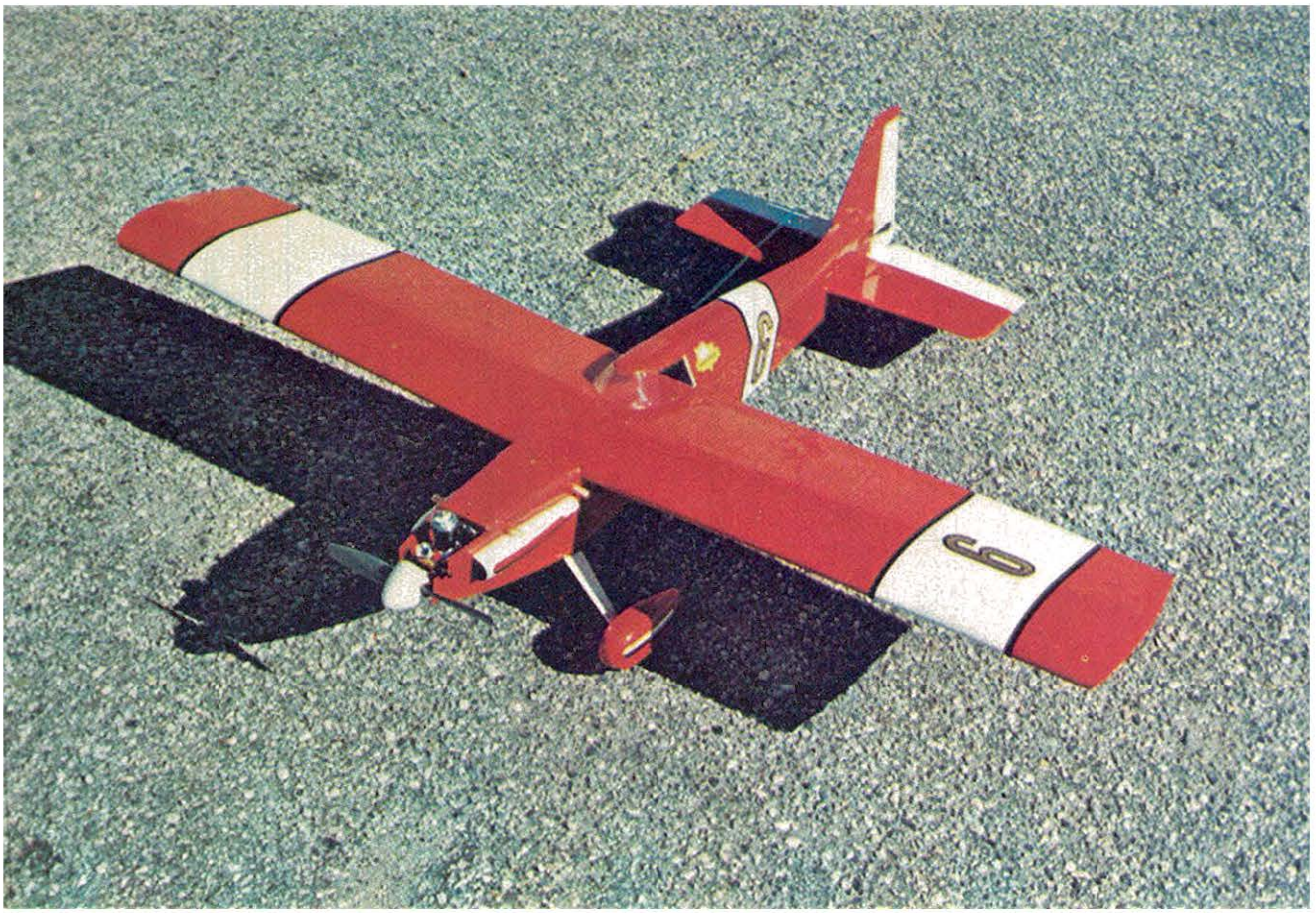


"Nothing in the world . . . not all the armies . . . is so powerful as an idea whose time has come" *Victor Hugo*

THE UPSTART

BY OWEN KAMPEN

FIRST OF THE EXCITING NEW HALF-A-MIDGET RACERS

These words are pinned to the cluttered bulletin board above my office desk and at this moment seem to be most appropriate, for in the few short weeks following the original proposal for a ½A Midget Racing Event, the response has been overwhelming. Preliminary drawings of the Upstart were sent to modelers in various parts of the country and in almost every case the response was one of immediate and enthusiastic support. This was remarkable in view of the lack of response given to earlier attempts by RCM and the author suggesting a similar event. ("Hoosier Hotshot" – RCM 4-67 and "Bonzo" RCM 8-67). But in retrospect, the timing was premature and, as a result, it literally never got off the ground.

For four years, however, the rightness of the concept of an .049 racing event lingered on and was nourished by continuous discussions with Frank Baker, who got tired of trying to fly one man races which he always won and lost by coming in first and last simultaneously!

In the meantime, the hobby was undergoing rapid growth and change. Reliability went up as prices went down and the flying competence of the average modeler rose to new highs.

With the recent introduction of new lightweight two-channel digital equipment, priced below our wildest dreams of a few years ago, the time at last seemed right.

What was needed was a new design to take advantage of the current state-of-the art, and so the Upstart was born. While owing its parentage to the earlier designs, this youngster comes on strong – being smaller, lighter, faster and quicker to put together.

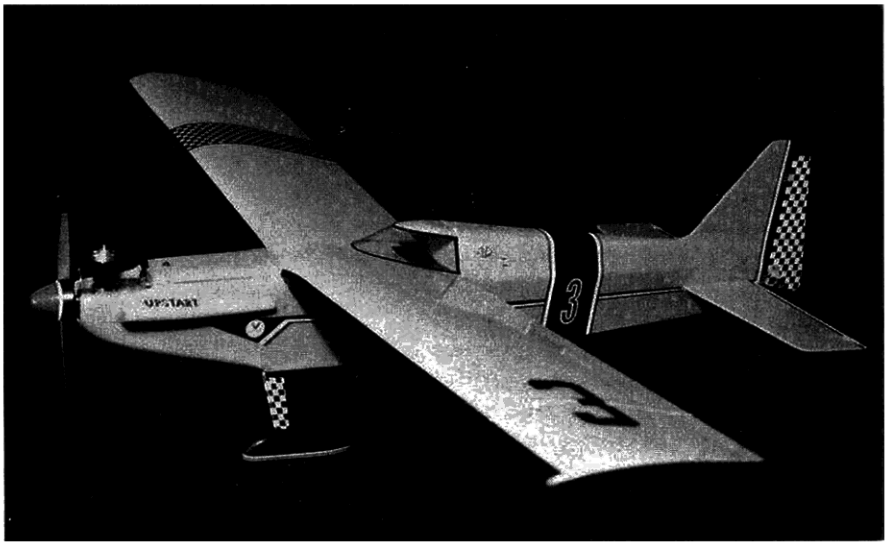
Without getting deeply involved in design philosophy, a few observations can be made regarding some departures from general practice. Five degrees of downthrust is indicated and the reasoning for this is based on past experience with models not utilizing ailerons. In this special case it has been found to be desirable to have about 50% of the rudder area below the thrust line to increase the rate of roll. It was felt that this advantage in the turns would more than compensate for a minor loss of thrust. In any event, this is a builder's option and if you believe a 0°-0°-0° setup is best, go with it. Let's prove out our beliefs on the race course, for this is what it's all about.

The shoulder wing configuration was chosen for ease of hand launching and the inherent stability necessary in a small fast plane. The Ace foam wing has been proven in a half dozen designs to date and offers the obvious advantages of fast building, fast field repairs and excellent flight characteristics at high and low speeds. The latter is a must if we are to achieve optimum lift in the power off glide on approach and landing. (This must be seen to be believed even at up to 18 ounce wing loadings tested.) This is a direct result of airfoil thickness and should not be sacrificed on the altar of speed. The built up balsa option is available for those of you willing to put in some extra hours. It has also been tested and works equally well. The choice is yours.

As the weather in these parts has been hovering around the zero mark and over 20 inches of snow lie round and about, a minimum of flying as been done. Therefore Don Dewey will report in greater detail on his findings in a fairer climate.

It should be emphasized that for those of you who have digital rigs with medium size servos, you are still in the game. My MRC outfit, which falls in this class, weighs in at just about 8 ounces using two servos and 225 m.a.h. batteries. Those possessing the ultra small airborne packs can do even better. Two of the ½A models tested weighed in at 26 ounces and performed beautifully so there is a considerable amount of leeway.

At the time of writing over 40 models are under construction from coast to coast so let's get on with a brief building bit so that you too can get off the bench and become part of the action. No attempt will be made to give you a joint-by-joint account as the



basic construction is about the same as all other basic constructions. A few points are worth mentioning, however, to speed up the operation. My own method of transferring plans to balsa is the pin prick method using a straight edge and french curve to connect the dots on the wood. If nothing else – it saves the plans. The next suggestion is to use the cut-out pieces as patterns for the **second** model. Surely you're not going to settle for just one? Choose your wood wisely for many of you will be using 225 m.a.h. battery packs to reduce weight and tail heaviness is sudden death to a small fast one. Incidentally – for those of you using 2 servos from your 4 channel rig, the smaller batteries will give you plenty of air time because half the number of servos coupled with extremely light flying surface loads greatly reduce battery drain.

Epoxy is heartily recommended around the motor end as well as for the landing gear. Titebond is great for the rest. Silkspan over all balsa parts greatly reduces the time to fill the grain and really helps reduce splitting. Another option will be mentioned when we get to the foam wing which appears to be now.

Rather complete instructions come with the $2.95 Ace foam wings but a quick review may be helpful. An X-Acto razor saw works very nicely for cutting off the slash tips. Be sure the chord line is at right angles to the leading and trailing edges. Then use a steel straight edge to cut back the trailing edge of each section about 3/16" and use Titebond to attach the ¾" T.E. stock. A couple of rubber bands will hold it evenly while drying. To protect the tips, face them with fairly stiff 1/32" sheet balsa and sand to shape. Make sure both tips are slashed equally as this plays an important part in achieving good flying trim. Be sure to use a sanding block for the dihedral joint to keep it square and insure a good butt joint. (Total dihedral can vary between 2½" and 3" measured at the trailing edge.) Then use an ice pick (what's that?) or a nail or pointed punch to prick a dozen or so holes into the butt end of each wing section. A neat, even coating of Devcon 5-Minute Epoxy really does a joining job but be sure to block the wing carefully to the correct angle so that it doesn't move while the glue is setting. Saliva on a finger will smooth out any overflow.

When everything is dry, do a careful sanding job paying particular attention to a smooth, evenly rounded leading edge. **Make sure the wing is balanced.**

Now comes the answer to the problem of finishing raw foam which has plagued the builder of small ships from the moment moulded wings became available. Weight vs. finish has been the past choice and one or the other has had to yield. Now a happy solution has appeared in the form of TopCote from Quick-N-Easy Products. This is a very light and strong mylar type contact covering which really does the job. More than the savings in weight over other heat shrink products, is the fact that it can be doped or painted which makes the stock-piling of a variety of colors unnecessary. Peel it from its paper backing and apply lengthwise in four sections (each half, top and bottom) overlapping at leading and trailing edges. Heat from a small traveling iron or tipping iron is used to bond the covering at the balsa trailing edge and tips. **Do not use a hot iron over the foam – it will melt!** Wrinkles can be smoothed out – a hair dryer will produce mild shrinking and doping will finish the job. A couple of coats sprayed or brushed will produce

a high glossy finish with a weight increase of just a few grams. Try it on the fuselage and tail too! Don used Solarfilm as an excellent low temperature covering and should definitely be considered.

In closing, serious acknowledgement must be made to Frank Baker for his stubborn persistence and belief in the concept and his infectious enthusiasm which led to this designer's decision to try it "one more time". Also to Romie Bukolt for being the first to join the act and his many contributions along the way. Romie has two semi-scale versions of his own which he will soon be sharing with you. So "Over to You" and whether you win or lose – HAVE FUN! □

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