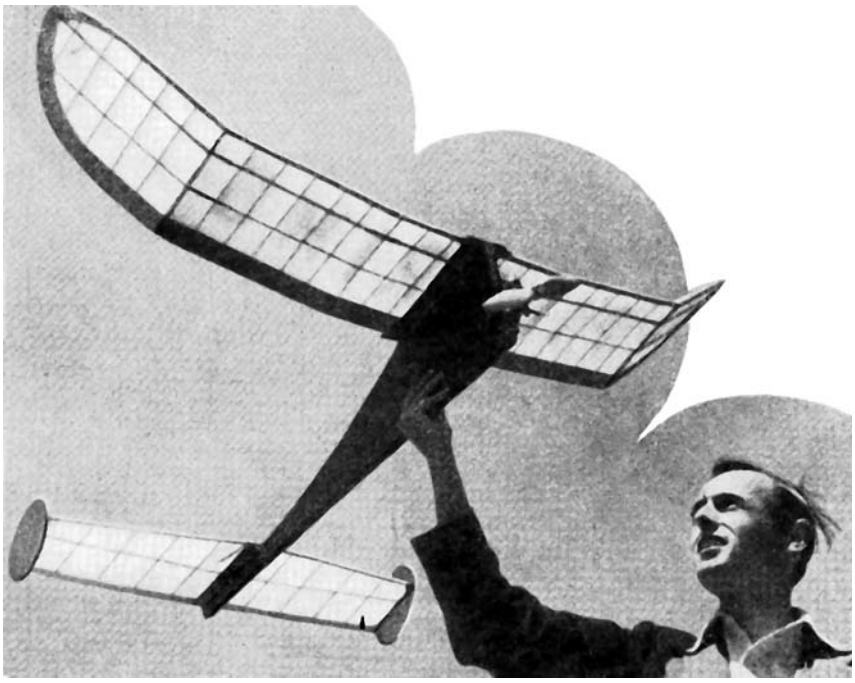
An outstanding Contest Power Model

Available in Three sizes, by well known A.P.S. Designer

VIC SMEED

HELL'S BELLE

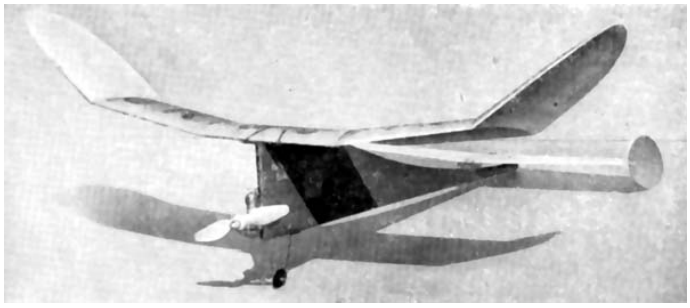


PURISTS, look the other way I Hell's Belle is a strictly functional design in which everything has been sacrificed on the altars of Performance and Durability. With this job, which recognizes no loading or cross-section rules, the fuselage is regarded as merely a means to secure motor, wing and tail in correct relationship, and to provide a little side area here and there. The result is a little short on looks but quite long on fly-ability, and the Belle's slow, stately flight has a peculiar grace of its own. Several models, rejoicing in such names as " Boozer's Gloom", " Flattened Fifth", "Dominant Seventh", etc., went into its development; all these jobs' incorporated the profile or near-profile fuselage, but variations were made in wing and power loadings, sections, wing and motor positions, etc. Performances were good on the whole, but each model had some vice or other—fragility, tricky trimming, and so on—which rendered it unsuitable for contest work. Hell's Belle was designed to incorporate all the lessons learned in two seasons with the earlier models, and features such things as low wing-loading (under 4 ozs. per sq. ft., or about 2.7 ounces. per sq. ft. of total area), low power-loading (7.5 ounces. per c.c.), ruggedness and easy trimming.

The first three flights, carried out on two fairly warm days, produced ratios of approximately 10:1, 18:1 o.o.s., and 35:1 o.o.s. The next few flights were in dead air and were devoted to trying to kill the single stall when the motor cut. The only contest success before the close of the 1950 season was flown in a 30 M.P.H. winds and steady rain; these conditions tested the model's ability to take punishment rather than its flying capabilities, and it tied for first with an average of a rather poor 5:1. A further series of tests in still air produced an average flight total of 1 min. 34 seconds, for an average motor-run of 7 seconds. The flying speed of the Belle is astonishingly slow, both in the glide and under power, although the climb is a tight, vertical spiral. Trimming is easy, and despite the low all-up weight, the job has shown itself capable of taking rougher handling than the average model. The fuselage is almost indestructible.

Construction is conventional except that only one fuselage frame is required, and that almost the whole model is built from quite soft balsa—soft enough to retain easily the imprint of a finger nail (M.H.N. 13 or 14). If a larger motor than the original's Elfin 1.8 is to he used, there is no objection to a slightly harder grade of balsa being employed, although the prototype proved itself adequately strong. Some experience is advisable on the part of prospective builders, and the following notes touch only upon points which might be of assistance to such modelers.

The single fuselage frame should have the motor installation details and the undercarriage tube fitted before any covering is commenced. When the side sheeting (very soft 1/16") is completed, sand smooth, round all corners, and dope on rag or lightweight Modelspan. The wing will be easier to construct if the main-spar is first assembled completely, including dihedral braces; each section can then be pinned down and the panels built one at a time. This obviates the annoying misfits at the dihedral breaks which can occur when completed panels are brought together—quite an item with a five-piece wing. If you cannot obtain softish balsa for the spars,



reduce their width, e.g. use 3/16" x 3/4" main-spars instead of 3/8" x 3/4". Make sure your dihedral joints are sound. The tail is quite straight forward; add the fins and the D.T. attachments after covering. Rag tissue is about the right weight for wing and tail, though again heavyweight Modelspan could be used with 2.5 c.c. engines. Check carefully for warps while the dope is drying.

Trimming should present no difficulty, bearing in mind that the tendency is for the model to turn in, to the right, under power. Using no down or side-thrust (Elfin 1.8), a right spiral climb is obtained by giving LEFT rudder, and due to the slow flying speed and consequent small control effect, this may entail slewing the tail-plane as much as 1" off-centre to the right, measured at the centre rib. This trim gives a glide circle to the left of about 100 ft. diameter. Slight warps can be trimmed out quite easily. If a tight spiral climb cannot be obtained by using rudder, offset the motor to give slight LEFT thrust. Some down and left thrust may be necessary with more powerful motors right from the start. Use the undercarriage only when R.O.G. is called for, but it is a bright idea to use the D.T. all the time. One never knows!

SIZES AND PRICES FOR THE TRIO:—
60" HELL'S BELLE 5/- (Pet 438) 1.8 c.c. to 2.5 c.c.
50" HARPIE 4/- (Pet 439) 1 c.c. to 1-5 cc
40" HUZZIE 3/- (Pet 440) motors up to I c.c. (IDEAL FOR THE "DART')