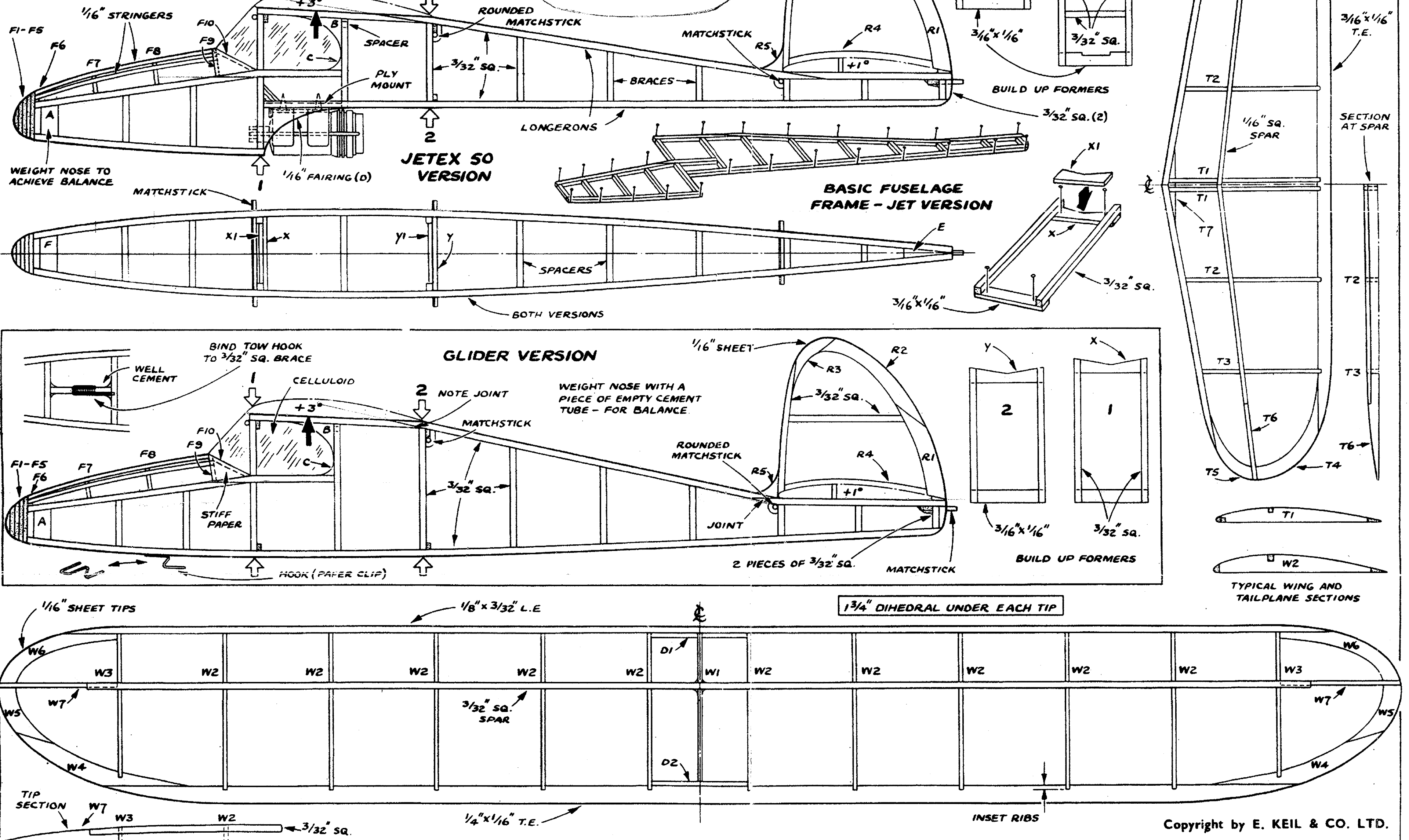


CUB

WINDSCREEN
TEMPLATE



BUILDING INSTRUCTIONS

The CUB is particularly suited for the beginner—construction being both simple and conventional. Before starting to build, read through these notes and study the plan carefully. The only tools needed are:—

1. A balsa knife or some razor blades.
2. A small pair of pliers.
3. Some fine sandpaper.
4. A packet of steel pins.

Protect the plan with a sheet of greaseproof paper and make sure that the board on which you build is flat. Only cut out the parts you require them, otherwise they may get lost or damaged. The only difference between the Jetex and the glider versions is the fuselage, the wings, tailplane and fin being identical.

FUSELAGE

1. Pin the longerons to the basic fuselage plan of whichever version you are building.
2. Cut the upright braces (two of each) and cement one set in place.
3. Build the second side frame directly on top of the first.
4. Build formers 1 and 2 on the plan (Check that you are building the correct formers).
5. Remove the fuselage frames from the plan. lightly sandpaper and carefully separate.

6. Join the two sides with the formers (See sketch in this leaflet).
7. Cement pieces E and F in place and cement the tail ends together, holding the nose and tail together with elastic bands.
8. Add the spacers, obtaining the sizes from the fuselage top view.
9. Cement F1-F5 together to form the noseblock and set aside for cement to set.
10. Add formers F6-F9 to the fuselage assembly, followed by the 1/16" sq. stringers the stiff paper covering between F8 and F9 and the celluloid windshield.
11. Cement the noseblock in position, and when set, carve and sand it to the shape shown on the plan.
12. Add scrap gussets to take the wing and tail fixing dowels.
13. (Jetex version). Cut the piece of ply provided to fit in the underside of the fuselage, attach the Jetex mounting clip, taking care that it is central and straight, and cement the ply in place, followed by pieces 'D'.

WING

1. Cut the notches for the wing ribs in one of the trailing edge pieces, and pin this in place on the plan, followed by W4-W7.
2. Cement D1 and the wing ribs in position, then D2 the leading edge and spar in that order. (Note that W1 is tilted slightly—use the

3. angle template (Z) to obtain the correct tilt). When the assembly has set, remove the pins and pivot the wing panel about W1 until the outer arms of D1 and D2 are flat on the plan. Block up the tip so that it is 3/4" above the plan.
4. Build the outer wing panel in exactly the same manner as the first, ensuring that all joints at W1 are well cemented.
5. Remove the wing from the plan and sandpaper to the indicated section.

TAILPLANE AND FIN

The tailplane is built in a similar manner to the wing, except that as there is no dihedral, the tailplane is built in one operation. Be sure that the ribs T1 are upright, and that there is sufficient space between them for the fin to fit snugly, otherwise the fin will not be upright. The fin is built flat on the plan, and when the cement has set, the 3/32" sq. wood is sandpapered down to the same thickness as R1-R5. (1/16").

NOSEWEIGHT

When the wing and tailplane have been completed and covered, fasten them to the UNCOVERED fuselage and adjust the amount of weight until the model balances 1/16" forward of the point marked on the plan. Use pieces of an old cement tube for weight and cement in the fuselage behind F5.

COVERING AND DOPING

The fuselage is covered with five pieces of tissue, two pieces for the two sides, one piece for the bottom, and two pieces for the top, applied in that order. Cut the tissue slightly oversize and with the grain running the longest way of the tissue, paste all round the edges of the part to be covered, attach the tissue at one end and stretch it across to the other. Now work along the sides, using the tissue out until the part is covered evenly with no wrinkles. Trim off the surplus with a razor blade. The fin and tailplane are covered with two pieces of tissue—one for each surface. The wing is covered with four pieces of tissue. In each case the same rules as given for the fuselage apply.

When the model has been covered, the tissue should be watershrunk, either by steaming or by spraying with water from mouth or insect spray. (Note—when moist, the tissue will be slack. It will not tighten until the tissue has dried.)

When all traces of dampness have gone from the tissue, cement the fin between ribs T1 of the tailplane. Give the fuselage three coats of thin clear dope and the flying surface two. Be sure that the flying surfaces do not warp when drying. It is a good plan to pin them down as soon as they have been doped, but wait until the dope has dried to the touch, but before the tissue has tightened. Colour dope is rather heavy for a small model of this nature so confine it to the fuselage, and as little as possible there.

TRIMMING AND FLYING INSTRUCTIONS

The trimming angles have all been built into the CUB and providing you have made your model exactly as shown on the plan, only slight adjustments will be needed. Trimming is simple for both versions, if you follow these instructions.

ASSEMBLY

Before taking your model out to the flying field, check that the flying surfaces are quite warp free. Attach the wings by four rubber bands—two to each wing dowel. Pass two similar bands over the fuselage tail, hold the tail unit in place and bring both bands over the fin to the projecting peg. Make small pencil marks to indicate the correct position of the flying surfaces. Lastly, check that the wings line up correctly with the tail surfaces in the head on view.

The model should balance at the point marked on the plan—1/3 of the chord back from the L.E. Weight should be added or taken off until this is correct.

TEST GLIDING

First test flights should be made in calm, dry weather and preferably over long grass to avoid damage. Face into the wind and gently launch the model from shoulder height on a slightly downward path. A long steady glide of twenty feet

or more should result. On no account launch the model upward, as this will make it stall. For best results, a gentle turn in either direction is necessary. More than likely, the model will have a 'natural turn'—but if not, the rubber should be offset to one side (approximately 1/16" at the trailing edge). Once a steady curving glide has been achieved, you are all set to try a towline launch (glider) or power flight (Jet Version). A tendency to stall is remedied by placing packing under the tailplane leading edge. For a nose diving tendency, the tailplane incidence may be decreased (packing under the tailplane T.E.). These adjustments should be made a little at a time—1/64" or 1/32".

TOWLINE LAUNCHING

Buy a reel of strong thread and tie the end to a paper clip. Just ahead of the paper clip, attach a small piece of rag in order that the tow-hook may readily blow off when the towing tension is released. Unwind 50 to 70 feet of thread, place the tow-hook (paper clip) on the hook and get a friend to release your model. Your helper should keep pace with you as you run into the wind and let go as he feels the wings begin to lift. In windy weather you can stand still and let the model kite up.

POWER FLYING

Most of the trimming difficulties of the Jetex 50 powered models are caused by the decrease in

weight as the solid fuel is burnt. Models with the jet unit positioned well forward, usually stall after the charge has been expended. This snag has been overcome on the Jetex 50 version of the CUB by weighing up the nose to obtain correct balance and then attaching the jet unit under the C.G. This results in a slightly higher all-up weight but provides similar flying characteristics with and without power. For the first few power flights, use HALF a standard charge. Wait until the thrust develops before launching. If a shallow climbing turn results, FULL charges may be used. Detailed instructions for Jetex operation are given with all Jetex outfits, so there is no need to repeat them here.

