Great Lakes Trainer

A neat control line biplane for 2.5-3.5 diesels by Alan Kingswood.

The full size counterpart of this attractive model was produced by the Great Lakes Aircraft Corporation in considerable numbers in the early 1930s and in many versions. It was one of those designs so few and far between that could be " mucked abaht wiv " and still fly a tribute to its sturdiness which is reflected in the model version presented here.

Commence by cutting out the fuselage sides from medium 1/8 in. sheet balsa (cut both from one sheet if possible), then cut out the formers from the material specified. Drill bearers and bolt engine in place, slide on the ply formers and double cement or glue them in position. Bend the undercarriage from piano wire and bind and cement in place. Form cabane struts and bind to the respective formers but do not solder diagonal brace to cabane at this time. Cement fuselage sides to the bearer assembly, pull rear end of fuselage together and double cement. Cement remaining formers in place after cutting holes for push rod.

Bind and cement ply upper wing fixing braces into place on center section cabane struts. Install the fuel tank (a Mercury pressure tank was used on the original). For stunt work ensure that the center lines of the tank and carburettor line up. Bolt bellcrank into position with push-rod in place. Lock by soldering nut in place or by using Simmonds or nylon nuts. Make sure when soldering that no flux gets on control plate pivot.

Cut out the tailplane and elevators connecting the latter with a piece of 1/8 in. dowel, and sand to the section shown. Use your favourite method of hinging. Cement in position on fuselage and hook up elevator push- rod and horn. The lead-outs can now be added but make sure they are firmly fixed to the control plate. Cut out, sand and fit vertical fin and rudder, ensuring clearance for elevator yoke and fit rear decking spine. Bind tail skid to ply and firmly cement in place.

Build wings on plan—packing up leading edges and trailing edges. When dry remove from board and carve l.e., t.e. and tips to shape. Note lower wings have leading and trailing edge stubs left at root. Cut out interplane struts from ply, slide into position in upper and lower wings and offer assembly up, without cementing, to fuselage. Pin interplane struts temporarily into position as these give correct relationship of wings to each other. Ensure that wire cabane struts fit into top wing without springing it out of place. Remove wings and without moving cabane struts from position add diagonal braces.

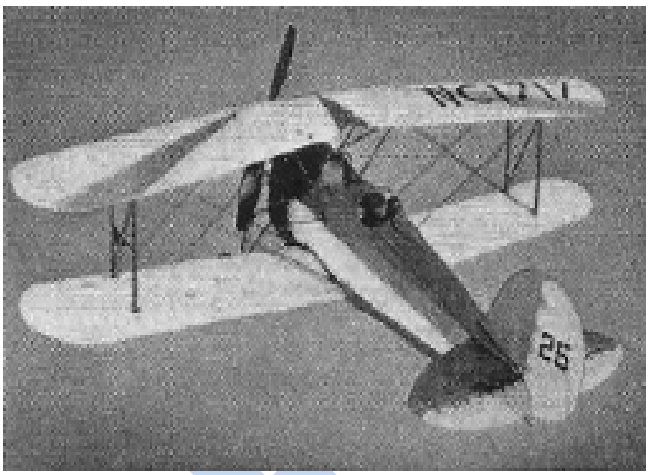
Check all fuselage interior fittings and cement side and top decking stringers in place. Plank top of the fuselage and cut out holes for cockpits. Before fixing ·£· in. sheet bottom it is advisable to fuel proof the inside of the tank compartment as it is difficult to keep drops of fuel out, especially when using a pressure bottle for refuelling. Also provide a drain hole in the fuselage bottom. Add cowling blocks and carve to shape. When dry remove and carve inside to fit round motor, then fuel- proof inside most carefully.

Cover entire model with silk. It is well worth the trouble for the extra durability. Covering the sheeted sections of the fuselage helps prevent the ingress of fuel and stops the wood splitting at stress points.

Cut the covering away at the underside of upper wing at interplane struts, underside of upper wing at cabane struts, upperside of lower wing at interplane struts. Cement top wing in position on cabane struts then cement interplane struts into underside of upper wing. Cement lower wing in place, double cementing at fuselage/wing joint. Check alignment of wings before cement sets —it's difficult to change later. Add

Great Lakes Trainer

undercarriage fairings, line-guide, headrest and windscreens.



Finish with several coats of sanding sealer, rubbing down between each coat with wet and dry paper. A minimum of four coats should be applied and the addition of a little coloured dope to the filler is useful— use light base colour only. Wing bracing adds enormously to the strength and should be used. Polish with wax or “Autobrite” for final finish and lastly add the wheels. You should now have an almost indestructible model with quite a lively performance.

Model Aircraft Magazine June 1957