

Launch Speed

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Our final touch is given at launch time, perhaps in the form of a gentle release, or more likely, a send off smacking of an all out heave. Surely both can't be right. Which is correct?

Pundits have added to the confusion by calling for something else: release at proper flying speed with the prevailing wind factored in. For example, if our model flying speed is 10 MPH, and the opposing wind speed is 5 MPH, the launch speed should equal the difference, or 5 MPH.

To quote one such authority (see below), everything "depends on launching the machine at the right speed relative to the air." Unless this is done, the results will vary from the disappointing to the catastrophic.

Is there something to this, or is it just more baloney? I think there is some truth there- but not much.

Consider another specific case. Suppose that 10 MPH model noted above is to be released against a 10 MPH wind. Would it be enough to simply open our hand as a means of release - with no impetus whatever?

It would not. Momentum is a definite part of the stability picture. Release at the right air speed is certainly helpful from the aerodynamic point of view. but does little or nothing for the momentum/inertia aspect.

Early in flight, though correct wing lift (is) important, so is correct tail momentum in setting up a stable climb pattern. What then can be done in cases like the launch against high wind?

We have all learned that launch at too high a speed produces a false zoom; one likely to peter out after a stall. Launch at too low a speed yields the opposite: a drooping dive, likely to hit the ground.

Somewhere in the middle between these undesirable results is the correct launch velocity. It should be maintained no matter what the wind speed may be. Unfortunately, only trial and error will establish this "right" launch velocity. However, once found it will serve for most models that are similar in terms of size and wing loading.

As for variations in wind speed, these are best handled by varying the launch attitude. With the model nosed upwards, it will progressively produce more lift. Use is best made of this feature to increase lift when necessary - for example, when launching into a dead calm. Here we use the same launch velocity previously found best. However, a few degrees more are added to the launch attitude, increasing the wing incidence. The effect is to supply both the necessary lift and launch speed required for a good sendoff.

Given a large opposing wind, we do the opposite - reducing the launch attitude while maintaining the launch velocity

(more or less). Admittedly, I've not pushed this very far. Should I sense a wind speed equal to my model flying speed I simply quit for the day. The issue here is not launch, but turbulence near the trees that define our fields. Such turbulence can be wicked and its effects fatal; I've not been able to find a solution to the turbulence problem.

Fortunately the launch problem is not that difficult, as any mass launch contest clearly demonstrates. Yes, fine judgement is called for, but that's a fair part of the game.