

CO₂ BANSHEE

By ED TONER

A new use for those little CO₂ motors . . . Miniature Classic Gassies!! Ed designs 'em and also happens to sell the motors, under the Buzzer Model Airplane Co. label. See the April '81 issue.

• The Banshee is an Irish spook that is said to appear on the eve of the death of a member of an old Irish family. Bean Si, pronounced Ban She, is indeed an "Irish Woman Fairy." The apparition combs her hair, while emitting an eerie wail, and scares the bejaysus out of everyone. All then repair to the local pub and discuss the incident over a few pints as any civilized bunch would be expected to do. For centuries, the Irish were a very superstitious lot, but they are not now . . . they know it's bad luck to be superstitious. So much for Myth-information (harrumph).

McDonnell Aircraft named a fighter, the F2H-3, after the Banshee, probably for the sound emitted by a pair of J-34 engines. Back in 1955, I flew this fine ship for about 3 years, and loved it.

Leon Shulman, in 1941, named a radical new design of his after it, probably because of the scream emitted by a wide open Bantam .19. Just look at the lines of this design, and tell yourself it is 40 years old! It's one of Shulman's timeless designs, and deserves once



"Ed Toner holding Banshee". This 40% reduction of Leon Shulman's famous design is powered by a Telco Turbotank 3000 CO₂ engine.

again to grace the pages of a magazine. It last appeared in the Oct. '45 *Air Trails* as a 50-inch class A "gassie."

This model is basically a 40% reduction of the original, modified for the new Turbotank 3000 CO₂ engine now available. (See the "Buzzer" advertisement in the April issue). This engine is a very nice piece of work, and is ideally suited for short nose-moment arm designs such as this. It has many scale applications, such as the radial engine WW-I types. A nice feature is the throttle, which sits behind the prop and is adjusted by a spanner provided with the engine. Another nice feature is the integral tank with its rigid loader. The tank does not need an upward tilt, which occasionally can prove troublesome. I forsee a new breed of CO₂ endurance ships using this engine in a rolled tube fuselage with low pylon and the basic Jetex 150 surfaces.

There were a few deviations from "scale", a necessity. The firewall had to be widened, a few ribs eliminated, etc., but it's still your basic Banshee. Before

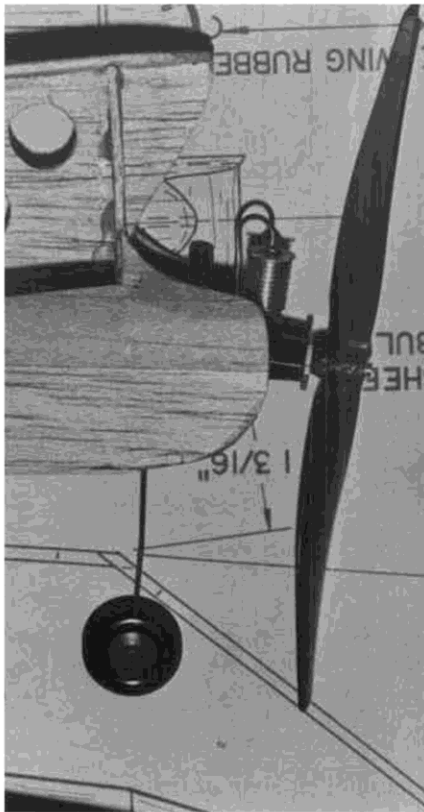
going any further, I would like to acknowledge the assistance rendered by my friend Ray Borden, who both drew the plan, and ironed out a few sticky wickets in the engineering of it all.

This model is dedicated to all you balsa slicers and glue daubers out there. It builds fast, and it's fun to build. After trying all those exotic concoctions to hold balsa-to-balsa, I'm back to that greasy kid stuff, Ambroid.

Let's get building. I suggest you start with the firewall. Clamp a piece of 3/32 plywood between two scraps of soft pine scrap lumber, and carefully bore an 11/16th hole in it using an old fashioned brace and bit, and boring very slowly with a sharp 11/16th bit. Then cut the firewall around the hole with a coping saw, and drill the holes as indicated. The engine mounting holes are just starters for the wood screws used to mount the engine, unless you have the necessary very small bolts for the job. It is a rather tight fit, since the mounting flange of the engine has the holes quite close to the necessary circular opening for the tank.

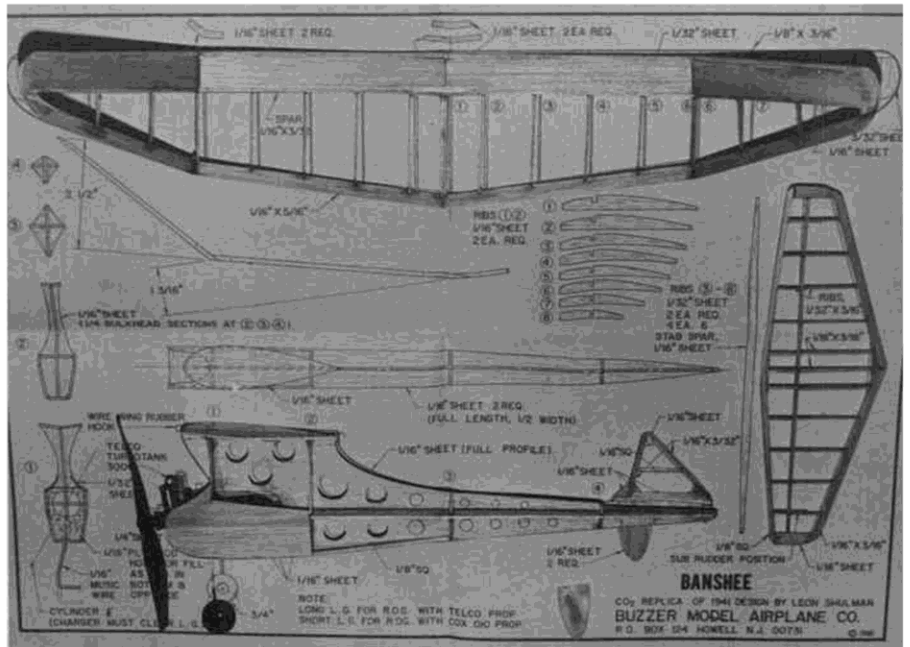


"Banshee holding Ed Toner". Ed flew the Banshee F2H-3 for 3 years in the mid '50's. Now he's an airline captain with TWA.



Downthrust shows clearly in this photo. Anyone have an unused .010?

Note on the front view that the cylinder is upright, but the filler must be canted a bit so that the charger will miss the wheel. This is done simply by backing off a bit on the large slot head at the rear of the tank, twisting the cylinder the necessary amount, and retightening. Use washers to set in the proper amount of downthrust, and mount the motor. Using fine copper wire, sew the landing gear strut, bent as shown, into place and epoxy it. You have now completed the most difficult part of the whole model. A note on the powerplant. It is more powerful than existing engines of its size, but I'm sure a Brown MJ-70 or a shark would do the job, but would probably require less than the 5 degree downthrust shown. Hey, you there!



All structural parts on plan. Little Banshee goes together fast.

Yeah, you with the flannel shirt and a can of beer . . . why are you laying that Cox .010 on the plan? You're not seriously thinking of . . .! EGAD, He is!

Anyway, Shulman popularized this "X" type of fuselage construction. It allows a thin cross section with a rigidity that could not be attained any other way. Slice out the side view, cut away the thin cross section, and cut the lightening holes. Be sure to observe the indentation (dotted line) for the sheeting to be applied later. Now, using the top view, cut both sides as shown. Cement the formers in place, and then epoxy the firewall assembly in place. Before you complete the sheeting and cowl, observe the location of the lubricating hole for the engine, just forward of the CO2 filler. Access to this is necessary every so often. I use one of those hypodermic type oilers with a slightly bent end for the job. Of course, you could always drill a small hole for this purpose.

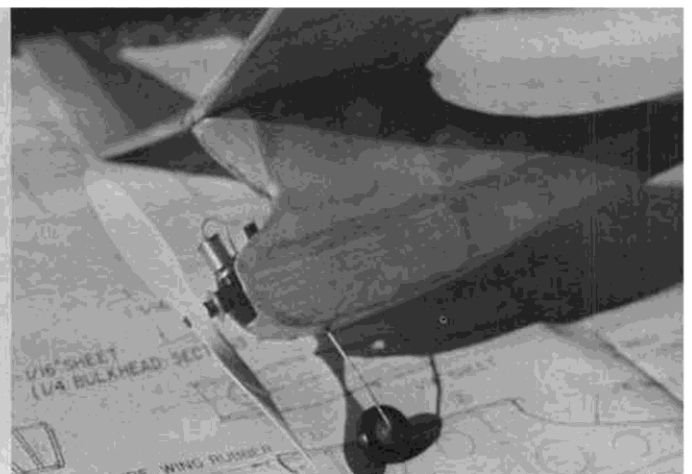
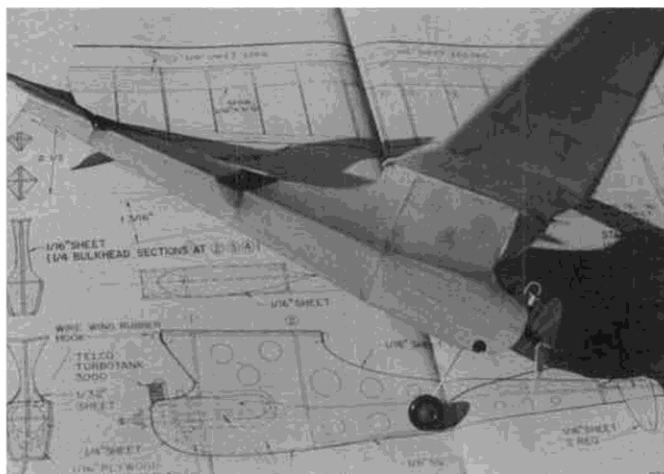
Wing construction is standard. The thin airfoil does not permit a deep spar,

so choose your wood carefully. Build the spar directly over the plan. Empennage construction is self-explanatory. I cemented the tail feathers in place, but you may want to employ a pop-up type dethermalizer, especially that wise guy with the Cox .010 in mind.

I covered the original with colored light silkspan, using the colors of the Irish Tricolor, green, white and orange. A little patience is required to get a smooth job around the compound curve at the front of the pylon. I used well-thinned nitrate dope, and 3 coats were required. Allow 3 days for dope to cure, and watch out for warps.

For flight testing, choose the proverbial grassy field, and always bring along a few spare props, CO2 charger bulbs, some clay for ballast, and a small vial of holy water. Balance as shown, and use the rudder tab to get a slight right turn, and a mushy type glide. The engine can be loaded three ways; a gas charge by

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The finished and covered CO₂ Banshee on the plans. Original ship appeared in the October '45 Air Trails magazine as a 50-inch Class A gassie. Model of model has only minor mods.

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holding the charger upright, a liquid charge by holding it inverted, and a super charge, as per the instructions supplied with the engine. The down-thrust is for a powerful burst of power, wide open, that lasts about 20 seconds. Turn pattern is right, right. I recommend the powerburst for the most "realistic" pattern, and I find that the Hannan-designed prop made by Williams Bros. is better than the one supplied with the engine.

I would appreciate hearing from anyone who builds this ship, and cares to pass on any comments. I will try to answer all correspondence. I'm at 52 Newbury Rd., Howell, NJ 07731. ●