

INSTRUCTIONS FOR BUILDING THE CESSNA



designed and drawn by
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Rub candle wax or white soap on plan to prevent constructed parts adhering to it.

FUSELAGE.

Pin $1/16"$ x $1/16"$ longerons to plan, (place pins on either side of wood not through it) cut the uprights to length and cement in place between top and bottom longerons, cement the piece of $1/4"$ x $1/16"$ with slot cut for wing strut, and a piece of $1/4"$ x $1/16"$ with hole bored for motor peg in position. Add scrap sheet gussets. When this side is dry build a second side directly over it using the same procedure this ensures greater accuracy. Remove both sides from plan when set and carefully separate them with a thin flat knife. Slight chamfer inside the rear ends as shown in plan view then cement the two rear ends together and leave to dry while splayed out at an angle — see plan view. Add the cross braces, shown in the plan view, at the widest part of the fuselage, i.e., the wing position, add the remaining cross braces working back towards the tail, check for squareness as you proceed. Carefully pull the nose sides in and add the cross braces at the front. Cement formers 2, 3, 4, 5 and 6, in position and cement the $1/16"$ x $1/16"$ stringers (shown by dot dash line on plan) into the notches provided in these formers, note the lower stringers butt join to a cross brace as indicated in plan view. Cement pieces 'A' in position in notches in formers 2 and 4. Cement item 7 in place. Bend undercarriage wire to pattern, mount wheel on axles, and bind whole unit into fuselage where shown, cement liberally. Add tailwheel assembly, bind in place and add gusset inside stern post. Cover the top of the fuselage between formers and 5 with stiff paper wrapped over and cemented in place. Cement former 1 on to former 2, fit undercarriage fairings to under carriage wire, cut celluloid to patterns and cement these in position. Roughly carve the nose block to shape, cement pieces 1A and 2/ to rear face and use these to "plug" the nose block into hole in formers 1 and 2. Shape nose block to smooth finish while mounted thus on fuselage. Bore hole in nose block and cement nose plug in. Bend a hook on wire supplied, push through nose plug from rear place two cup washers on wire then the propeller, bend the wire at right angles as shown, push into slot provided in propeller spinner and apply cement. Tissue cover the fuselage, water shrink an dope before assembly with wings and tail. Add small details a noted on plan, i.e., steps, exhausts, etc.

WINGS.

Retain the $1/16"$ x $1/16"$ lower spar (notice both upper and lower spars are left protruding to plug into notches in the centre section ribs) in position on the plan by placing pins on either side pin the $1/4"$ x $1/16"$ trailing edge and the $1/8"$ x $1/16"$ leading edge to plan, cement the tip pieces in place. Cement the wing rib to T.E., L.E. and lower spar directly over positions shown, keep them all perfectly upright. Cement the upper spar into the notch in wing ribs, crack spar downwardly at the tip and join to same a shown in section through wing tip. Cement the pieces of $1/4"$ x $1/16"$ — slotted to receive ends of the wing struts — in place flat on plan. Build the Centre Section using similar method as for the wing but note the "tilt" in both centre section ribs and the way it is obtained using the template as sketched on plan. Add the two pieces of $1/16"$ x $1/16"$ in the top notches after tilting the rib: This "tilt" raises the tips of the wings to $1/2"$ dihedral when they are joined to the centre section. When the three wing sections are constructed round off the leading edges and chamfer down the trailing edges, the port and starboard panels may now be cemented to the centre section, notice how the wing spars plug into the centre section ribs. Leave the wing to set with the centre section flat on the building board and the tips propped up to $1/2"$ each side. Give final sandpapering, tissue cover, water shrink and dope. Aileron and flap lines may be added as shown by using Indian or thin strips of black paper.

TAILPLANE AND FIN.

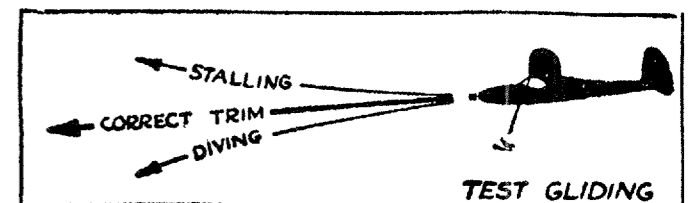
These are constructed by pinning the outlines of printed part and stripwood in position, cementing the joints and adding the cross pieces of $1/16"$ x $1/16"$. Cover both fin and tailplane, water shrink and dope before assembly to fuselage. Imitate control surface line in similar manner to wings.

ASSEMBLY.

Cement the tailplane in place on top of the fuselage where arrowed, cement the fin directly along the centre line of the tail plane and to the stern post of the fuselage. Line up both component by "sighting" along the fuselage from back or front. Apply cement to the underside of the structural members of the centre section, and seat the wing squarely in place on top of the fuselage. Construct wing struts, cement the ends and insert them into the appropriate slots in wings and fuselage.

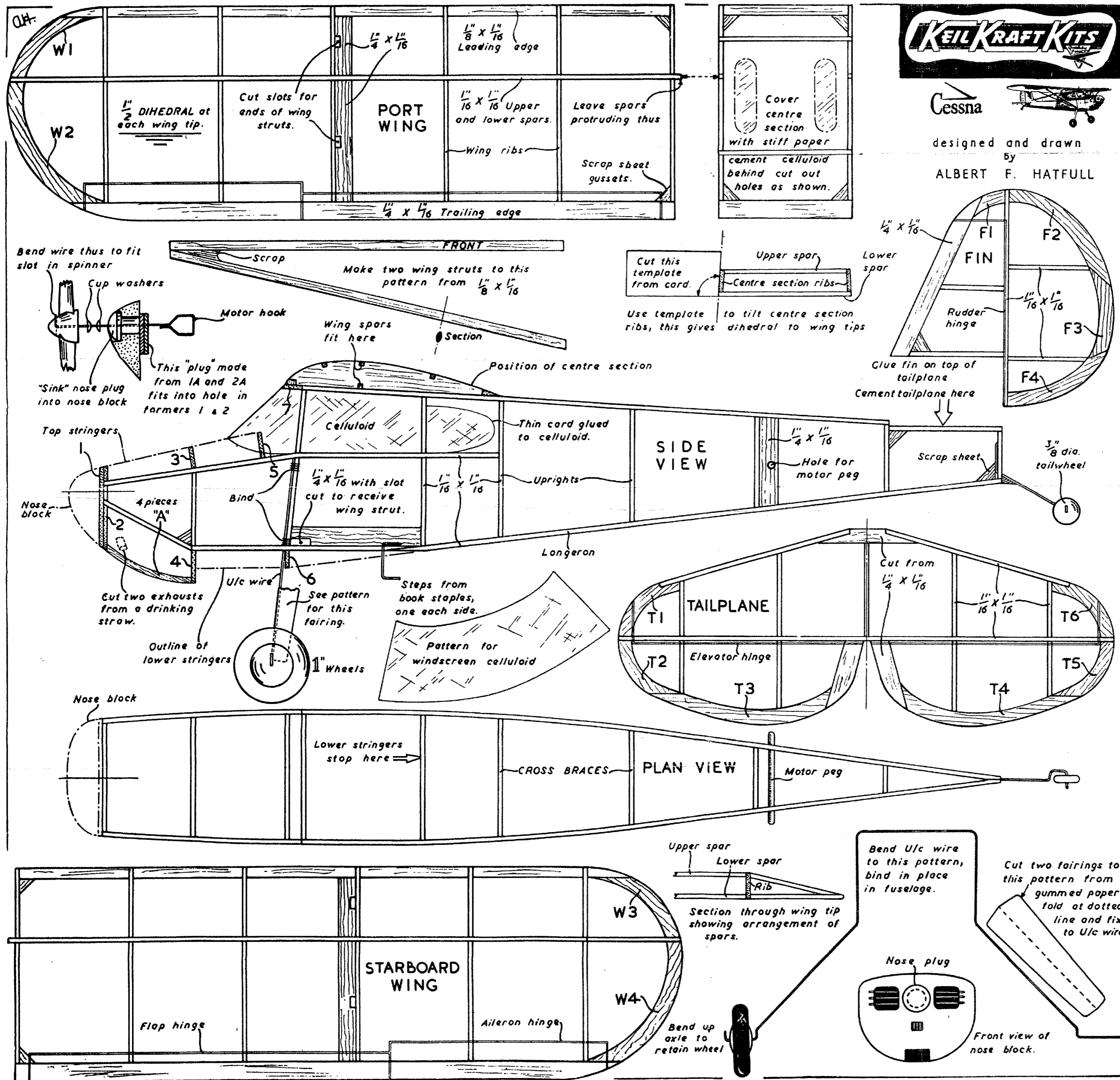
FLYING.

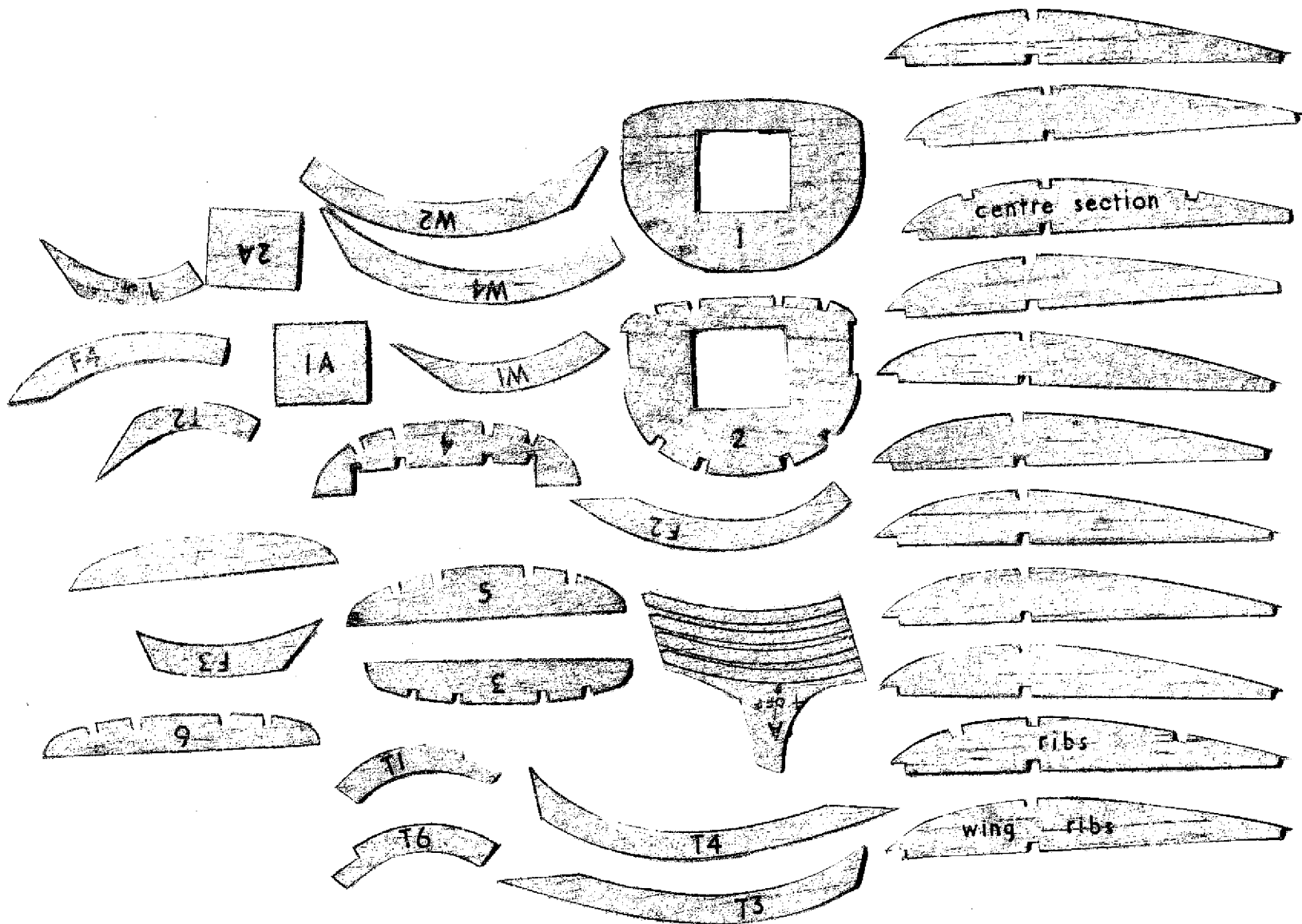
Tie the ends of the strip of rubber together (unless two band are provided) lubricate with ordinary castor oil, double over to form four strands and drop the knotted end down through the hole in fuselage nose. Use the small peg to retain the rubber motor at the tail end. Place 25 - 30 turns on each loop separately then place both loops on to motor hook. With the model now fully assembled it should be held on the fingertips at the spar position of the wing and made to balance level in such a position by adding small piece of plasticine to either nose or tail, whichever is required. When balance is obtained test glides may be made perfectly over long grass to avoid undue damage. Handlaunch the model gently from shoulder height on a slightly downward path directly into the wind. If dive results, add a small piece of plasticine to the tail, if the model stalls (see sketch below) add a small piece to the nose (conversely weight previously added when balancing may be removed with similar effect). Once a long flat glide has been obtained, hand turn may be applied to the rubber motor, starting with about 75 turns and gradually increasing to 200 to 250. When using full power insert a thin piece of balsa about $1/32"$ thick in the top of the nose block, this will apply downthrust to the propeller and avoid power stalling.



Have you built the — Globe Swift — Auster Arrow — D.H. Chipmunk — in this series? Watch for further additions to the KEIL KRAFT range of flying scale models.

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100 mm

CESSNA 140
1/16" BALSAs

