



# Kestrel

## TOWLINE SAILPLANE

### SPECIFICATIONS

KIT No. 162

WING SPAN 1472 mm. TAILPLANE SPAN 400 mm.  
 WING CHORD 130 mm. TAILPLANE AREA 337.5 sq. cm.  
 WING AREA 2036.8 sq. cm. FUSELAGE LENGTH 670 mm.

### BUILDING AND FLYING INSTRUCTIONS

**FUSELAGE:** Carefully study the parts in the box and the plan so that you understand the construction before beginning. Wherever balsa and plastic parts are joined do not use excessive amounts of cement as this will distort the plastic. Trim the three plastic parts down to the thin line on each using a sharp balsa knife or similar. Cement the two weight washers into place and cement former 1 into the rear of the bottom plastic section. Cement formers 2 and 3 to former 4. Bend the wire towhook to shape from 16g wire supplied and bind and cement to a scrap piece of 3/16" balsa. Drill a 1/16" hole in the centre of the bottom plastic section at the position shown and cement the towhook assembly into place. Now cement formers 2,3,4, into the bottom plastic section. Pin the former into place through the plastic until dry. Next cement formers 5,6,7, into the top plastic shell and 41 and 42 to the canopy. Carefully cement the canopy and bottom and top plastic sections together to form the basic fuselage. Hold together with rubber bands until dry. Pin and glue the 3/16" squares along the edges of parts 17 as shown - taking care to make both a left and a right hand side. Next pin the right hand fuselage side over the plan and pin and glue formers 8,10,12 and 13 into place as shown. Formers 9 and 11 will be fitted at a later stage. When formers 8 - 13 are dry the left hand fuselage side can be pinned and glued in position, ensuring that the whole construction is straight and square as in the scale top view drawing. The tail end of former 4 is now glued into place on formers 8 and 10 as shown use plenty of cement between formers 6 and 8. Formers 9 and 11 can now be added as is shown on the plan. Bottom sheeting 19 can also be fitted along with top sheeting 18. Drill 1/8" holes where shown and glue the 1/8" dowels in place for wing holding rubber bands. When dry the balsa tail boom can be sanded fairly heavily to make it's lines blend in with the streamlined looks of the plastic moulded section. Dope and talcum powder can be mixed and used for filling any gaps or holes in the fuselage.

**FIN AND TAILPLANE:** Pin parts 14 and 15 over the plan and cut and cement 5/8" x 1/2" strips in place, also cut 1/8" dowels in place for tailplane holding rubber bands. Do not remove the fin from your building board until the glue is dry otherwise it could twist, which will greatly affect the performance of your Kestrel. When dry the balsa gusset pieces can be glued to both sides of the tail fin as shown to support the tailplane and ensure that it sits square to fuselage. To attach the tailplane, drill two 1/8" holes for the 1/8" dowels which hold the rubber bands. These dowel pieces are then glued in place as shown. The rudder 16 is sanded with two pieces of very soft wire as shown. Once sanded, as described in the section covering, the fin can be cemented in the slot at the rear of the fuselage; the fin must be exactly vertical as shown in the "Dihedral Detail".

**WING:** Pin 1/4" square leading edge, 1/8"x1/4" bottom main spar and formed trailing edge over the plan for the right hand wing. Pin and cement ply braces 23 and 25 in place over bottom wing sheeting 21 and 22. Ribs 26 to 39 can then be glued in place according to their position marked on the plan. The top 1/8" x 1/4" main spar can then be fitted in place along with ply brace 24. Rib 26 must be angled with the rib template drawn at the lefthand side of the right hand wing. Carefully cut the template out and glue to a thin piece of card which can then be used as shown. The 1/8" sheet leading edge covering can then be pinned and glued in place - use plenty of pins so that the sheeting sits exactly on the top main spar and behind the leading edge. Centre sheeting 40 is now glued in place. DO NOT remove the wing from the building board until it is completely dry, otherwise it will warp or twist which will greatly affect the aircraft's performance. The same building procedure is used for the left hand wing, again using the rib template to angle rib 26. Once the right hand wing is dry it can be taken off the board and the ply braces lined in position with the drawing of the left hand wing. The wing tips are carved and sanded from the blocks supplied after they are glued in position on rib 39. The leading edge is then sanded to the shape shown in the fuselage side view; the rest of the wing can also be lightly sanded ready for tissueing.

**COVERING:** The most important thing to watch with tissueing is that as the tissue dries it does not twist the wings it is covering. Cut a piece of tissue roughly the size of the part to be covered, give the balsa frame a coat of dope then hold the tissue out tight and brush dope through the tissue and onto the framework, pulling out any wrinkles as you go. Always tissue the bottom surface first. Trim off excess tissue and then cover the top side in the same manner, this time leaving approx. 1/2" all around the edges to be folded and doped under the leading and trailing edges. Spray lightly with water and when dry apply one coat of dope all over. Cover the main wing, the tailplane, tailfin and rudder section in this manner.

**FLYING:** Drill 1/8" hole in the side of the fuselage in front of former 3 so that you can add lead shot ballast to achieve the correct balance point. Check that the wing and tailplane are correctly aligned when viewed from the front and fixed in place with the rubber bands that are supplied. Make up a towline of 150 feet from thread supplied with a metal ring and flag as shown. Choose a calm day for your initial flight. Gently launch the model into the breeze from shoulder height, point the nose slightly down. A long flat glide should result - if the model stalls place a piece of scrap 1/16" balsa under the front of the tailplane and if the model dives, raise the back of the tailplane in the same way. Continue this procedure until a long flat glide results. Minor adjustments to the ballast weight may be necessary to achieve maximum performance. Have a helper hold the model at shoulder height with the nose pointing up slightly; hook the towline to the plane and launch the model by slowly running into the wind. If the model turns sharply, adjust the rudder in the opposite direction and tow up again.

