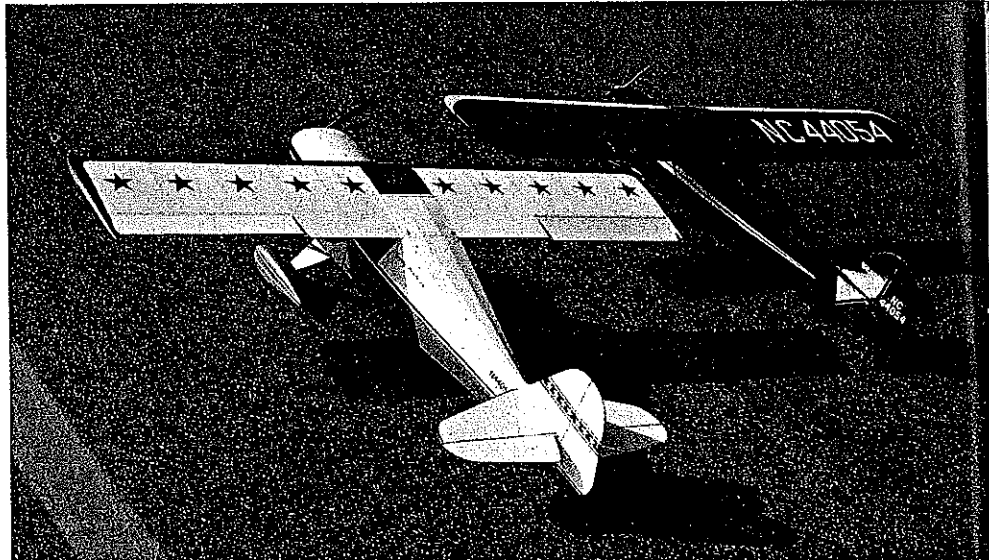
Airport General Manager Bobby Fielding was very helpful and accommodating as he answered questions about his Taylorcraft. While the airplane was still in the hangar, I took some black-and-white photographs showing various angles that aren't readily captured on paper. The next few hours were spent

measuring the plane from spinner to tail wheel. This equipped me with the information I needed to design a model of the standard T-Craft, but not of Randy's much-trophied mutation. For that, I needed data on how much had been clipped off the wing, and the aileron size, engine size, etc. of the

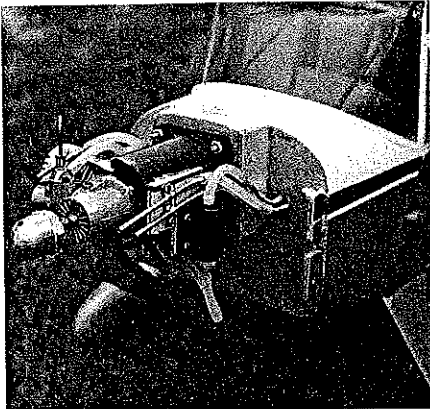




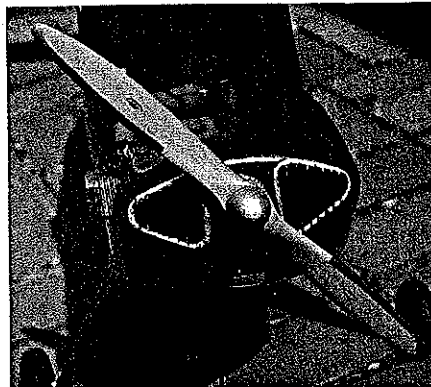
The clipped-wing model enters a loop with the smoker laying out a nice, dense stream.



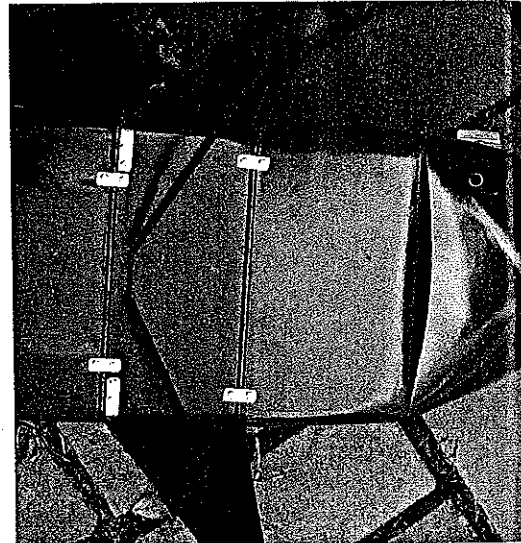
Lined up side-by-side at the Jackson County Airport, it's easy to spot the modifications Randy Henderson made in Taylorcraft's original design. Both are great fliers in their own right.



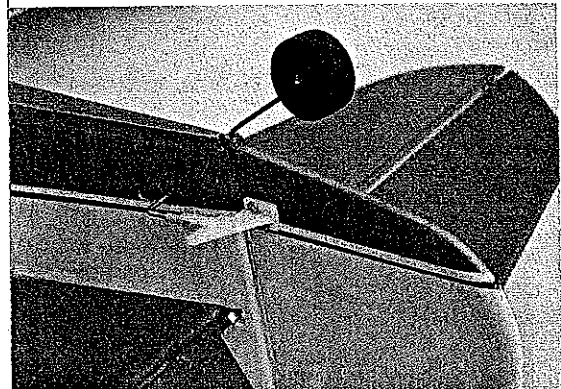
Originally the Taylorcraft was powered by a Como .29 as shown here, but performance was marginal. Switching to a K&B .40 (which used the same mount) fixed that, though.



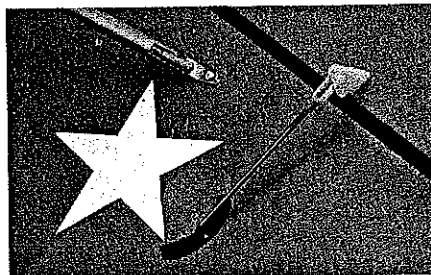
The "Sensenich" prop was made by reworking a Top Flite Power Prop. The copper leading edge was painted on, and the decals are from an Auto World sheet. The outline of the grille is made from poster board, and the vertical bars are straight pins with the heads clipped off. Sig Kwik Set fuel-proofs the poster board, and then it's painted silver.



Both models use the same gear and strut attachment. Note the air exit slot at the rear of the fiberglass cowl. The text contains the address for ordering both ready-made cowls.



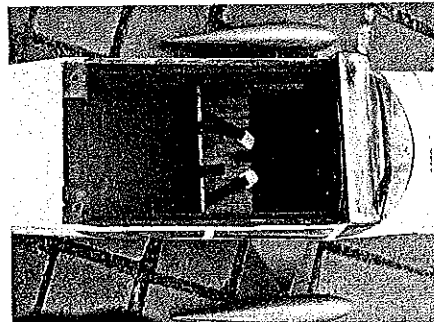
Details of the rudder control linkage and the tail wheel. Although they're not scale, the new "Lite" wheels work well here on the tail.



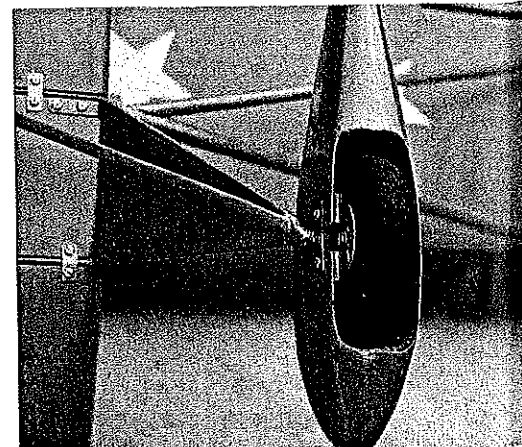
The alleron horn is made from a standard control horn that has had the flange cut off. Bury it 1/4 in. in the balsa and glue with CyA.



The NC numbers were cut from a Sig blank decal sheet that had been painted cream. The Taylorcraft logo was made by first painting a piece of blank decal blue, then drawing the letters and lines on top of that with a #3 drafting pen filled with thinned cream paint.

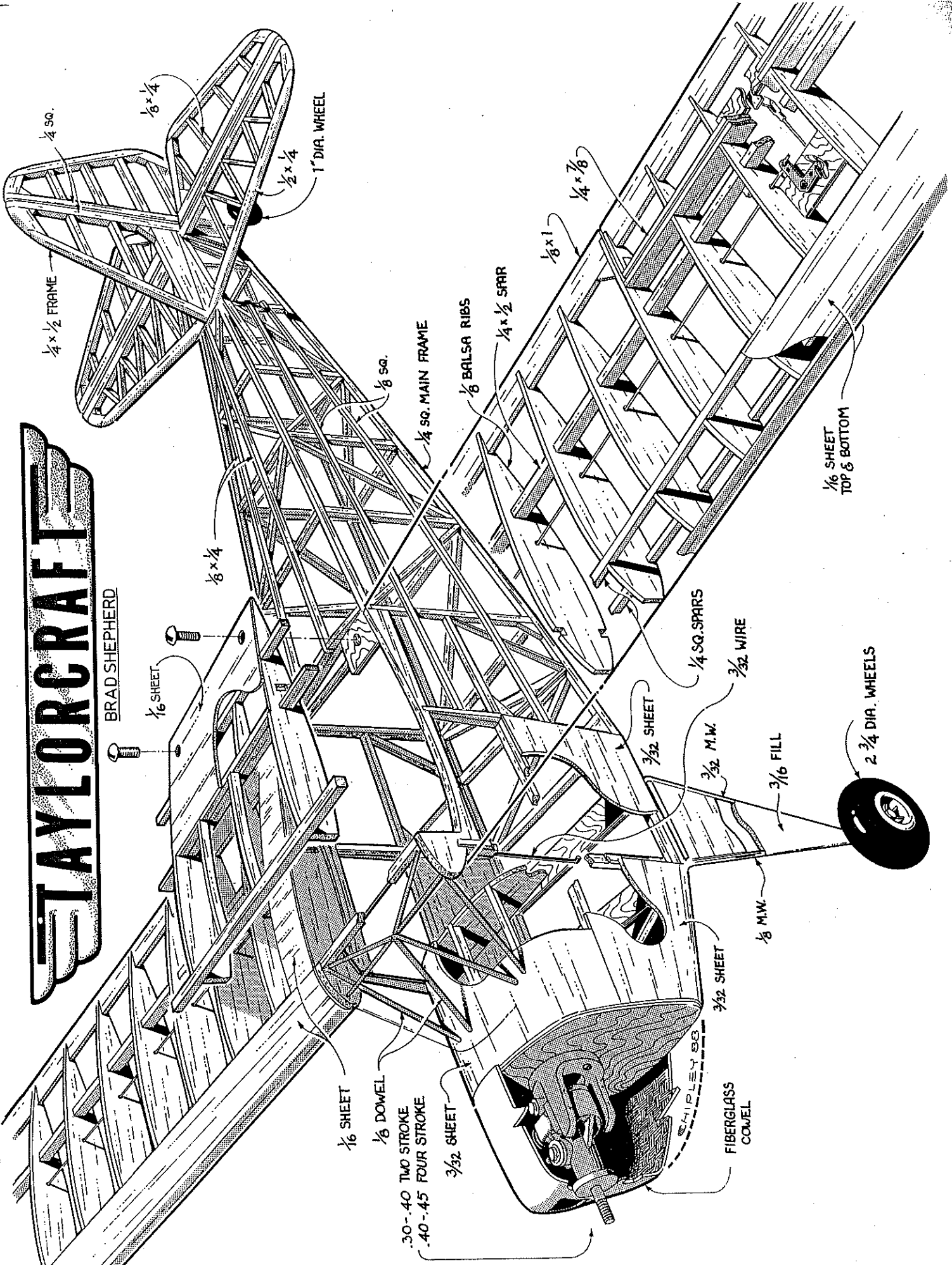


Cockpit detailing includes all the harness equipment needed to keep the pilot in one place while doing aerobatics. The seat also covers up the radio equipment very nicely.



Solder a brass strip to a 1/4-in. wheel collar. Two screws through the brass strip and into ply plates secure the pant to the gear strut.

TAYLORCRAFT



BRAD SHEPHERD

1/16 SHEET

1/8 x 1/4

1/8 x 1/4

1/4 sq.

1/16 SHEET

1/8 DOWEL

.30-.40 TWO STROKE
.40-.45 FOUR STROKE

3/32 SHEET

1/8 sq.

1/4 sq. MAIN FRAME

1/8 Balsa Ribs

1/4 x 1/2 SPAR

1/8 x 1

1/4 x 7/8

1/4 sq. SPARS

3/32 WIRE

3/32 SHEET

3/32 M.W.

3/16 FILL

3/32 SHEET

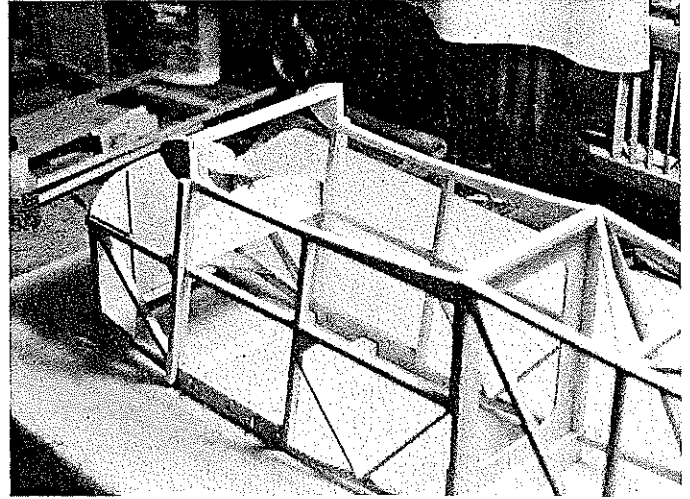
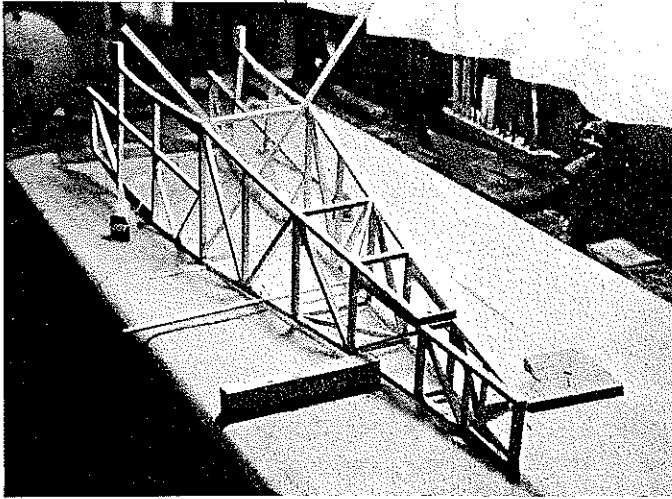
1/8 M.W.

2 3/4 DIA. WHEELS

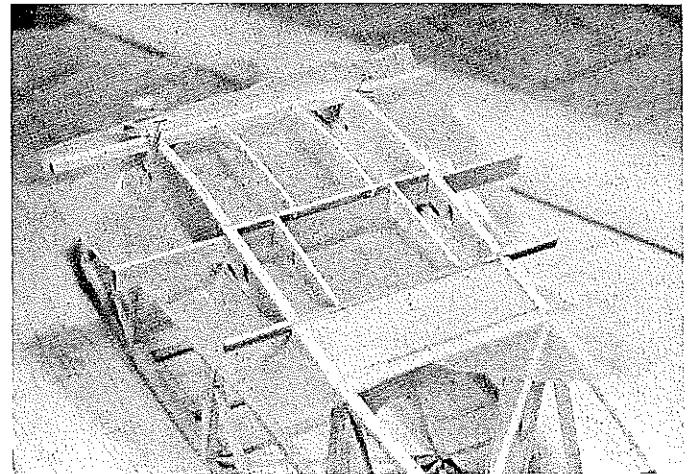
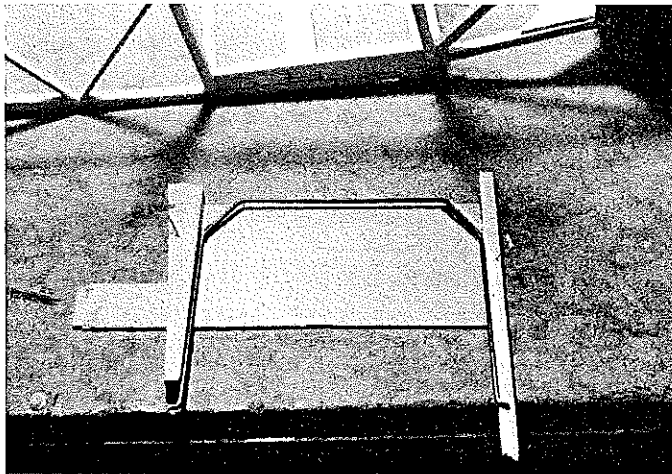
1/16 SHEET
TOP & BOTTOM

CHIPLEY 88

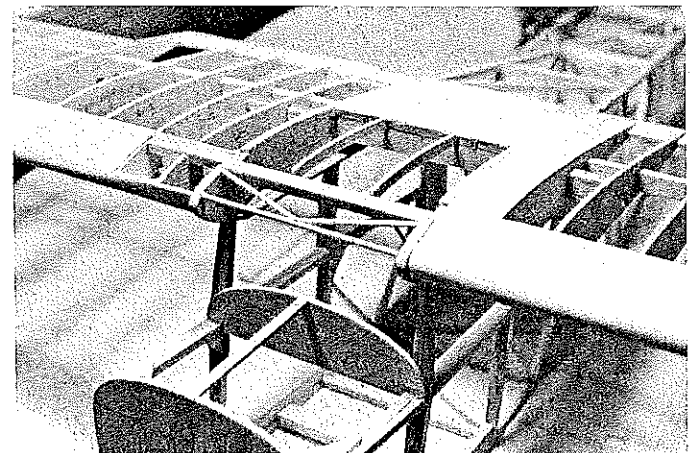
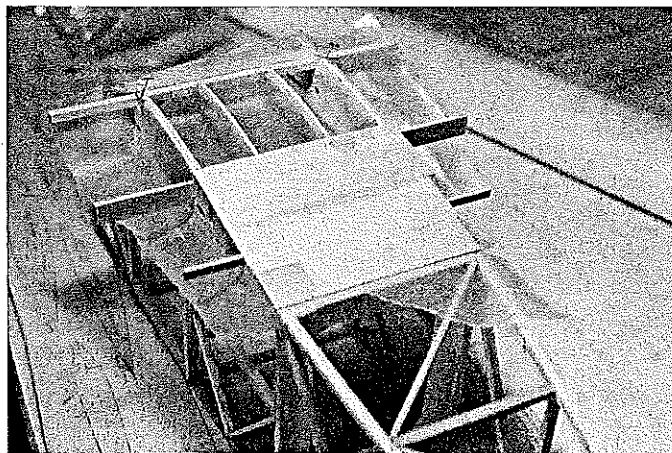
FIBERGLASS
COVER



Left: Fuselage construction is of the traditional "stick and tissue" type. Blocks pinned to the bench and temporary braces hold the fuselage square while the cross members are glued in. Right: Front end details show firewall doubler and diagonal braces for the LGP pieces.



Left: Make a jig from scrap balsa to check the shape and fit of the $\frac{3}{32}$ wire used to reinforce the cabin frame. Note the slight up-bend in the wire. Right: The wing center section is built directly over the fuselage framework. Use wax paper to make sure the assemblies stay separated.



Left: The center section is sheeted with $\frac{1}{16}$ balsa, and $\frac{1}{16}$ ply reinforcements are installed at the hold-down points. Right: The center section/fuselage fit is one of the most critical areas of this model. Before completing the wing, trial fit it to the fuselage and correct any mismatches.

off-the-shelf, hangar-stock model along with the clipped-wing contest winner that had originally attracted me.

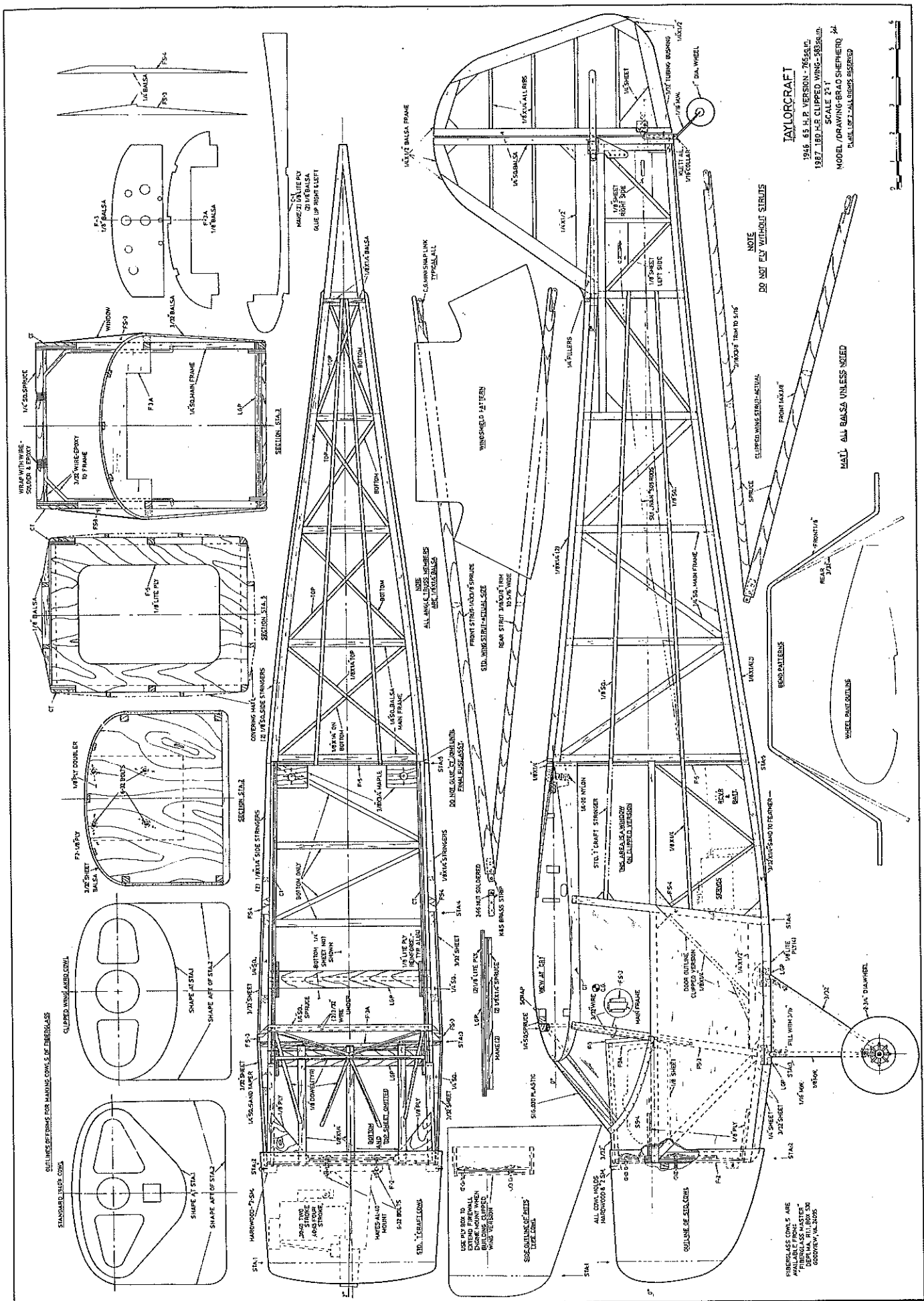
I made an initial rough drawing and built a fuselage for the hangar-stock model, solving center section problems as I went along. About the time I was finishing up a second version of the fuselage, I received some pictures and dimensions from Randy. The pho-

tos of his aircraft helped a great deal in finishing up the model under way, while the dimensions he sent enabled me to proceed with the clipped-wing version.

After building the $\frac{1}{8}$ -scale model of Randy's airplane, I took it with me on a visit to Frisco, TX to meet the man behind the metamorphosis. We stayed with a son

and his family who make their home in Dallas, Frisco being just a few miles north of that city. The four hours I spent with Randy were some of the most enjoyable of my life.

Originally a Mississippi farm boy whose fascination with airplanes began early in life, Randy is the sort of gracious, engaging individual who makes you feel right at home in his company. During our visit, I



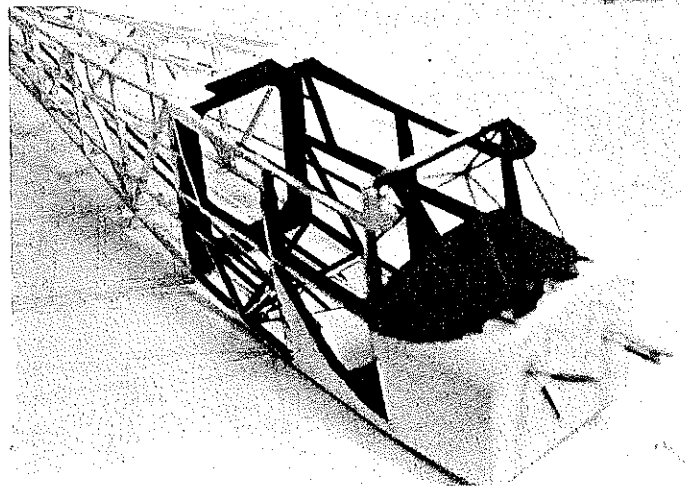
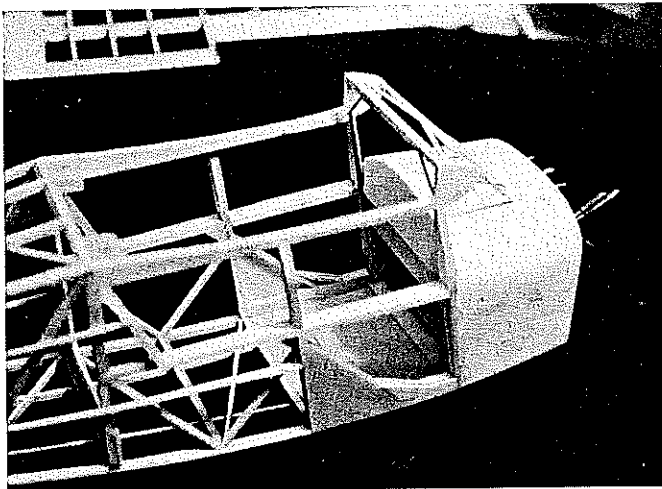
TAYLORCRAFT
 1946 65 H.P. VERSION - 7658410
 1987 180 H.P. CLIPPED WING - 8383010
 SCALE 2:1
 MODEL/DRAWING BRAD SHEPHERD 24
 LABELS BY GAIL BERRY-BERGER

NOTE
 DO NOT FLY WITHOUT STRUTS

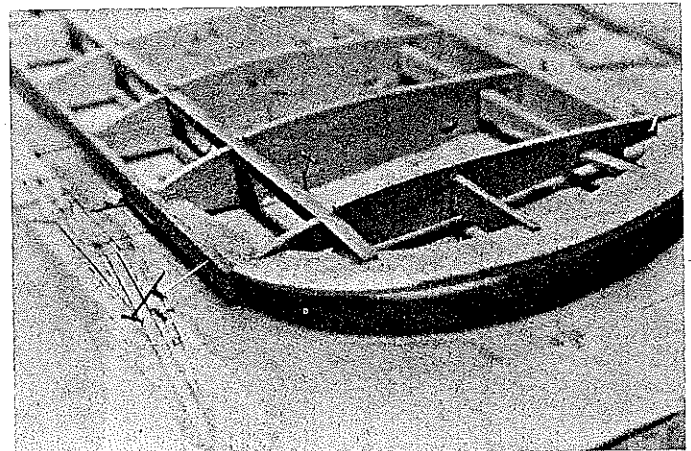
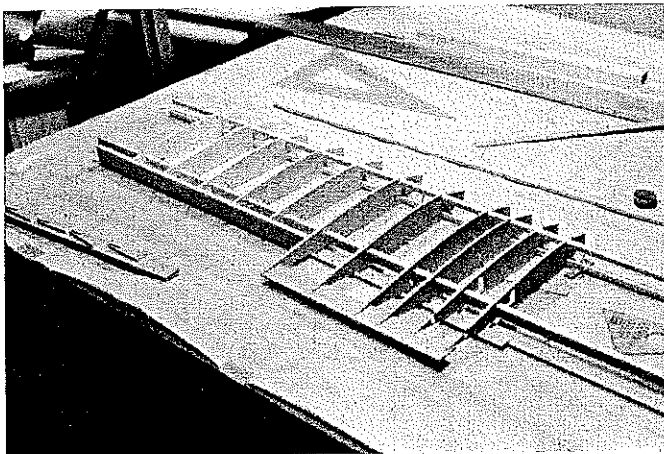
MAK. ALL Balsa UNLESS NOTED

WHEREAS THESE ARE
 AVAILABLE FROM
 TAYLORCRAFT
 GARDEN CITY, N.Y. 11735





Left: The fuselage for the clipped-wing version (shown here) differs from the stock Taylorcraft in that it has an outline for the door frame. Note the maple hold-down blocks for the wing. Right: Paint the interior of the cockpit flat black to duplicate the interior of the full-size plane.



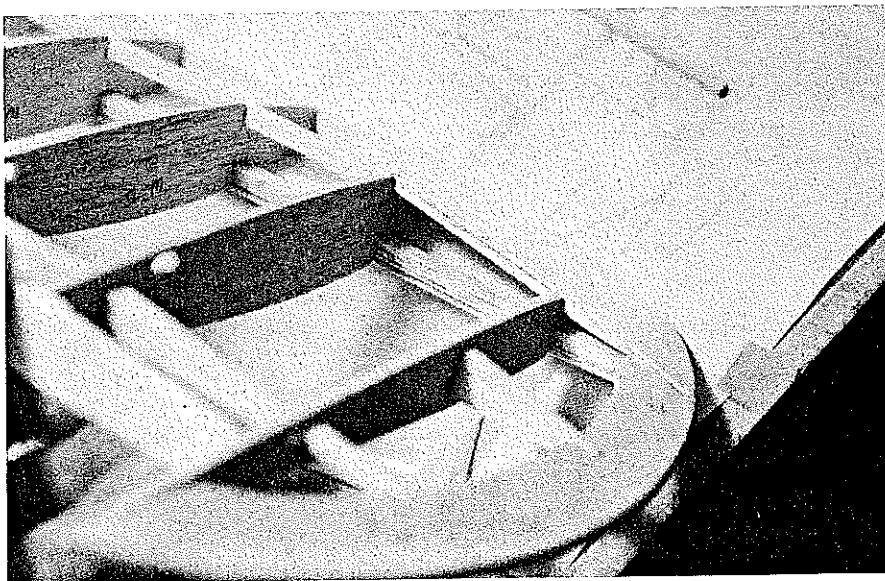
Left: Wing panel for the clipped-wing version. Note the $\frac{3}{16}$ -sq. jig and the $\frac{1}{16}$ -in. scrap used as shims under the bottom spar. Ailerons and spar are still to come. Right: Wing tip for the standard wing. Remember to sand it down to allow for the $\frac{1}{16}$ -in. leading edge that will be added later.

took some photographs of my model with Randy's prototype, gathered information of the original through the logbooks, and learned more about the winnings that this clever pilot's originality and competence had earned him. Just as interesting was listening to Randy delve back into his past, as

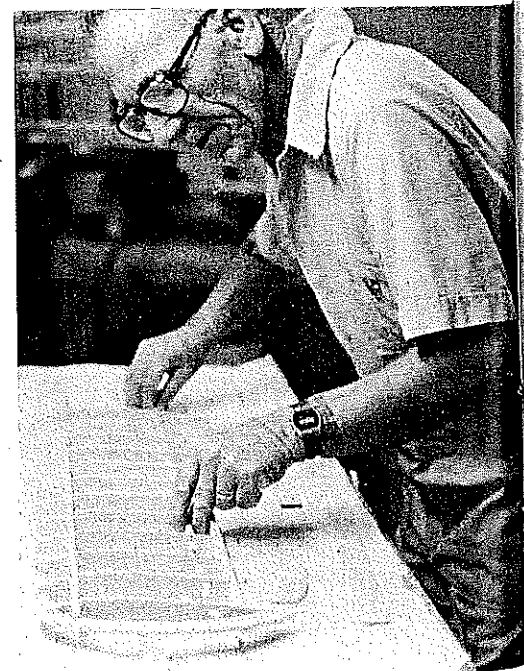
he gave a vivid account of how he'd progressed from young pilot to accomplished aerobatics enthusiast. It's a pretty remarkable journey.

Randy worked his way through two years of college, then joined the Air Force and served as a medic. He earned his pilot's li-

cense while stationed in England. After discharge, he returned to Mississippi and obtained his commercial rating, landing a job



Bottom view of the standard wing tip. Note the taper in the aileron spar between the last two ribs and how the $\frac{1}{16}$ -in. sheeting is made flush with the outer radius of the wing tip.

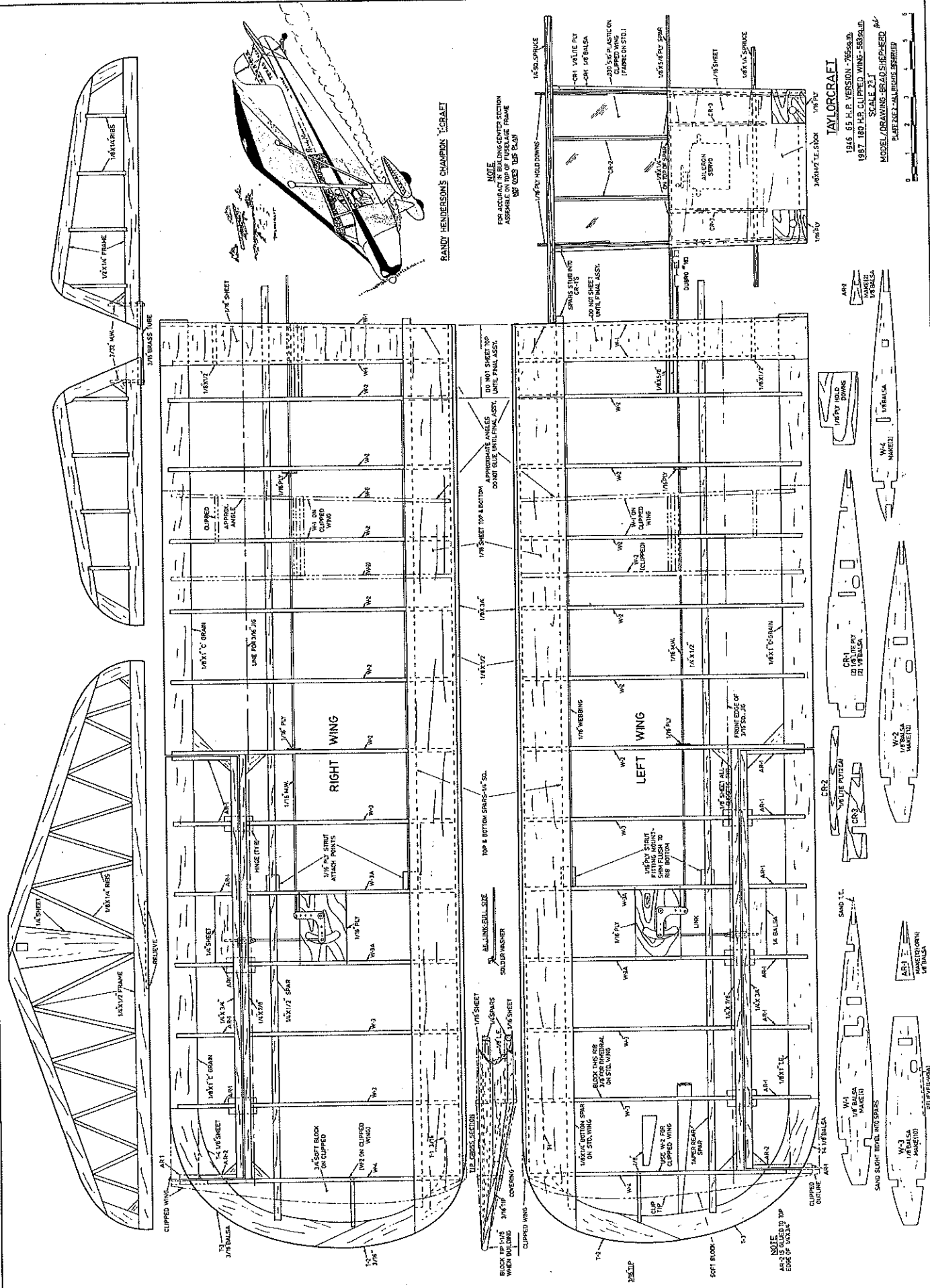


Brad slides the rear spar into place. Note the shims under the tip to set the proper angle.

RANDY HENDERSON'S CHAMPION COBRAET

TAYLORCRAFT

1946 65 H.P. VERSION - 765840.
1987 180 H.P. CLIPPED WING - 588340.
SCALE 3/16" = 1"
MODEL/DRAWING BRAD SHERBERG, JR.
DATE: FEBRUARY 1988/REVISED



as first officer on DC-3 aircraft with a cargo company flying out of Memphis, TN. Starting with just 380 hours of flying time, in three years he'd accumulated over 3,000 hours flying day and night in all kinds of weather—and surviving 13 engine failures.

In 1978, Randy saw the fulfillment of a longtime ambition when his former commercial flight instructor, a Southwest Airlines captain, helped him acquire a B-737 rating at Piedmont Airlines. He later joined Southwest himself, and is now, at 38 years young, a captain flying out of Love Field in Dallas.

While pursuing his career dream, Randy was also bitten by the aerobatics bug after watching Charlie Hilliard and Mary Gaffney win the 1972 International Aerobatics Championships (IAC). In 1979 he initiated himself into aerobatics by doing his first roll, at 5,000 ft. with his eyes closed, in a 1947 clipped-wing Cub purchased that year. Shortly afterward, he started flying his Cub in air show work with J.D. Gauthright.

In 1980, Gauthright purchased a partially refurbished Taylorcraft NC-44054 from a gentleman in the Midwest, intending to use it for air shows. Randy subsequently bought the Taylorcraft from Gauthright, and decided to pull out all the stops in upgrading it to be competitive in IAC sanctioned con-

tests. Three years and much hard work later, a champion was unveiled and test hopped on Randy's birthday in August of 1983. It was nicknamed the T-CART. The rest, as Randy's record attests, is history.

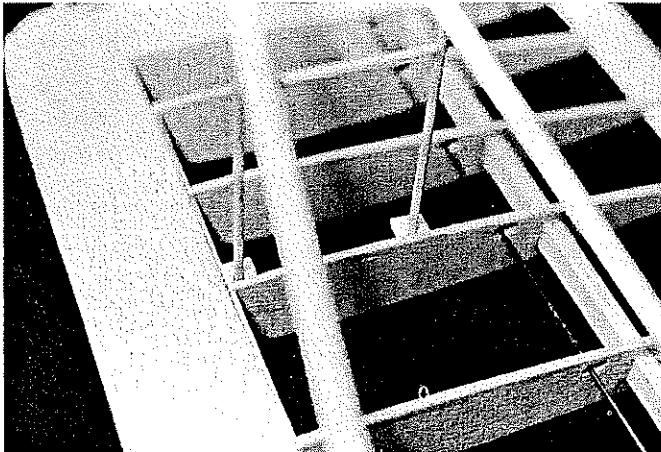
During 1984 and 1985, the T-Craft was capturing Sportsman category trophies. Randy advanced to Intermediate level contests with the goal of becoming champion in that category. He had never placed lower than second, which was his ranking at the 1985 and 1986 national events at Sherman, TX. In 1986 he became the Fond du Lac Intermediate Champion. Randy has also won the 1987 Lone Star Championships at Denton, TX, and the Houston Gulf Coast Championships at Jackson County Airport in Edna.

Currently, Randy is working on a beefed-up 260-hp midwing Laser variation suitable for Advanced category competition. Having watched this remarkable pilot do his Intermediate routine at the "Cotton Patch Aerodrome" flight strip—Randy's front yard—and seen his T-Craft take the Gulf Coast Championships, I feel qualified to play the oracle. I'll prognosticate that after that new airplane is up and flying, Randy will be World Champion one day—it's just a matter of time. Every maneuver of his routine was almost picture perfect inside the box.

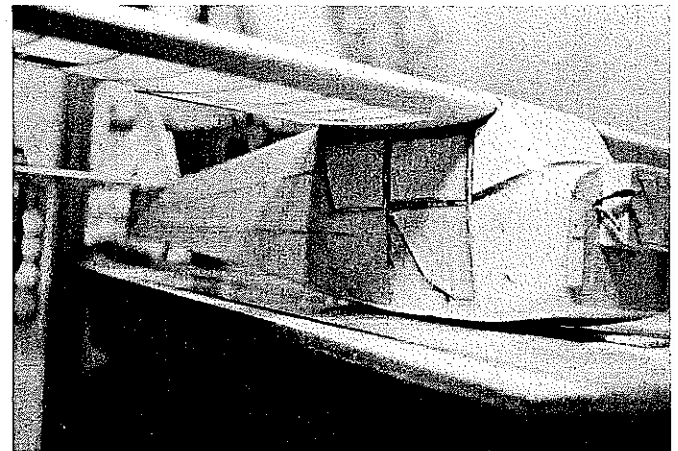
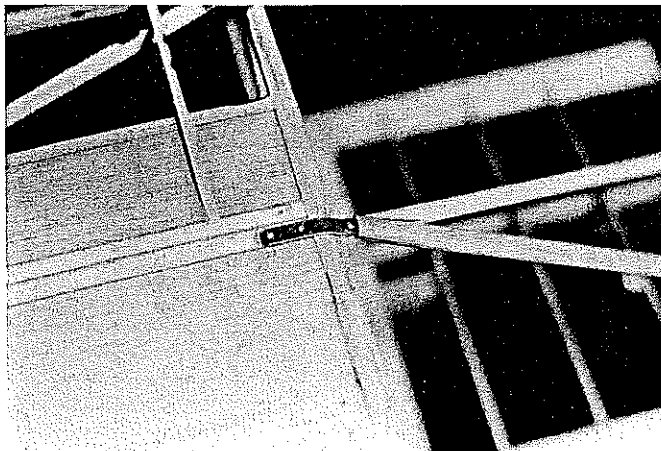
The NC-44054 was rolled out of the Taylorcraft factory at Alliance, OH on a chilly day in October 1946 for a final inspection and runup of the 65-hp Continental. According to the logbook, an airworthiness certificate was issued after a 35-minute test flight a few days later. Following its purchase by a Mr. Myron Gleiter of Cochrane, WI, a two-legged cross-country ferry flight totaling 7 hours and 40 minutes was recorded. Subsequent logbook entries show that the Taylorcraft spent most of its life around the upper central part of the country, until J.D. Gauthright purchased it 34 years after its debut.

After Randy bought the T-Craft from Gauthright, the transformation began. Randy installed wings that were clipped to 28 ft. with the tips squared off, and built balances into the ends of the ailerons. The rudder pedals were set up to allow the plane to be flown, in competition, from either side or from the middle. He installed a 180-hp Lycoming and a smoke system for air show work, Pitts-style wheel pants and cowling, and double wires on the tail feathers.

When my wife and I planned that memorable visit with Randy to gather information and to photograph the prototype with my replica, little did I dream I'd end up taking a ride in the object of my admiration. Since I



Left: The jury struts are inserted through holes in the small scraps of sheet balsa that are glued flush with the ribs. Right: Carl Goldberg mini snap links fasten the wing struts to brass strips mounted on $\frac{1}{16}$ ply plates that are flush with the ribs. Also note the aileron bellcrank.



Left: The wing strut bolts to the ply LGP. The $\frac{1}{4}$ -in. brass mounting strip has been epoxied into the strut. Right: Brad's choice for covering was Sig Koverall. Put tape over windows and windshield to protect them. Engine mount extension is required for the clipped-wing version.

was a little reluctant at first, Randy promised me just a "no surprises" ride around the pasture. But I was taken by surprise—marvelously! Folks, that was *the best* airplane ride of my life. Vibration was practically nonexistent, indicating that the T-Craft's engine and prop are in nearly perfect balance. And the 180 horses really make it perform.

Randy pushed the throttle and pulled the nose up, and everything on the ground shrank to miniature in a hurry. After leveling off and coming back on power, he said, "Fly it"—which, being in the passenger seat, I had to do with my left hand. Starting with a left turn and almost rolling it, yours truly, alias old "ham hands," quickly learned that this machine was most definitely no tractor. The airplane has been set up so perfectly that the smallest control movement commands an instant response, and I'd used too much force.

I first flew my T-Craft model from a grass strip on a ranch out in the middle of the country. The site is so fine that I've dubbed it Utopia. Powered by a Como .29 equipped with a smoke system, however, those first, disappointing flights certainly didn't match the utopian setting. The .29 engine in combination with a Master Airscrew 9 x 6 propeller provided only marginal performance, which was further hindered by the center-of-gravity being too far forward. A 10 x 4 black magnum prop proved only slightly better. Rather than chance any major damage, I decided to put the model up for the day, deferring further attempts until I could make some changes.

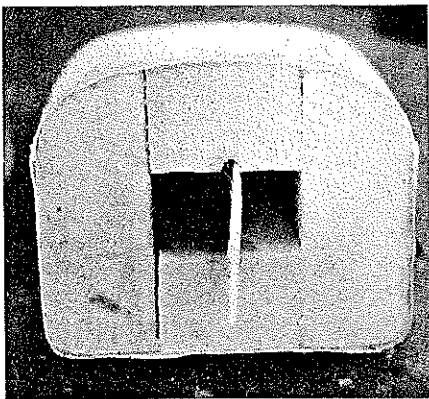
Back home, I substituted a K&B .40 engine for the .29, and moved the radio equipment as far aft as I could get it. Returning to Utopia a week later, I fired up the K&B, checked the smoker, taxied out to takeoff

position, and added power. As she sprinted off into the skies, mimicking the prototype in flight, I knew that switching to the .40 had been the right decision.

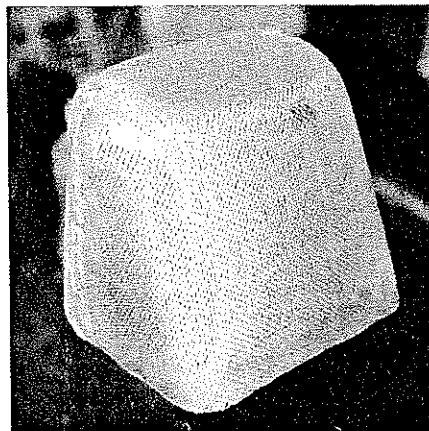
After adjusting the trim levers and noting the responses, we judged that the model could use some right thrust, less rudder, and more aileron throw. Performance improved dramatically, and flying buddy Leon Folsom had a field day with his camera. There was a whole banquet of maneuvers to get on film, all with the smoker going: snaps-on-loops, square loops, inverted loops, slow rolls and point rolls, knife-edge flight, and outside loops and snaps. While attempting to slip it on landing approach, however, Ole Dad almost made a basket case out of it. Luckily, it had enough altitude and I got it straightened out; but that one is going to take some practice!

The T-Craft had proved its mettle, and I

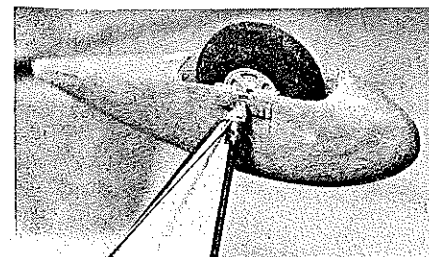
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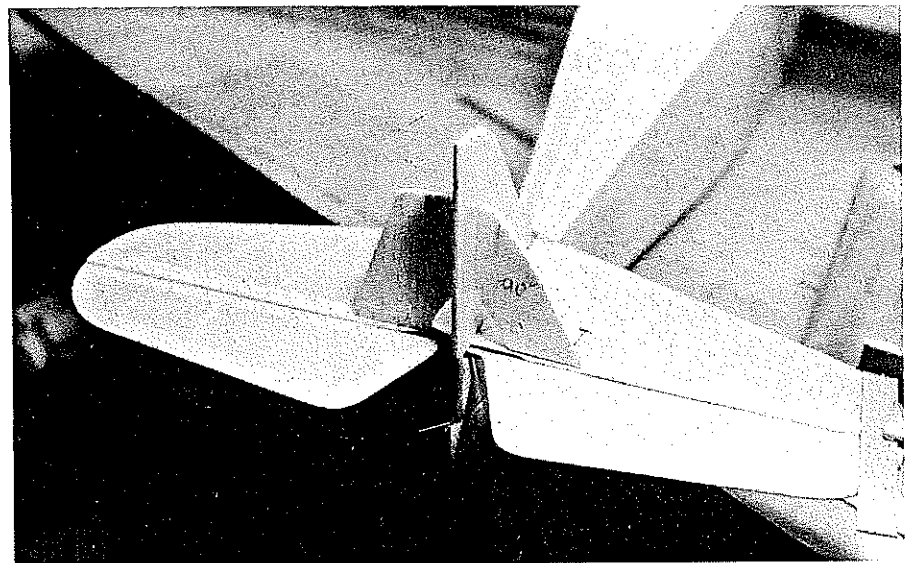
Foam blocks are used to make a one-off cowl. Sig one-hour epoxy was used instead of the traditional resin with good results.



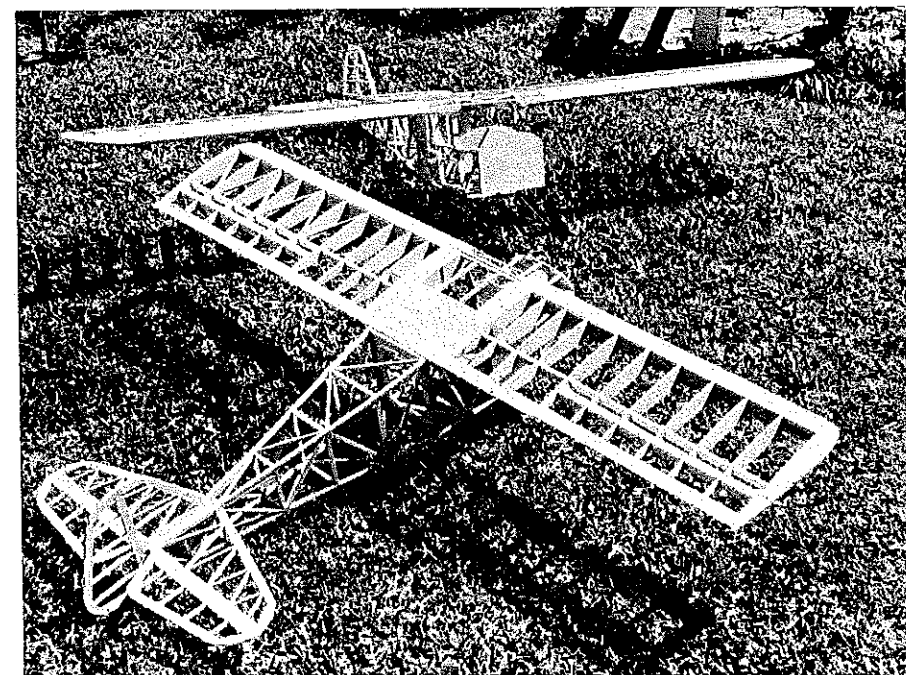
The fiberglass used was purchased from a boat builders shop. Super Jet secures it to the form until the epoxy can be brushed on.



Left: Likewise, the wheel pants are made using the same materials and techniques. Right: Using the "stick-an-tissue" method of building results in a set of "bones" that one resists covering. In the foreground is the clipped-wing version, and the stock Taylorcraft brings up the rear.



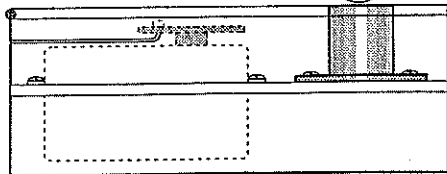
Guide blocks cut from scrap balsa hold the fin perpendicular to the stab while the glue sets.



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No Rubber Bands!

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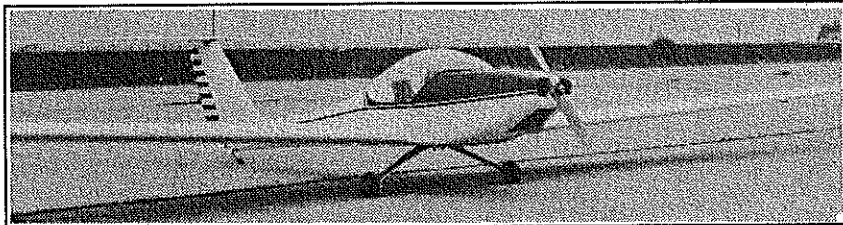
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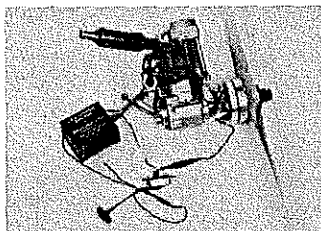
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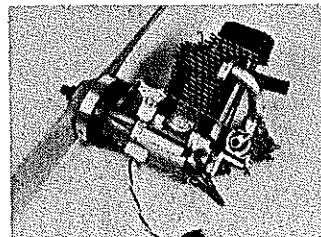
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decided to give it a rest until the Houston Gulf Coast IAC Championships which was scheduled for Labor Day weekend at Jackson County Airport in Edna. Randy was competing in this contest, and he wanted to see the model fly as well as get some pictures for an article in *Sport Aerobatics*. Since we had only one radio, it was necessary to remove the gear from the clipped-wing and install it in the standard NC 44054 T-Craft for test flying.

At about the same time, I seized an opportunity to fly the model at one of the finest flying fields in this part of the country—the Waco Hot Macs field. We were on our way to a camping trip at Lake Waco with our son Gary and his family, and of course the T-Craft was slipped right into the pickup with our other gear. I'd flown the Super Doubler II at the Hot Macs field, and knew it was a great place to get another look at the T-Craft's capabilities.

Arriving at Lake Waco camp on Friday, we took the model up to the Hot Macs field, but found the winds too strong for flight until around 7:00 that evening. We put on the wing and struts, filled the fuel tank, fired up the O.S. .40 four-stroke engine, tached the rpm, idled the engine, and started taxiing. Lo and behold, the rudder was responding backwards (I know I checked that 10 times! Ha!). As the model sat there with the engine idling, Ole Dum-Dum slid the back of the transmitter off and reversed the servo (ah, these modern-day radios!), snapped the cover back on, and taxied out on the strip. (Ever notice how model flying has a way of humbling us? We get good at making up epithets for ourselves.)

I lined the model into the wind, throttled up (sounds like a Continental 65), and floated off. The T-Craft weighs less than five pounds and has a 765-sq.-in. area. Powered by the four-stroker and using a Master Aircscrew 11 x 6 propeller, it attains a virtually scalelike speed. All maneuvers are very close to scale performance. In fact, the model was the very image of Randy's prototype gliding over the pasture—as long as Ole Dad played the rudder correctly! Rudder movement has to be coordinated to do rolls and turns successfully and keep the action on center. The model snap rolls beautifully and at scalelike speeds. This airplane is a real joy in the air!

Saturday evening was a long wait for the wind to settle, but we did get in one flight before dark. The next day we headed home with the grandchildren, who were spending a week "at Grandma's," so further sessions with the model would have to await my next fling at Utopia.

Construction. Both my hangar-stock and clipped-wing versions of the Taylorcraft use stick-and-tissue construction. For me, building them this way was a chance to relive some good memories. I also discovered that such models can be crafted lighter, stronger, and just about as quickly as the balsa sheet models I'd been building for many years.

Examining the photographs and plans will give you a grasp of the project while also helping you decide which version to build. You may even want to double your pleasure by constructing both of them, as I did.

With either version, the wing center section cannot be completed until the fuselage has been built, although construction of the wing panels may precede that of the fuselage, if desired. This is the only fixed building sequence that must be followed in this project.

In scratch-building, it's advisable to begin by cutting out a kit of parts. This gives the modeler a good "feel" for the plans, and some of the quirks or kinks of that particular project will become apparent. Since the wing is semisymmetrical, mark all of the aileron ribs for "top" location when cutting the wing ribs.

For both versions, I used Super Jet and epoxy adhesives exclusively.

Fuselage. Assemble each side over the plans. Glue together a pair of right and left cabin tops (C-T) with the balsa pieces on the outside. Lay waxed paper over the plans, and build one side of the fuselage. Again making sure a right and left C-T are glued up, place waxed paper over the first side and build the other side directly over it. Lay waxed paper over the top view; pin the sides over it at the tail post and about 2 in. in front of station No. 5.

Using 90° triangles when assembling the sides is an absolute necessity for ensuring squareness of the completed fuselage. I cut my own 90° triangles, which I use extensively in building, from scrap balsa, although some modelers find the various jigs which may be purchased to be excellent for this purpose. In any event, don't try to build the fuselage without some method to assure its accuracy.

Square up the sides, and glue on the top ¼-in. crosspiece at station No. 5. Check the tail post for squareness, and glue it in place. About halfway between station No. 5 and the tail post, pull the sides together as per the plans, bracing them with ½ x ¼-in. balsa strips treated with a shot of cyanoacrylate (CyA). Square up the fuselage at station No. 5 using your 90° triangles. Glue in additional ½ x ¼-in. strips from corner to corner to hold the sides firmly square while you glue the remaining crosspieces and diagonals in place.

Glue former F-5 in position. Proceed to glue in place the firewall, LGP pieces, F3A, and the ¼-in.-sq. spruce piece at station No. 3.

Referring to the photograph, make a simple jig for checking the wire reinforcement to be inserted at station No. 3. Once it is satisfactorily bent to fit the fuselage frame, epoxy it into place. I used Sig's Kwik Set for this with good results, as nothing has given out yet after some pretty violent flying.

Glue the ½-in. sheet pushrod exits to the rear of the fuselage as shown on the plans. Using epoxy or slow-drying CyA, glue the

Continued on page 36

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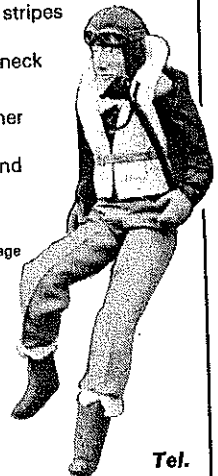
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1/8-in. ply corner gussets to the firewall.

Place waxed paper over the cabin area of the fuselage. Glue together the left and right ply-and-balsa CR-1 pieces with the balsa on the outside, and pin this accurately to the C-T cabin pieces. Glue in position the 1/4-in.-sq. spruce piece, the plywood center spar, and the rear 1/8 x 1/4-in. spruce piece. Measuring from the center section view on the plans, glue the CR-2 and CR-3 pieces in place. Glue the 1/8 x 1/4-in. balsa strips to the top of the center spar. Fit and glue the trailing edge stock in place as per the picture of the center section frame. After gluing on the top 1/16 sheeting and 1/16 ply bolt pads, remove the structure from the fuselage.

Wing. When building the wing panels, study the plans carefully to avoid any misplacement of ribs while working with the clipped-wing version of the plans interposed over the standard drawing of the wing. As noted on the plans, some of the ribs at the center section and at the tip are rearranged.

Place a 3/16-sq. balsa strip over the plans at the jig line. Shim the bottom 1/4-in. spar using scrap 1/8-in. pieces, then pin the spar to the board. Pin all the ribs in place, shimming the W-1 pieces with 1/16 scrap.

Place the 1/8 x 1-in. trailing edge in the slots, and pin the 1/4-in. aileron section spar to the rear of the W-3 ribs. Accurately position the 1/4-in. top spar, slide the 1/4 x 1/2-in. rear spar through the ribs, and go over all the joints with Super Jet adhesive or the equivalent.

For the next step, follow the appropriate procedure for the T-Craft version you're building. For the standard wing on the hangar-stock version, glue the 3/16-in. tip pieces together, block up the tip 1/8 in., and fit rib W-4 in place. For the clipped-wing version, glue a W-2 rib in place, and cut the spars off.

Glue the leading edge (LE) 1/8-in. strip in place, and sand it to a bevel matching the ribs. Install the top 1/16 sheet leading edge, leaving space at the center as shown on the plans. Turn the panels over, then pin down and sheet the bottom LE. When dry, remove the panels, and sand the 1/16 edges flush with the 1/8 x 1/2-in. LE strip. Then glue the 1/8-in. LE cap in place.

When building the ailerons, sand a bevel into the 1/4-in. spar, and pin it to the plans. Mark the 1/8-in. trailing edge (TE) for rib positions, make sure the tops of the ribs match, then slip the ribs in place over the TE. Position the TE, and glue the whole assembly with CyA.

Draw a 72-in. straight guideline on the workbench to assist in assembling the wing panels and center section accurately. Using the rear edge of the bottom spars and the spar slots in the CR-1 pieces of the center section as reference points, pin the center section down, line up the wing panels with the guideline, and pin them into place. The standard wing requires a 3/8-in. block under the outer rib for dihedral, while the clipped wing is flat. Use epoxy to join the panels to

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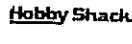
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the center section.

While the assembly of wing panels and center section is drying, glue the maple blocks in place on the front of F-5. Mount the wing on the fuselage, then drill and tap blocks for 1/4 x 20-in. nylon bolts. Sheet the area over and under the W-1 pieces with 1/16 balsa, then finish sheeting the leading edge. Glue up the rudder, fin, stabilizer, and elevator halves. Assemble the elevators with the tubing tie bar.

A Hayes .40 long engine mount with 6-32 bolts through the firewall was used in both versions. Stiff wire was soldered in the head slots, and each bolt-and-wire assembly was firmly secured with a smear of epoxy. Install the fuel tank and throttle pushrod holes.

Glue the F-3 and F-4 pieces in place on the main frame. For the clipped-wing version, frame the door with 1/8 x 1/4-in. balsa, then sheet the front and sides with 3/32 balsa as per the fuselage illustration. For the standard model, omit the door outline and sheet the area as per the plans. Glue the top, bottom, and side stringers to the framework. The dowels to simulate steel tubing in the cabin area can be glued in along with F-3. The entire cabin area is painted with flat black (talcum powder mixed with black dope).

Bolt the wing onto the fuselage. Turn the assembly over, and lay it on the workbench. If installing the standard wing, shim the center section 3/8 in. to allow for the dihedral when fitting the struts. Since the clipped wing has no dihedral, it is laid flat on the bench. Screw the strut mounting plate to the rear LGP as shown in the photos. With the 1/4-in. brass fittings attached to the center-of-gravity minilinks on the struts, mark holes for the 3/8-in.-long No. 2 sheet metal screws. Use a 1/16 drill to bore the holes. Screw the struts on.


Make the jury struts, and attach them while the assembly is bolted down solid. These are made by sanding 1/8-in. doweling to an oval shape and epoxying them to the main struts. Balsa scraps with holes for the jury struts are glued onto the rib as shown in the photo. Install the aileron-crank mounting plates and the 1/16 music wire pushrods, if you haven't already done so.

Covering and finishing. I used Sig Koverall and nitrate dope on both versions of the model, but any of the heat shrink materials should be satisfactory. Use the proper amount of dope or primer coats to achieve a sufficiently scalelike appearance.

Install the windshield and windows, covering them temporarily with masking tape to keep them clean. Mount the stabilizer, keeping it parallel with the wing. Install the elevator, and glue on the fin using 90° triangles to keep it square with the stabilizer.

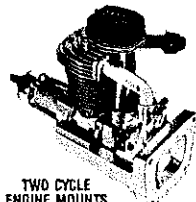
Make up the tail wheel assembly, and glue it in place with epoxy. Hinge and install the rudder. Glue the 1/4-in. balsa fairings to the top of the stabilizer. Bend the landing gear as per the pattern on the plans,

Continued on page 131

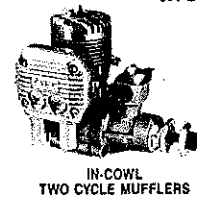


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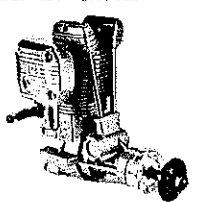
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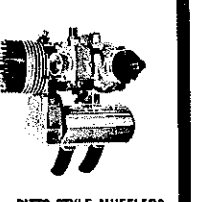
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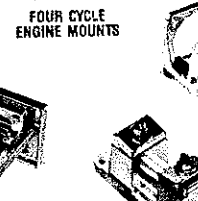
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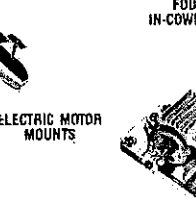
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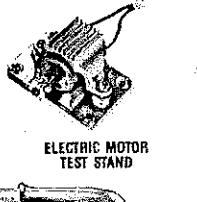
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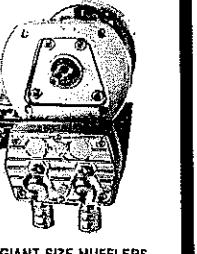
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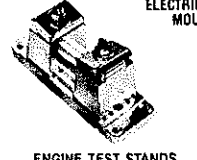
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Safety/Preston

Continued from page 22

either kites or model airplanes near airports.

The kite in question was reported to be "a glider-type kite with a 12-ft. wingspan," and it was being flown on 200-lb.-test nylon line about two miles from the Palo Alto (CA) airport. An eight-year-old girl was flying the kite with her father when a Rockwell Turbo Commander, reported to be flying at an altitude of 800 ft., snagged the line. The newspaper reported that the girl was dragged "about 100 ft.—over her father's head and almost into a tree before she let go (of the line)." Fortunately, she was not seriously injured.

This may be a freak accident, in that I've never before heard of a full-scale aircraft snagging a kite string. I am using the story to stress the importance of avoiding model flying in areas where low-flying full-scale aircraft may be encountered. The FAA's "Model Aircraft Operating Standards" state: "Do not fly higher than 400 ft. above the surface," and, "Do not operate closer than three miles from the boundary of an airport unless permitted to do so by the appropriate air traffic control facility or airport manager."

Have a safe month.

Taylorcraft/Shepherd

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and fill it in with $\frac{3}{16}$ -in. balsa, sanded to fair into the wire. Cover the landing gear, and finish with nitrate dope.

One-off fiberglass cowlings can be made using a styrofoam mold and two coats of one-hour epoxy as shown in the outlines on the plan. If you prefer to purchase yours, high-quality cowls are available from Fiberglass Master, Dept. MA, Rt. 1 Box 530, Goodview, VA 24095. Telephone is 1-703-890-6017.

Both T-Craft models were given polyurethane finishes with good results. For the clipped-wing version, I used Pactra Tropic Blue and Dark Blue, doctoring each with Silver Metallic to get the right shade. The standard model was successfully finished with Red Devil gloss in spray cans. Since I know of no hobby outlet source for this paint, I purchased mine in the local lumberyard.

The cabins on both models were finished with a fair degree of realism. If you want to go the whole nine yards with detailing the cabin interior, follow a basic scale ratio of two inches to the foot.

This dual project brought me a lot of enjoyment. I'm confident it will do the same for you, whether you build the clipped-wing or the standard version. Or both.

Toledo/Blakeslee

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three seconds) reset elevator neutral trim in the spot you were holding. Isn't science wonderful! Trim pots can still be used, also. Programming is done by a button and lights mounted right on the PC board. The

Hi Tech Encoder is available directly from the Hendricksons for \$175, plus \$5 shipping. Address: 2206 S. Lynn, Urbana, IL 61801; telephone (217) 344-8740.

Sailplanes

Ace RC. Bad news, I'm afraid. Ace was planning to come out with Leon Kincaid's three-meter Scooter this season, but because of expanding the plant, it will be delayed until later. The Scooter should be a kit worth waiting for, so stay tuned.

Airtronics. Their Sailplane line continues with the Oly 600, Oly II, Sagitta, Cunic, and Cunic Plus. Their latest kit is a Two Meter Electric called the Eclipse. It has all-built-up construction with a three-piece wing and comes in two kit versions: standard or deluxe. The latter includes a motor, 3:1 gear reducer, and folding propeller. Including the whole works (except for motor Ni-Cd pack and charger) is a good idea because beginners needn't worry about matching components.

Tim Renaud is working on a new Sailplane to be called the Image. It will be all wood with a 100-in.-span three-piece wing with ailerons. There is a niche for a plane like this, I believe. Many fliers want to step up from an Oly II and try ailerons but don't want to go straight to the more expensive glass/foam kits. The Image probably won't be available until Christmastime.

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