



THE West'ner

By DOC MATHEWS . . . A six-tenths scale model of Elbert "Joe" Weathers' great camera plane, small enough for an .049, but big enough to thermal soar with an Ace Pulse Commander radio on rudder only.

• In the memories of most old timers in this hobby, a few models of exceptional esthetic beauty stick out . . . one of the most graceful of these free flights of the pre-World War II Era was Joe Weathers' "Westerner." But how about scaling a Westerner down 60%? It gives a more manageable size, it doesn't cost an arm and a leg for materials, it can use an .049 and an Ace pulse system, and it makes a darn cute airplane. I'm sure you must agree, so let's get building on yours.

GENERAL

All joints are glued with Titebond, Wil-hold, or equivalent. Epoxy is used for dihedral joints, firewall and landing gear. Cover plans with Saran Wrap or something similar, but not wax paper. Use spruce where specified, balsa will not be strong enough.

Trace parts onto thin typing paper, use a straight edge for flat areas for accuracy, spray pattern with 3-M Spray-ment, then stick onto wood and cut out. Peel the paper off and sand.

FUSELAGE

Pre-cut all fillers, bulkheads, etc. before beginning construction. In other words, make yourself a kit. Start by pinning 1/8 x 1/8 spruce longerons onto fuselage drawing. Pins should not go through the wood, but on either side. Glue fillers D-1 through D-4 in place (allow slot for C). Add vertical 1/8 x 1/8 balsa and diagonal 1/16 x 1/8 balsa, allow to set up, then repeat, building second side directly over the first. Allow the two sides to set at least 8 hours

before removing from plans.

Separate the two halves by popping apart gently with a table knife. Trial fit B, C, and D into appropriate slots, then glue permanently. Invert and position wing rail on building surface, use a triangle and carpenter's square to align everything at 90° angles, holding positions with masking tape, clothespins, and T-pins. When glue is set, mark the mid-line on the bottom (surface up) of A, C, and D. Place a straight edge on this mark and pull tail together at mid-line. D-4 is glued and held together, at rear, with clothespins, then cross members are fitted top and bottom. Diagonals are added to bottom, as are the cross sheet fillers.

The tail skid is formed and epoxied to ply filler. The landing gear is formed using a good vice-grip plier, and wrapped onto the ply cross pieces in front and rear. This assembly should be epoxied in place, and the thread wrapping smeared with the epoxy at the same time.

Allow glue and epoxy to set, then remove fuselage frame from surface. I prefer to leave the masking tape in place as long as possible to avoid loosening the cross pieces accidentally. Add deck formers, E, F, G, and H, stringers, stabilizer saddle, actuator mount, firewall, nose blocks; and sand fuselage to contour.

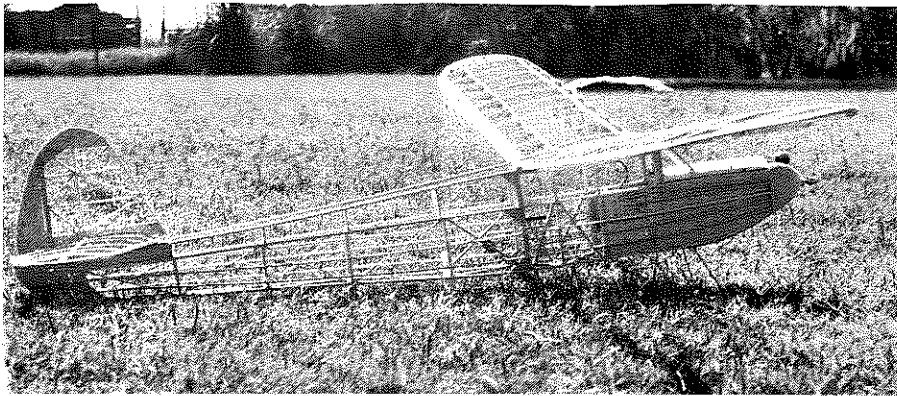
The actuator and radio gear should be installed temporarily, following Ace's instruction book. The torque rod is made up of 1/8 x 1/8 spruce, with wire

bound on each end, then threaded from front to back *before* bending rear loop. Leave a considerable length on the rear wire, which will allow you to thread much more easily. Use torque rod bearing tubing (Ace) on cross piece and at the tail post. Position actuator on its mount and insert into loop on the torque rod. Check for free motion and position rear torque tube (I use Hot Stuff). Do not bend rear wire until final assembly.

Front hatch is made of two layers of 1/4 inch sheet, and 1/2 inch triangle balsa. The windshield frame and hatch are best made up directly on the fuselage. The undercarriage fairings are best made by drawing the outline from the wire onto 1/16 ply. The fairings are Hot Stuffed in place then covered with two layers of silk during covering. Drill holes for 1/8 dowel wing hold downs, but do not glue until the fuselage has been covered. Windows are installed *after* doping.

WING

Trace wing rib pattern onto thin typing paper, spray with Spray-ment, stick onto 3/32 or 1/8 ply, cut out, and peel pattern off. Use ply template to cut rib stacks of light C-grain balsa. Select unwarped 3/16 x 3/4 preformed trailing edge stock, mark rib positions, cut slots, and pin to plan. Position bottom 1/8 x 1/8 spars as ribs are glued and pinned in place. The leading edge is shimmed up to proper height with scrap, then cemented to ribs. Tips are cut from 3/16 long grained balsa (A sheet), observing grain direction, glue three pieces to-



If you don't like pretty framework, this is not for you. As with the original Westerner, the frame features an intricate network of diagonal bracing.

gether then position and glue to bottom spars and front and rear edges... add top spars after tips are in place.

Build a right and left panel.

Notice center section uses four ribs to give a double rib dihedral joint. Allow all panels at least 8 to 10 hours drying time before removing from plan.

Remove wing from plan, block up wing tip 3-1/2 inches, and sand dihedral angle into spars and ribs, using square table edge as is done with hand launch glider panels. Pin center section flat, block up tip 3-1/2 inches, and join with epoxy. Repeat with opposite panel. When epoxy is set, cut notches for ply dihedral braces and epoxy with 5-minute epoxy, holding them in position with clothespins. Add gussets and 1/16 x 1/8 cross pieces, sand leading edge and tip contour, and cut and carve center section front and rear fillers. The wing is now ready to smooth up and cover.

RUDDER

This may look overly sturdy, but remember, this assembly takes a considerable beating if the plane flips over on landings. The drawing is pretty much self-explanatory, just use light but firm wood. The hinges are not installed until after the model is doped.

STABILIZER

Use the tracing paper and Sprayment technique to cut out a set of outline parts from 1/8 sheet. Pin outline in place, cut spar as drawn (this should be hard balsa) and glue in position. Place center section fill before rib blanks. The ribs are pieces of 1/16 sheet scrap from wing rib blanks, be certain the piece is flat on the bottom and at least the height of the spar. After the glue has set over night, sand rough rib shape with 150 sandpaper in a block, then remove from plan and complete the contour with 220 paper. Try to sand in the direction of the rib grain. Take a little time and go slowly to avoid cracking the ribs. If you do crack one, Hot Stuff is great for repairing it.

FINISH

Sand everything with 220 paper, then give all structures 3 coats of clear dope, sanding lightly between coats. If

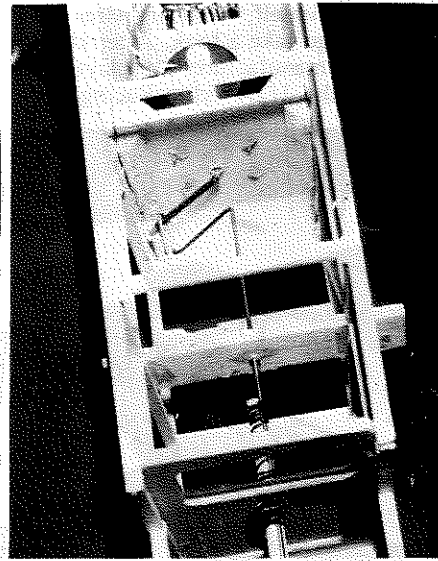
this is your first go at silk, I'd suggest doing the wing first. Iron the silk to remove creases. Cut out 4 panels of silk slightly oversize with the grain running spanwise. Place first panel on the bottom of the wing, position and line up so the silk grain runs fairly straight, then spray lightly with water; I use an old Windex spray bottle. After the silk is wet, any wrinkles can be smoothed out by gently pulling at perimeter. When all is smooth, stick silk to perimeter with thin (5-50) clear dope. Do not feel rushed in positioning the silk, a little more water can be sprayed on to add working time. Trim edges against the wood with a new double edged razor blade (it's difficult to get a smooth edge out in space). Silk the top panel in the same manner, lapping over at L.E. and T.E. onto bottom panel. Trim to cover previous joint. The fuselage is covered in the same manner, making joints for four panels on top and bottom longerons. Tail feathers are done exactly like the wing.

The most annoying problem in doping silk is the tendency for the first coats to penetrate the weave and run down inside, leaving an unsightly smear. There is a way to avoid this; Knox Unflavored Gelatin. No, I'm not out of my tree. This really works! Just mix a package of the stuff as per package directions, then dope the silk with two coats of the warm gelatin. The first impression is rather startling (the model looks like a prune) but when the gelatin dries or sets (I'm not sure which it is), the silk tightens back and the weave is filled. The West-ner as pictured, has but three coats of clear dope, yet is well sealed and looks like 20 coats done the old way. Use Polyester resin to protect front end from fuel.

After clear doping, the trim colors are added, using vinyl electricians tape for masking tape. Two coats of clear are applied to the joints to minimize leakage, then color coats are brushed on. Vinyl trim tape was used to delineate the joints.

The rudder is hinged now, since the danger of getting dope into the joint is

over. I used white carpet thread in a figure-eight pattern. The radio gear should be rechecked for absolute freedom with no binds as per Ace instruction book. Install receiver and battery with foam.



Rear view of actuator mounting shows crank linkage. Loose fit is important... no binding.

The windows are glazed from the inside, using cement to hold to the perimeter. The windshield can be shaped by taping into position, then warming with a hair-dryer until the plastic just begins to buckle. Repeat until the plastic stays in place without help, then cement into place. Complete assembly by installing motor, wheels, etc. Add weight, if needed, to get the center of gravity where it is marked. Beware a tail heavy model!

FLYING

What's to tell you? If balanced at the center of gravity shown, and no warps are present (steam them out if there are), the West-ner will fly free flight. In reality, I use the rudder to *interrupt* the flights. This is essentially a free flight model with radio control used to keep the model inside the perimeter of the flying site. (And that's really what it's all about! wcn)

A word of caution, a full tank will get this little dude gosh awful high. I use 2 to 3cc for about a 50 second motor run. Park your "West-ner" in a thermal and have a ball!

One last thought: Is a 60% "West-ner" a mid-westerner? At least a guy should hyphenate the name!

