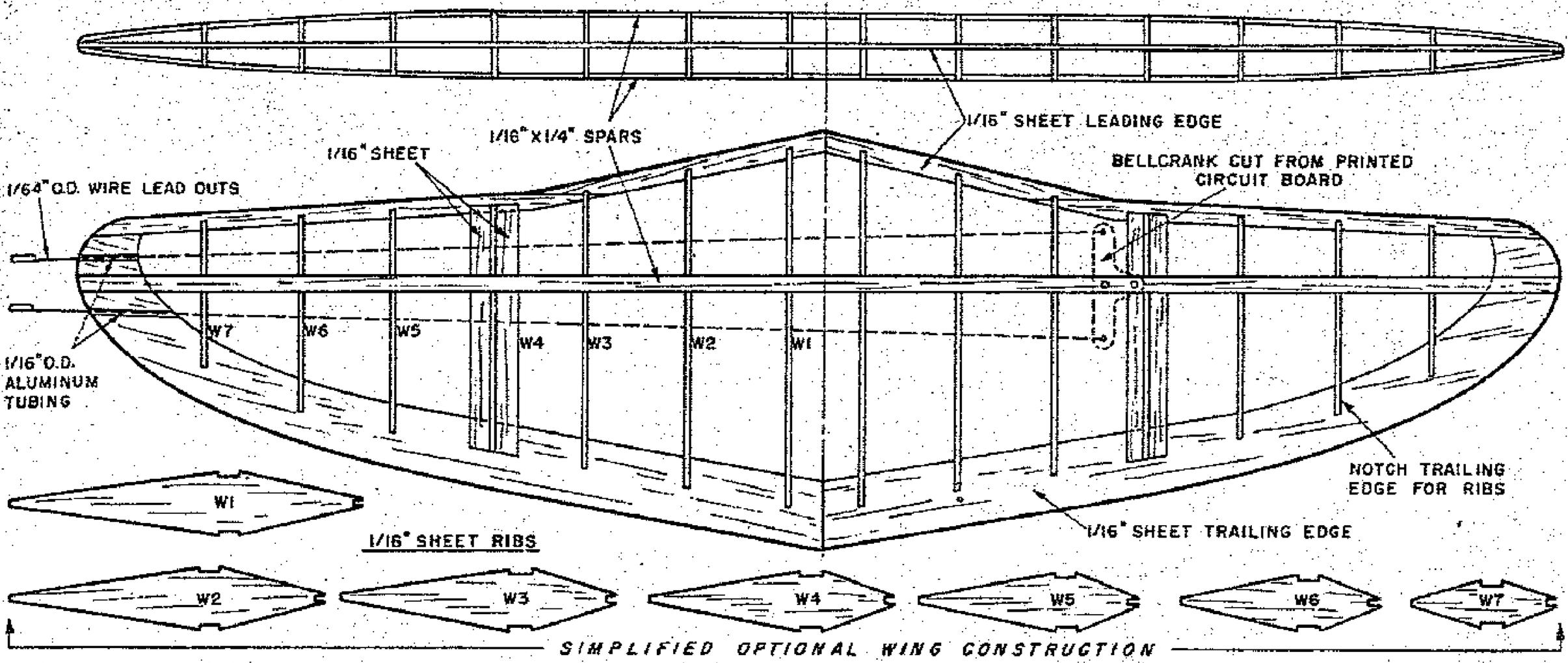
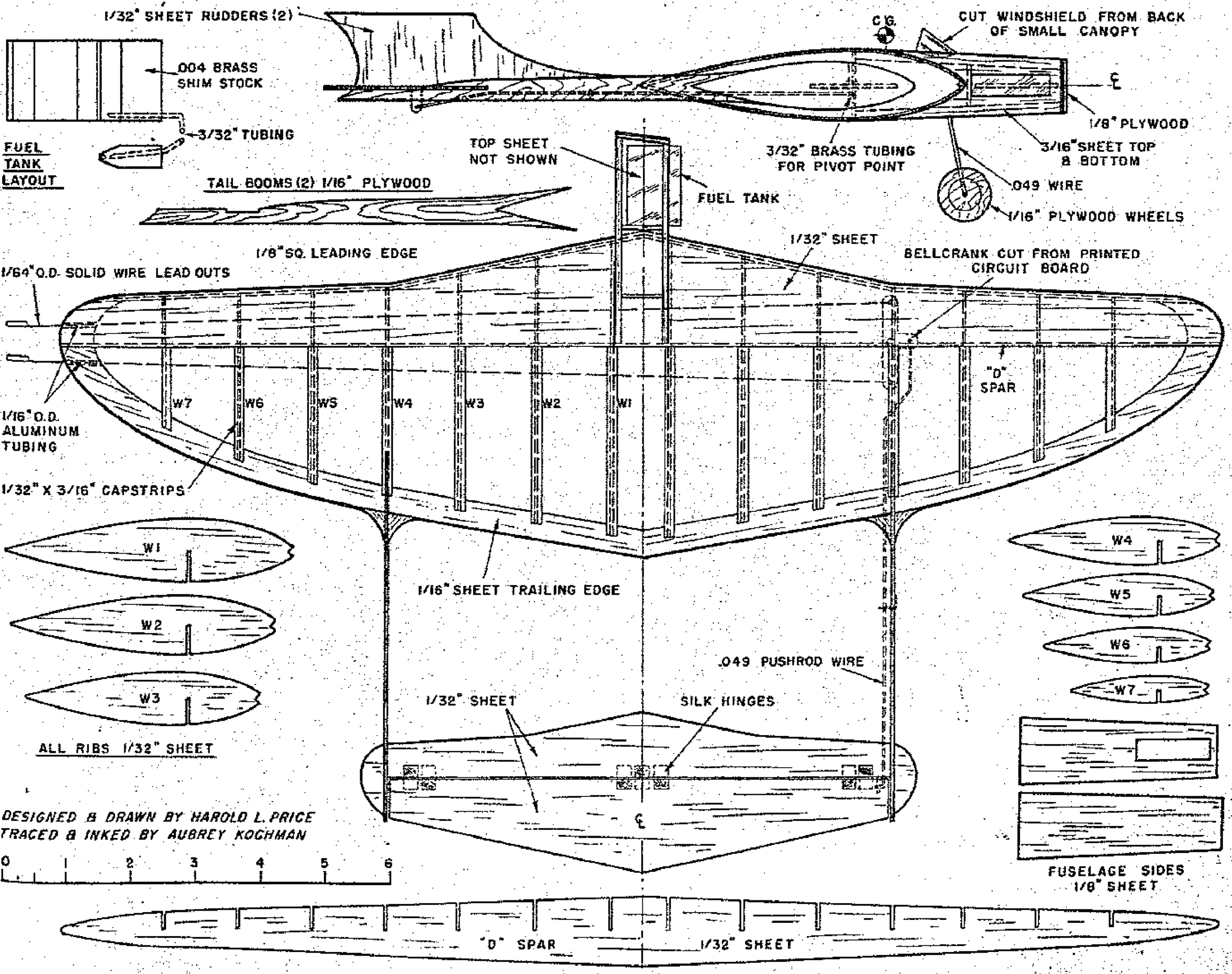
Full size working drawings for Lil Stingray are available as part of Hobby Helpers' Group Plan #1264





DESIGNED & DRAWN BY HAROLD L. PRICE
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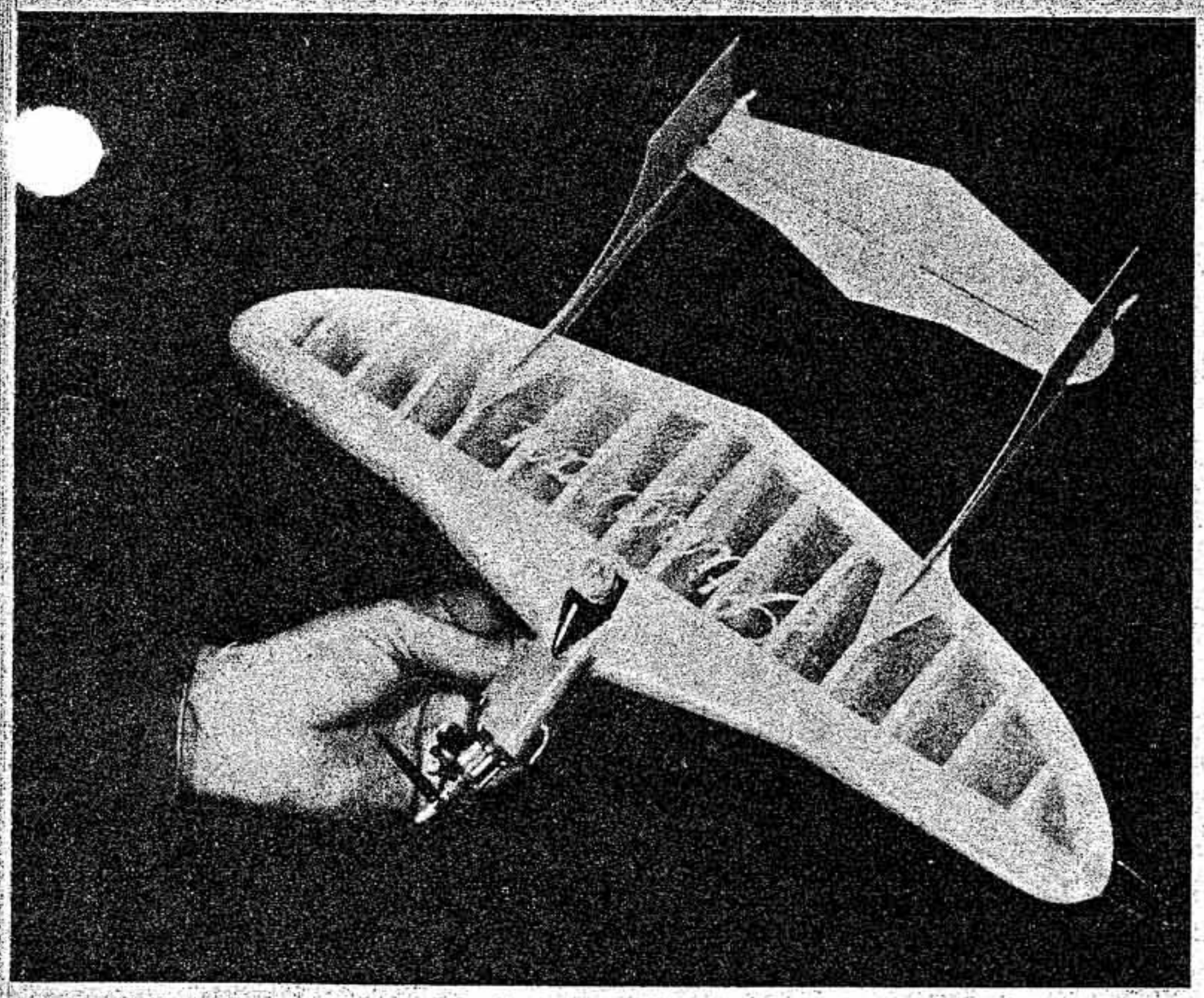

Cox standard tank is replaced by a Price special; wringing wet job weighs in at .75-oz.

This tiny mite is the first true full-stunt Ukie for indoor flying. Goes like crazy outdoors, too! Younger types with fast reflexes are invited to try the diamond airfoil; older "experts" better stick to the slower, quieter symmetrical section.

Lil Stingray

BY HAROLD L. PRICE

Engine research has advanced over the past years by leaps and bounds and one of the hottest successes in the tiny engine field continues to offer a real challenge to the modeler. For a comparatively small amount of change he can buy the hottest motor in the business. Them's my sentiments and I'll stick by 'em, partner.

My immediate original reaction on seeing Mr. Cox' .010 was to buy one. I really didn't need the engine, but building a control line stunt model small enough to fly indoors at last seemed entirely possible with this engine. Of course, at the time I didn't envision also using the engine as a pump in the Crusader, that idea hadn't hatched as yet.

The first engine was broken in and installed in one of the available kit R/C jobs. As the engine loosened up it became more difficult to handle the controls of the job. About that time we laid aside the radio project and drew up a set of plans for something that would use this tiny tiger's power in a more familiar way. What I wanted was a Ukie design that would do a portion of the pattern on 10 foot lines! The original Lil Stingray was designed with a diamond airfoil which was so popular in combat. This offered great simplicity and took the minimum amount of building time. The engine's tank was stripped off and a regular stunt tank was laid out on .004 brass shim stock. Jap tissue for the lightest serviceable covering job with two coats of clear to seal the paper and the model was finished. The complete whiz-wagon came to just 50 grams (¾ ounce).

The first test flite on 10 foot lines made the pilot look like a whirling dervish — proving the model had to have at least 20 foot lines to allow your feet to keep up with your orbit. A set of .004 steel lines proved just right on this job giving you time to move and yet not loading the model down with line drag. The fact that the model will go through a complete wingover is something to raise your hair.

A second edition of the original was built by a 16 year old buddy using some scraps from an old kit. Construction of the original had been with selected contest balsa. When his also came out at 50 grams he was a very happy boy. And did I get a ribbing over that!

Every stunt flyer who has flown the original has been impressed by the maneuverability of the mite. One windy day we tried outdoor wind flying the model on those 20 foot lines (that's with engine dead). After a snappy launch I whipped it through 35 consecutive horizontal 8's, only to be stopped when the "up" line snapped and the model dove in. My only criticism of the model was that even on 20 feet of wire it was still a screecher. That highly efficient diamond airfoil was just too streamlined. So how about a full symmetrical airfoil with a 20% thickness along the same lines as a larger size stunt job?

Here is when the fun began, since what I wanted was a D-tube wing 18 inches long built of 1/32" sheet balsa. Of course, laying out the ribs was no problem after so many Valkyrie's and in no time the new wing plans were drawn . . . the only actual model changes being wing airfoil, a landing gear and a fancy masking job. All that extra jazz overcame the weight saving in the wing, but this was nothing to worry about, the idea was to slow up the model in the first place. I was sure it would fly well, and flight testing of the new design was exceptionally impressive. It would easily turn consecutive loops in a three foot diameter and vertical 8's

Hello, Terry Price! What a pretty jumper you're wearing . . . and we must say that's a pretty cute control line stunter, too.

were no problem on a calm day. The first overhead 8's were a real surprise. I tried squares, but with my aging reflexes they were impossible.

The important development step that came out of this little peanut is the wing design. What stunt job couldn't use a stab that instead of the usual 3 or 4-oz weighed less than ½-oz? If we can modernize just one part of the basic model it will allow us to come up with a new and possibly improved design. Now I can lengthen the tail moment and get away from the short coupled tails so necessary with the heavy stabs presently used. This would also give us the advantage of a true flying tail surface, not just a flat board-like surface.

Construction follows the generally accepted practices. As in any model this small be 100% certain there are no warps in the wing. The diamond airfoil can be bent easily back into proper shape, but a warp in the D-tube wing is permanent.

One word of caution about flying the model. Don't test fly on a windy day under any circumstances. After you are familiar with the model it's easy; just keep the model on the downwind side of the circle.

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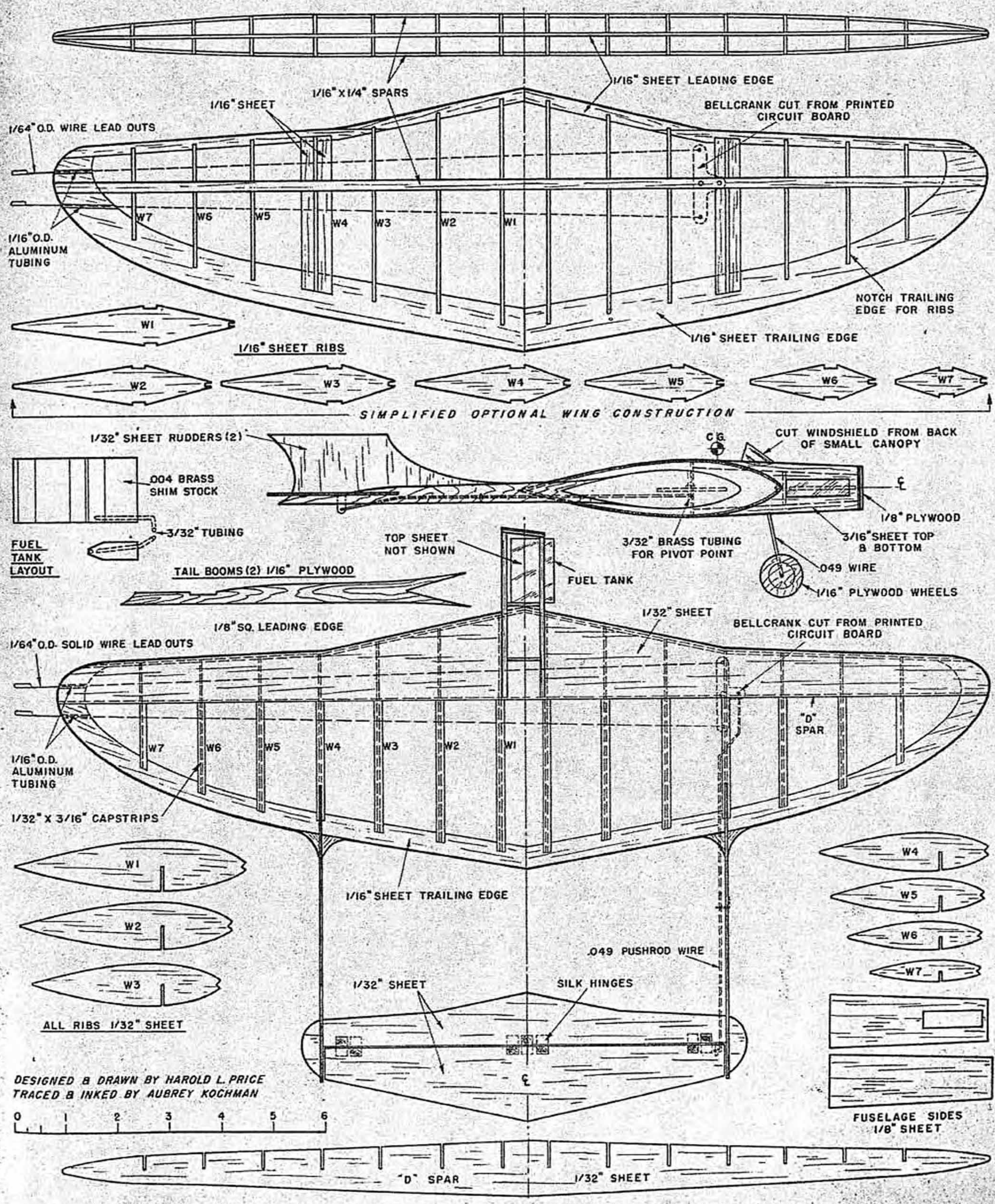

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