SKYLARK . . . Continued

wobble in the triangle after a 120° corner.

When asked if there is any one feature that contributed most to the success of the Skylark, Ed replied with a big "yes!". "That feature would have to be the absolutely perfect alignment these planes have." Some builders "eye-ball" their important assemblies together or at the very best, take quick measurements. This type of hurried alignment will almost certainly result in an airplane that wants to fly up or down. Or it wants to "bank," "yaw" or a combination of several of these discouraging faults that makes your airplane a hard-to-fly, clumsy performer. This precision alignment can easily be the difference between a "clunker" and a contest winner! The wing for the Skylark is built with jig-type spars that will provide rigidity and positive alignment while gluing. Also, as short assemblies are easier to keep true, the wing is built in halves, then joined a la free flight with a plywood spar doubler. Exactly zero degree wing and stabilizer incidence are of utmost importance and can be obtained by careful layout of the fuselage sides, drawing reference lines directly on the wood. The root rib centerline, stabilizer centerline and the thrust line must all be parallel. Flap and elevator neutrals are also located from these reference lines. The wing-to-fuselage joint is made directly over a full size top view of the plane, showing only spar locations and the fuselage centerline. Ed drew these lines right on a piece of plywood 4 feet square which he uses as an alignment bench for all his planes under construction. The stabilizer is also joined over these reference lines. This will assure that the flying surfaces are mounted parallel to and at exactly 90° from the fuselage centerline.

Plank your fuselage bottom before permanently attaching your stabilizer, as the planking usually twists the fuselage slightly and this twisting will certainly tilt the stabilizer you had aligned so nicely. When you first fly an airplane set up at exactly zero degree everywhere, you'll be absolutely amazed at the difference in the way it performs. Once you have had a plane like this, you'll never build crooked again.

The present landing gear placement produces "wheel" landings every time: Ed tried tricycle gear on his early ships but his inside maneuvers weren't as sharp. Apparently, trike gear throws off the vertical C.G. too much on inverted engined ships.

Ed has done considerable engine testing for his friend Dick McCoy, so his choice in a powerplant is a rather natural one. A long time ago Ed tried the original .35 Stunt prototype in a Skylark and has used it in various stages of development ever since. Ed feels that many would-be stunt fliers make the error of using an engine for stunt flying originally designed for high speed and, consequently, will not four-cycle properly. Ed uses a cross-feed "clunk" tank to feed his engine and four-cycle through all his maneuvers. His needle valve setting gives him a low speed four-cycle in level flight and a higher speed four-cycle during maneuvers.

Preoccupied with propellers, Ed has been experimenting with three-bladers. He has found that a three-bladed 9-6 equals a regular 11-5 in thrust and seems to pull through the corners a bit better. Fellow modelers at a recent contest thought that Ed had the three-blader on only for looks. All were rather surprised when he didn't remove it for his flight.

BUILDING: Only the most unique methods used in constructing the Skylark are discussed.

To assemble the wing: Draw centerlines on wing ribs and spars for alignment and slip ribs over spars. Align each rib carefully and glue only to leading edge and rear spar. Do not glue the ribs to the main spar yet, until all the other joints have completely dried. This way, you will not build internal stresses into the wing which could tend to warp it. After sheeting the leading edge, carefully align the two wing halves and join with the plywood doubler. For trailing edge reinforcement at the joint, carve a block to fit inside and glue in place.

To assemble the fuselage: Start by gluing and screwing motor mounts to the plywood doublers and adding bulkheads F1 and F2 to form a box assembly. When dry and rigid, add the ½″ balsa fuselage sides. To join the sides at the tail, draw three parallel lines on a piece of paper as a guide to accurately align the tail position. Alignment again? Two lines will show the outside measurement of the fuselage, the other one located exactly half-way between them. Glue the sides and install the bulkheads over these reference lines and it will assure of a (Continued on page 44)