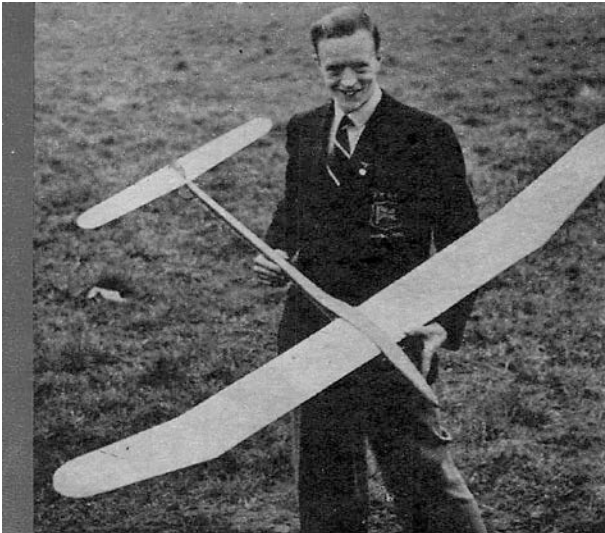
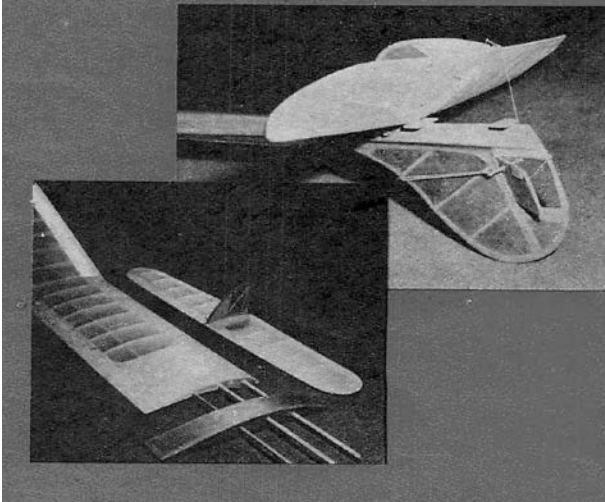


# English A.2 Viking



Bill was a member of last year's British "A.2" team, set up English records previous year. Won numerous F/F meets. Member of West Yorks MAC, 28, married, has 2 children. Wing and stab ribs and fuselage cross sections half size.



## A top British builder and flyer reveals the construction of his Nordic tow-liner by Bill Farrance.

Viking was designed for the A.2 contests and based largely on experience gained at both British meetings and the '52 A.2 World Championships in Austria. My last year's model turned in a regular still air 3 3/4 minutes, but this new design is good for a full 4 minutes from a 328 ft. towline.

It differs from its predecessor in having more of the total surface area concentrated in the wing (440 sq. in. an increase of 65 sq. in.), which calls for a tail moment arm of four wing chords to make the small 80 sq. in. (18%) stabilizer efficient. This is definitely

the type of model needed for the calm air conditions usually aimed for by the A.2 Championship organizers.

Construction is fairly conventional by European standards with two piece wings dowelled into a detachable center section. The fuselage is fully sheeted and a piece of curtain rail is used to make a slide for an adjustable tow hook whilst the wing and stab tips are laminated for strength and lightness. The upper and lower fins originally featured built up construction (as in photos), but proved vulnerable in landings, so were later replaced by ones made from sheet as on the plan.

A straight tow-up is ensured by an auto rudder which remains at neutral as long as the model is on the towline. The tip up stab D/T is fuse operated in the usual way. The wing section is my favorite Odenman (Swedish) type a thin, sharply under cambered airfoil, typical of those favored by most A.2 enthusiasts.

Cover the entire model with lightweight tissue then after water tightening, give the fuselage three coats of dope and the flying surfaces two coats.

Carry out trimming in reasonably calm weather and do not seal the weight box until all your adjustments have been made. Start by hand launching, until you get a straight stalling glide, then position the tow-hook 1/2" in front of the C.G. and try a tow launch. It's best to use a 328 foot line and a short D/T fuse whilst trimming, so that the tip-up stab will operate at a safe height and bring the model down safely. (328 ft. is standard line length allowed for A.2's, but from January 1st, 1954, this will be reduced by half.)

Very little running is needed to get the model going up fast. Correct any tendency to swing from side to side by moving the tow hook back 1/16" at a time until the model straightens up. If you get a swing to one side without any sign of recovery, try counteracting this with opposite trim tab or if this fails, bring the tow hook forward again. With a little practice, a dead overhead launch can be made. When the model is right above you, wait until the nose is swinging into the trimmed turn (or at least facing into wind) before gently casting off. Releasing on the opposite turn should be avoided if possible.

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The best flight trim is just off the stall in a left hand turn. To obtain this, make the model stall by removing weight and then put back just enough to barely flatten out the stall. Alternatively, you can leave the weight alone (and consequently, the tow hook positions), if you vary the wing incidence to obtain this trim. Straightness of tow is determined by finding the correct position of the tow hook in relation to the C.G. Once the tow hook position has been ascertained, this will be the same for both windy and calm conditions. Be prepared to run towards the model if the wind is very strong, since the steep climbing angle throws quite a strain on the wings. Even if the trim is stall free in calm weather, a slight stall may develop in windy conditions, so watch out for this and correct with incidence packing.

## Bill of Materials

*Hard Balsa:* 1 pc. 3/16" x 3" x 36" (wing T.E.). 4 pcs. 1/8" x 3/8" x 36" (wing L.E. and spar). 2 pcs. 1/8" x 3/16" x 36" (wing spar). 1 pc. 1/8" x 1/2" x 8". (tow hook mount). 1 pc. 1/4" x 3" x 6" (nose block).

*Medium Balsa:* 1 pc. 1/8" x 3" x 36" (bulkheads, ribs and fin). 6 pcs. 1/16" x 3" x 36" (fuselage sheeting, ribs and fin). 7 pcs. 3/16" x 3/16" x 36" (longerons and stab L.E.). 4 pcs. 1/32" x 3" x 36" (wing and stab sheeting and tips).

*Remainders:* 1 pc. 1/16" x 6" x 12" plywood (wing ribs). 1 pc. 1/32" x 6" x 12" plywood (wing ribs and dihedral braces). 1 pc. 1/4" dia. x 24" dowel (wing fixing). 1 pc. 3/16" dia. x 24" dowel (wing and stab fixing). 1 pc. 1/8" dia. x 1 1/2" dowel (auto-rudder). 4 sheets lightweight tissue, 1 3/4" of curtain rail and end stop, 1/2 pint clear dope, cement, thread, nose weight.