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So Long, but not forgotten

■ Harry Murphy

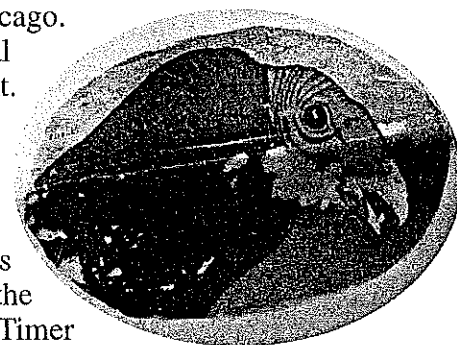
Carl Goldberg's Zipper and other pylon models were revolutionizing gas-powered free flight by the time of the 1940 Chicago Nationals. However, there were at least two new cabin designs that would slow pylon's eventual domination; both were products of the since-disbanded Chicago Buzzards club.

One design was Joe Konefes' Buzzard Bombshell, which won the Class C Open event; the other was Bill Englehardt's Ohlsson .23 sideport 50-inch So Long, which posted three consecutive seven-minute flights to win Class B Open. These triumphs created a renewed respect for cabin-type models, and both designs were subsequently kitted by the Aircraft Model Company of Chicago.

Soon after the 1940 Nats, Bill Englehardt lost his original 50-inch model, and faced the task of building a replacement. This time he chose to build a slightly larger version around the new Forster .29. The new model was very similiar in appearance to its predecessor, with the wingspan being extended to 54 inches.

It's common knowledge that Bill Englehardt followed his original 50-inch So Long with this larger model, but since the beginning of the SAM (Society of Antique Modelers) Old-Timer movement it has been generally accepted that the only difference between the two versions was the addition of two-inch sections to the inner panels of the wing.

*Winner of
Class B at the
1940
Nationals is
now
documented
for Old-Timer
use*



While there surely have been those who were aware of other differences, no one contested the assumption that the wing extension was the only discrepancy until Bob Larsh showed up at a club meeting of the Central Indiana Aeromodellers in the early 1980s with Englehardt's original Forster .29 version.

It seems that Bill's second effort had hung on display in a Chicago hobby shop from the war years until the advent of the Old-Timer movement. At the urgings of some local Old-Timer enthusiasts, the model was reactivated for flight, and after some additional contest years was retired once again.

Englehardt's model is now very tired, and will probably never again float in warm thermal air; rather, it will likely be condemned to some musty basement or stifling attic until it is eventually destroyed. We thought we should take this opportunity to formalize its existence for posterity by preparing an accurate drawing from the actual model, and publishing the project—thus offsetting previous or subsequent suppositions about the design.

Comparing the 54-inch model to the 50-inch size (*Air Trails*, January 1941) as well as the original kit plans, it did not take long to conclude that the larger version was definitely not a pure, proportionally-blown derivative of the 50-inch size. In fact, although the "standoff" appearance of the deteriorating model was strikingly So Long, it was dimensionally different.

The wing was four inches longer, but the chord was slightly wider, with the wingtip outline considerably different than that of the 50-inch kit model. The most obvious visual difference was the substantially enlarged stabilizer; other dimensional differences indicated that the designer may have felt that the 50-inch version was somewhat lacking in that department. This fact was apparently overlooked in all previous word-of-mouth descriptions of the So Long 54.

The fuselage was a little over 1½ inches longer, and although it appeared to be quite similar in side view, the actual side view outline was in no way proportionate to the original. It seemed the designer may have been lacking simple drafting skills to proportionally enlarge the model, or he simply chose to take the standoff approach, using a rubber ruler instead.

Although the model was designed to encompass a Forster .29, I found the actual engine compartment was a very snug fit for the subject engine. As I see it, a slanted venturi tube would be a requirement; however, it is also feasible to assume that some revisions in the engine mount area could have been made by subsequent possessors of the actual model.

There are also indications that the model may have been flown with a glow plug engine. At any rate, all else would indicate that the original construction is intact. Forsters were originally produced with slant-type intakes, and the longer flared-tube intakes came later, as did metal fuel tanks and ball-bearing versions.

Other than some differences in wood sizes, construction of the 54-inch model seems nearly identical to the kitted 50-inch size, so let us begin by discussing the wing.

You may need to have a balsa stripper handy, as a couple of strip items are nonstandard, such as the main spar and



Mitch Post (left) built a 54-inch So Long some ten years ago; Bill Hale (right) holds his 50-inch version.

tapered trailing edge.

I thought that the builder of the old model had used standard ¼ x 1 trailing-edge stock, which could have been made ⅛ narrower by sanding from a recovering job; but since the 50-inch model also called for a nonstandard ¼ x ⅞ strip from which the taper was to be carved, I decided to just record what I could see, and hold back my suppositions. Maybe standard tapered trailing edge stock was not all that available in 1940. Whatever...

Anyway, the front of the TE gets jacked up ⅓ as it is pinned to the plans on the building board. The main spar, at ⅛ x ⅝, is another nonstandard item, so your balsa stripper comes in handy here, too. This spar is pinned in place after it is trimmed for the proper polyhedral angle. I would not attempt to add the ⅛ x ⅜ rear spar until the wing assembly is removed from the plans, since it is not pinned directly to the plans, but is flush with the rib undercamber.

Wingtip parts are cut from ¼-inch sheet. Fabricate these, directly over the plans, then remove and trim properly to fit the ⅜-³/₁₆-square LE and fit snugly into the slots of ribs W2 and W3. All wing ribs are ⅜ sheet, and are cemented in place after the main spar and TE are pinned to the

plans. The prefabricated tip outlines are assembled next, and finally the ⅜-³/₁₆-square LE. Upon removal of the panel sections from the plans, the rear spar can be assembled.

Wing sections may now be joined tip-to-inner-panels, first making sure the 2¹¹/₁₆ polyhedral angle is honored, followed by the two wing halves with 2¼ inches dihedral, measured at the polyhedral joints. Cut the proper notches in the bottom of the centerline rib to receive dihedral braces WA and WB, and complete the wing assembly by cementing the appropriate gussets in place.

It's now time for some sandpaper and elbow grease, and selection of an appropriate covering material. I regard the overall wing construction as relatively weak, so I recommend silk or a sturdy silkspan, with a nitrate-dope finish. Films usually add little towards rigidity, so pass them up for this model.

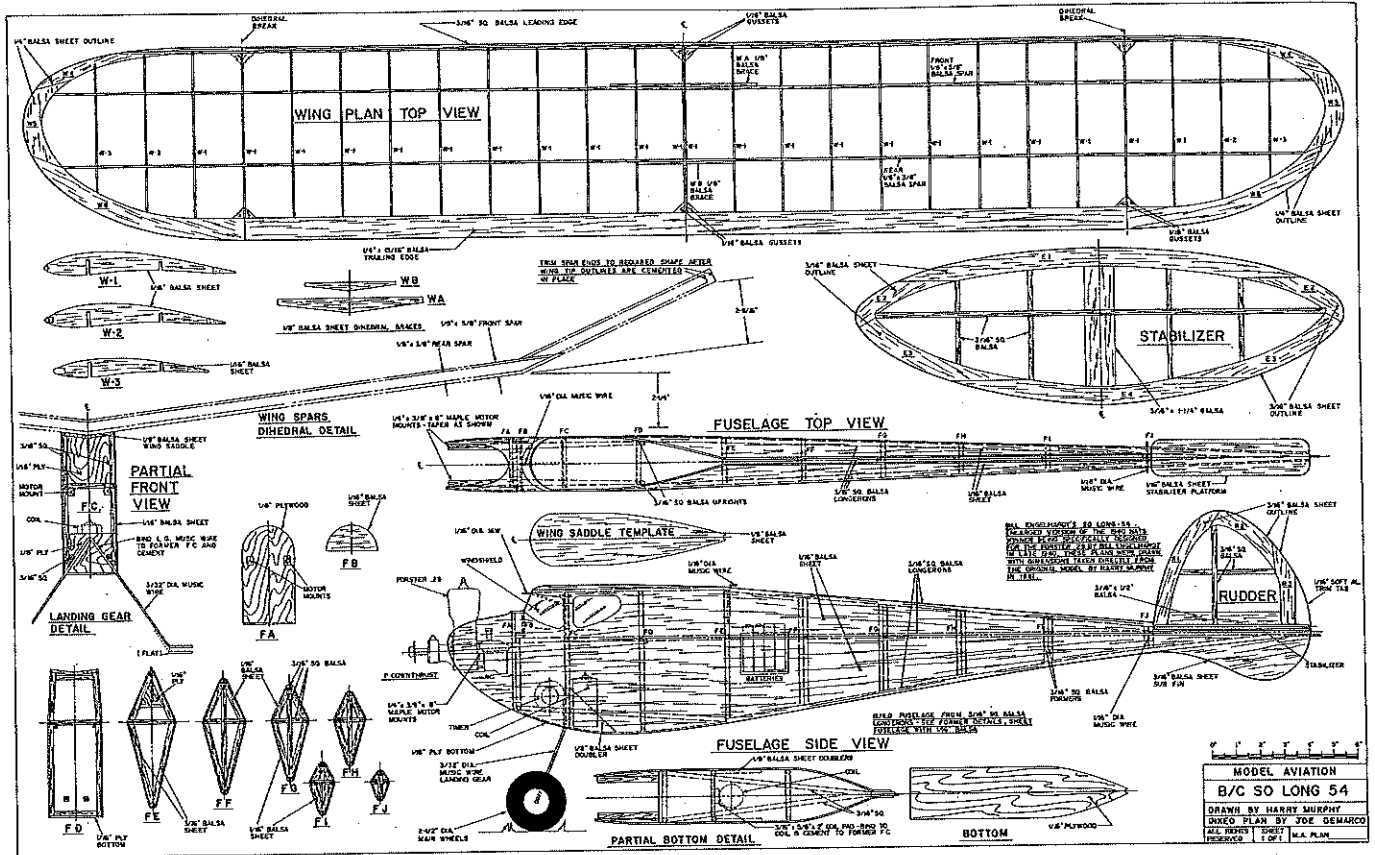
The horizontal stabilizer uses the construction of the 50-inch model, but is noticeably larger. All wood sizes are ⅜ (sheet or square), and it's just a matter of cutting out the contoured parts and cementing them together over the plans. The vertical fin is fabricated similarly, but note the ⅜ sheet soft aluminum trim tab. Once again, it is sandpaper and covering-selection time.

The fuselage is built upside-down over the top view of the plans. Construct the ⅜-³/₁₆-square longitudinal thrustline crutch, then add the fabricated two-piece bottom wishbone formers FE through FJ, which in turn are built over the plans.

If these fabricated formers are glued together using a good cyanocrylate (CyA), they should retain their assembled shape quite well until they are cemented in place on the crutch. This also applies to the three-piece rectangular formers FC and FD. Note: FC incorporates a ⅜ plywood landing gear mounting plate. The formed ⅜ diameter LG should be securely bound to the ⅜ plywood plate by drilling holes alongside the wire at a number of locations, and securing it with strong fishline and cement.

The ⅜-³/₁₆-square bottom keel is now added across the peaks of the triangular-shaped formers toward the rear. The forward bottom is ⅜ plywood, which locates between FA and FE.

I soaked the properly cut bottom plywood sheet in warm water for a couple of hours, then formed it around the sides of a large bucket to get the rocker-shaped piece to comply pretty well to the desired curvature. I then wrapped an old belt around the bucket to retain the plywood, and used a heat gun to thoroughly dry it.



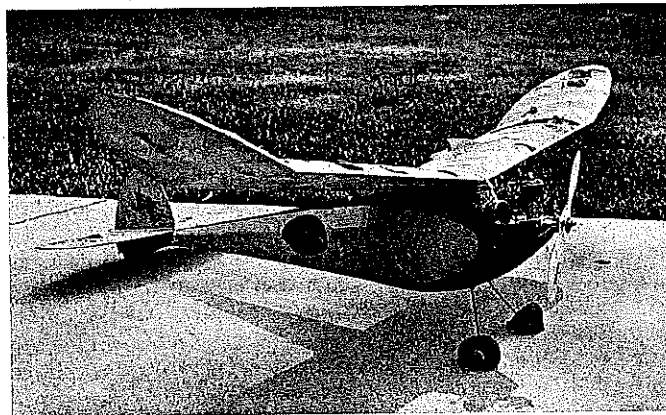
This preforming effort greatly facilitated assembly of the stiff plywood sheet in its proper location.

The assembly can now be removed from the plans, and the top portion of each former station may be cemented in place, followed by the 3/16-square backbone atop the formers, between stations FE and FJ. Next add the wing saddle with proper dihedral angle built in.

The 1/8 plywood firewall (FA) is next, and the LG former reinforcement doublers of 1/8 sheet can follow. Don't forget the vertical strips of 3/16 square that span the space between the keel and the backbone at stations FF through FJ. Add the instrument panel former FB, the wing hooks, and assemble the hardwood motor mounts through the slots in FA, noting the 1° downthrust.

You should now have a rather sturdy skeleton, ready to mount your engine, add your ignition paraphernalia, and ultimately add the 1/16 sheet balsa skin. I suggest that the coil, timer, and wiring be installed at this point—sans battery location—then plank the bottom half of the fuselage and complete the engine cowling area.

You may wish to temporarily assemble the engine (with prop), wheels, and the completed stab to



The original 54-inch So Long was tired-looking when these photos were taken over a decade ago. Note vintage deflated M&M air wheels.

determine the approximate location of the flight batteries for the model to balance at 50% of the wing chord. Once the battery location is established, the top half of the fuselage can be planked with battery-hatch provisions being incorporated.

Sand the fuselage to a smooth finish, adding the 1/16 sheet balsa stab platform and celluloid windscreens. Seal the balsa skin with sanding sealer, add an appropriate number of coats of nitrate dope, and cover with silk or silkspan.

Recommended flight pattern is a right climb and right-hand glide. Do not expect the So Long 54 to respond under power with the squirrely climb of the 50-inch size; the larger stab makes this model more orthodox in behavior under power and more stable in the glide.

With this printing, another oldie is properly documented and reincarnated. We thank Bob Larsh, Milt Burley, the late Louie Levine, and all the others who helped preserve the actual model until the design could be forever preserved.

We hope this article will lay to rest all the mysteries and suppositions regarding the fabled Englehardt B/C So Long. Better yet, we may now enjoy it once again. →

B/C So Long

Type: FF Old-Timer

Wingspan: 54 inches

Engine size/type: Forster .29 ignition

Flying weight: 8 oz./sq. ft. wing area (projected)

Construction: Built-up

Covering/finish: Silk or silkspan/nitrate dope