

Dragonette

LIGHT, 40-POWERED .8-SIZE DRAGON FLI AT FOUR POUNDS IS A REAL PATTERN CONTENDER WITH JUST THE RIGHT MOMENTUM.



by JERRY PARKER

Dragonette is a very good reason to think small. It seems every serious AMA/FAI pattern ship today uses a 60 engine in an eight-lb. airplane covered with twenty dollars worth of MonoKote (or silk and dope), consumes one gallon of fuel during an average flying day, and has to be disassembled and packed on top of the car in a special stretcher for the ride home. These very reasons prompted me to search for a 3½-lb. airplane, powered by a 40 engine, using an eight-oz. tank, covered for only ten dollars, easily transported (with the wing on) in a VW sedan, and one which will compete with the very best 60 pattern ship.

Phil Kraft's Dragon Fli proved to be just such an airplane when reduced to 8/10 of its full size and the wing and stabilizer construction changed to a lighter built-up type structure.

There is only one way to really appreciate the Dragonette and that is to fly it. For those who choose to build this model, you are in store for a pleasant surprise.

There are no sound reasons why a 40-size airplane cannot perform as well as the 60-size variety provided they both have the same "momentum." How

can a four-lb. airplane have the same momentum as a six-lb. one? Simple! It must fly faster. Momentum is the product of the mass, or weight, of the airplane multiplied by its velocity, i.e., $M=mv$. A four-lb. airplane flying sixty mph and a six-lb. airplane flying at forty mph each have a momentum of 240 lb.-mph. Dragonette not only makes use of this speed compensation, but its design imposes a weight restriction to improve its slow speed characteristics. Three and one half to four and one half lbs. is ideal and easily obtained. Dragon Fli has about seven hundred square inches of wing surface. At seven-lbs., its wing loading is 0.160 oz. per square inch. Dragonette has 450 sq. in. of wing surface, and at four-lbs. its wing loading is only 0.142 oz. per square inch. A five-lb. Formula I racer is higher still at 0.178 oz. per square inch and consequently its stall speed is considerably higher.

I am aware I have ignored many other factors—air foil shapes, drag coefficients, etc.—but I have assumed these factors to be the same for each example. In reality the low drag air foils chosen for Formula I racers characteristically exhibit low lift/high

stall speed properties which make them unstable at slow speeds. This is a necessary compromise for racers if they are to fly fast.

As long as weight and speed are kept in proper perspective, any sound airplane will have good rough air characteristics and acceptably low stall speeds. Dragonette II is powered by a modified K&B 40 (thanks to my good friend Ron Earp) and weighs 4½ lb. The eight-oz. Sullivan SS-8 tank allows a 12 to 15 min. flight time. The plane will apparently climb vertically, from takeoff, for an indefinite period of time. It can be climbed at 45 degrees upright, then inverted using ailerons only to continue along the same straight line without further correction. Vertical rolls, such as Top Hat, are precise as the ailerons do not lose their sensitivity. Perfect horizontal rolls are performed with ailerons only. Pitch maneuvers can be made almost square depending on the sensitivity set into the elevator.

Incidentally, Dragonette I was successfully flown with an unmodified Fox 36XRC during some of its first

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