

What makes the KfM3 airfoil a heavy lifter?

Presently, there are no existing theories as to why any of the KfM Airfoils work. It's apparent that they all work on the RC Foamies Scratchbuilt Aircraft, but there is no known explanation other than they all trap a vortex which attaches itself to and becomes part of the airfoil. Thus lift is generated in some yet unknown way.

Here is one theory as to why the KfM3 airfoil is capable of carrying a heavier than usual payload.

With a conventional airfoil, only 25%-35% of the airfoil generates lift beginning at the leading edge and moving back towards the center. This is the area that produces lift. Beyond that point, the airfoil does not provide any further lift.



The KfM3 airfoil, however, contains two steps on the upper surface, one at 50% of the chord and one at 70%-75% of the chord. Both of these steps trap a pocket of rotating air which is moving faster than the air beneath, thus they provide additional lift the entire length of the chord.



This may help to explain why the COG on a KfM3 airfoil needs to be further back and that it is also very forgiving in terms of COG location.



I would like to state that all of this is just conjecture on my part and has not been proven as fact.