

Aero Commander 560



A C/L Scale Version designed for 2.5cc motors by Alan D. Kingswood

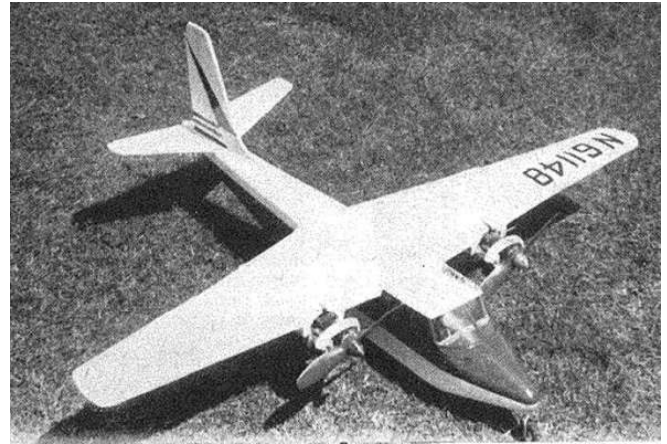
One of the few light "twins" on the American market with a high wing, the Aero Commander is produced in 560 and 680 super versions, by the Aero Design and Engineering Co. of Bethany, Oklahoma. A good looking five to seven seater, it is powered by two horizontally opposed Lycoming engines and its only detractor from the conventional is its swept fin and rudder.

The machine is in use in many parts of the world. Performance capabilities have been shown by a non-stop trans U.S.A. flight by a 680 super and a non-stop single-engine flight from Oklahoma City to Washington, D.C., by a model 560.

The Aero Commander 560-A serves in the U.S.A.F. as the L-26B V.I.P. transport and the 680 with the U.S. Army as the L-26C. One is also used by President Eisenhower.

The model was produced from factory drawings supplied by Aero Design and Engineering. It was originally powered by Mach-1 engines in an effort to find the minimum size model for two 2.58 and was overpowered as a result. Consequently, a pair of good 1.5 c.c. engines should do the job well, or even maybe two A-M 10s if the construction is kept light.

Fuselage: Commence construction by cutting and assembling the nose keel from 1/4 in. ply and balsa. Form the nose-wheel leg from piano wire and, not forgetting the brass or tinplate reinforcement soldered in position, securely bolt it in place on the keel (the wheel should be inserted during bending). Cut all the formers from the wood specified on the plan, and cement A, B, C, D, E, and F to the keel



The author's Aero Commander 560. This photo shows just how important is attention to detail in a scale model the N61148 should be on the starboard, not port, wing!

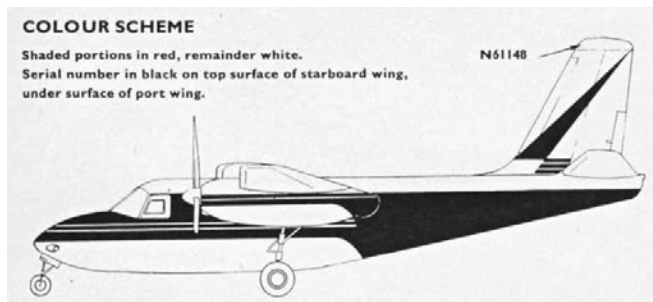
in their respective positions. Cut the fuselage side from hard 3/32 in. balsa sheet and cement into position, taking care that the tail «Mid comes together properly. Cement the rest of the formers between the sides, making sure the fuselage is true about the fore-and-aft center line. Add the backing strips around the inside of the cabin, and also former B/X, then lay aside to dry thoroughly.

Wing: Cut the wing spar joiner from 1/2 in. plywood, cut the spars from 1/4 in. hard sheet balsa and, using pre-cementing technique, carefully bond the spars to the ply joiner. It is worth while to bind the spar-roots with silk and cement. Fix the starboard spar in position over the plan and cement the wing-ribs in place. Ensure that ribs 3 and 4 are spaced correctly for the nacelle formers. Repeat with the other wing, then add the tips, auxiliary spars and leading edges, using a scarf joint at the leading edge join. Sheet the underside of wings from R1 to the tips (leaving a space for the addition of the nacelle formers from leading edge to N3).

Nacelles: Assemble the engine bearers and nacelle formers using a good glue that is impervious to fuel and oil, not balsa cement. Form the main undercarriage members from 12 S.W.G. piano wire and bind and cement in position as per plan. The bearer holes and spacing shown suit the Webra Mach-i. It is advisable to bolt the engine to the bearers while assembling the nacelles to ensure the correct alignment. Cut any necessary holes in NF1 to clear air intakes on rear induction engines before

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assembly. When all is correct leave overnight to thoroughly set. Offer up the nacelles to the wing and glue and screw them into position on the leading edge and spar; the bearers must be horizontal and the undercarriage vertical. Check the alignment before the glue sets. Make the tanks from brass shim or thin tin plate and install them in the nacelles, making sure there will be no kinks in the fuel lines to the engines. Extend the vents to the upper surface of the wing. The original tanks were made similar to those used for team racing.



Tail Assembly: Construct the tailplane and fin from wood as specified. Hinge the elevators by your favorite method after connecting them with the two wire yokes. Fix the tailplane into position on the fuselage at 0 deg. incidence. (The top of the fuselage sides should be parallel to the datum line.) Add the fin, vertically, on the rear fuselage with the rudder cemented for a slight turn to starboard. Fit the rear fairing block and carve to shape.

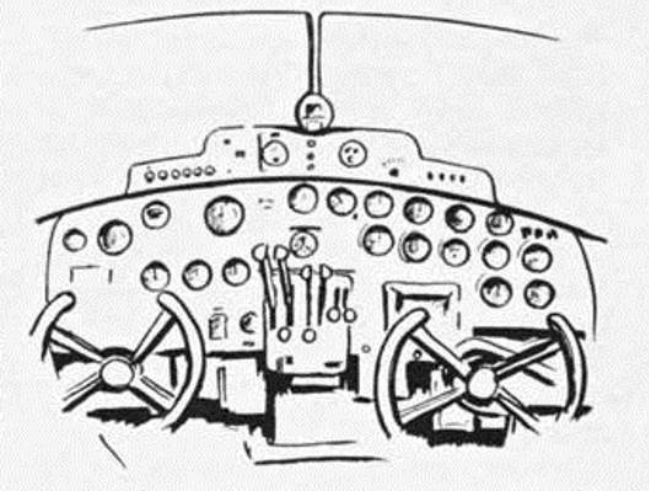
General Assembly: Join the wing to the fuselage, again pre-cementing the joints. Check the alignment carefully. Use plastic wood for wing filleting internally to strengthen. Install bell-crank and mount in the port wing root—see plan. The mount is slotted into former F and is cemented to the top of the wing leading edge. Thread the leadout wires through the wing and fix securely to the bell-crank. (Note: a leadout pulling out while flying makes a mess of the model—I know !) Use metal tubes at the wing tips. Fix the 16 S.W.G. push rod between bell-crank and tail horn. The rod should be a close sliding fit through the small holes in each former to prevent it bowing. Solder the pivot nut on and do not leave flux around moving joints. Now check the controls for free movement. Using 1/4x 1/8in. balsa, plank the top of the fuselage and nose and add the fairing block at the front of the cabin. Plank the sides of the nacelles and fair-in the rear with

soft sheet as indicated on the plan. Leave a hole in the underside for the undercarriage well. At this time check the following: undercarriage, controls, tanks, then add cabin details if required, and tip weight to starboard wing. Use plastic wood for the wing and tail fillets, fill in the underside of the fuselage and the nacelles, chamfer the trailing edge of the lower wing sheet and sheet cover the upper surface with 1/16 in. balsa. The original ailerons were cemented in position to induce a turn to starboard, but were found undesirable as they produced a lateral rocking when engines ran rough. The overpowered condition also contributed to this no doubt. Cement the hard balsa nose block in place then carve and sand it to shape. Cut holes for the landing lights and add the nose-wheel doors. Construct the cowlings from laminated sheet (as plan) and cut away to clear the engines, then add exhausts to nacelles. The cowlings are held in position by wood screws passing through the ply front into the ends of the bearers.



Above: Alan Kingswood with his original Aero Commander 560. Alas ! the model is no longer with us. Alan took off in the dusk with the handle upside down—need we say more !

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below: Sketch of the controls and instruments of the 560.

Model Aircraft Magazine July 1958

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