

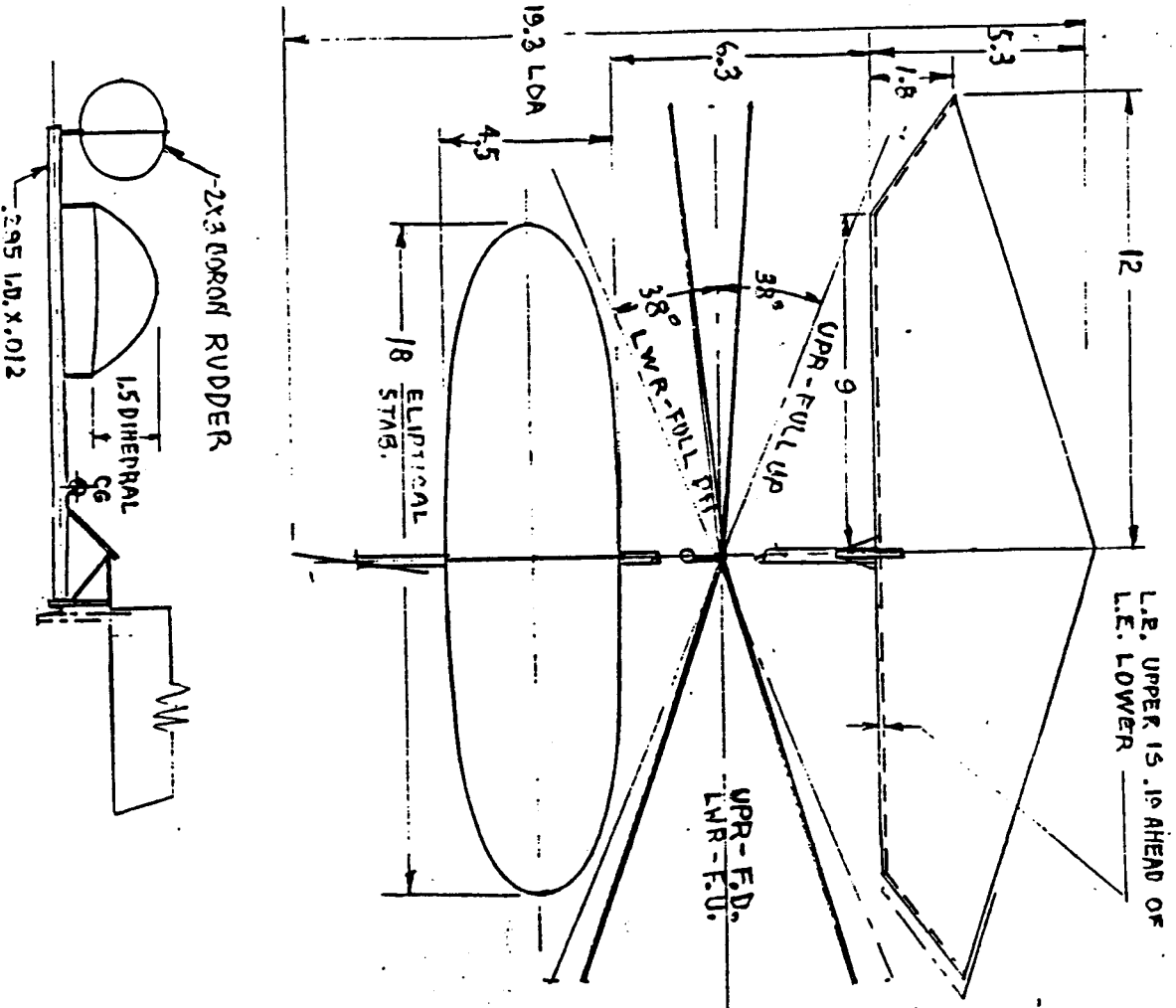
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ROY & SHIRLEY WHITE, EDITORS

FANCY GIRL II is the younger sister of FANCY GIRL I who won the 1985 USIC and set the Cat IV indoor record at the Goodyear Air Dock on 7/6/85. The differences consist of a modified wing planform with a straight trailing edge and a leading edge that is swept back only at the tip. This allows elimination of the wing membrane stiffener. The wing span and area are increased. The stabilizer is moved aft to take an increased share of the gross weight as allowed by the 1986 AMA rules change. The linkage is modified slightly to increase the flap angle to 38 degrees. Finally, a unique joint is built between the motor tube and the wing, linkage and crank assembly which allows adjustment of the wing incidence and transport in a reduced size box. The weight without rubber is reduced to 1.4 gms.

The record flight came on the third attempt shortly after Roy White made a spectacular second flight rescue from the scoreboard. The same motor was used as on previous flights; an 18 inch loop of Pirelli weighing 1.4 gms. (about .063"). The motor was wound to 1500 turns and launch was at near floor level. Initial climb was smooth and not too steep. After about 3 1/2 min., Fancy Girl was cruising just under the beams at a 65 ft. height and still climbing slowly. For the next exciting 2 min. Fancy Girl bounced off the beams four times without hanging up or losing significant altitude. From there on it was a beautifully slow descent touching down at the record 8 min. 26 sec. time.

Frank Kieser



FANCY GIRL IT

CANARD PUSHER ORNITHOPTER
BY FRANK KIESER - 1986

WING AREAS (SQ IN):	
UPPER WING FLAPPING	78.75
LOWER WING FLAPPING	74.25
TOTAL WING FLAPPING	153.00
TOTAL WING FIXED	0
PROJECTED FLAPPING	144.7
153 X COS 19°	144.7
STABILIZER AREA (SQ IN)	63.6
STAB./PROJ. FLAPPING	44 %
WEIGHT - 1.40 GRAMS	
POWER - 10" LOOP 1.4 GM PIRELLI	
COVERING - 1.7u "ULTRAFILM"	
BORON REINFORCEMENT - WING SPAN	
WING SUPPORTS, STAB. FRAME	

ORNITHOPTERS

by Juergen Kortenbach

My fascination for ornithopters was established about four years ago when I first glimpsed pictures of Walt Erbach launching one of his models. I had previously only seen vague sketches of Penaud's flappers in books and the French toy bird models. Unfortunately, lack of knowledge and experience with indoor models kept me from carrying out any experiments of my own, until I became acquainted with the members of the Toronto FAI group a year later. While visiting Joe's Hobby Store in Detroit, I purchased an Indoor Model Supply Flapping Flyer Kit. It is a good starter kit, and provided many interesting flights until the failure of a glue joint. This caused the model to go into self-destruction, with an explosion of balsa sticks and shredded condenser paper spelling the end of my first dabbling into WEIRDNESS.

Through the FAI group's frequent meetings in a local school gym, I became involved in rubber scale and pennyplane and picked up some ideas from the FID flyers that proved to be very handy later (along with Ron William's excellent book). I then found the plans for a Fairy V, a bi-plane tractor (which did roughly 6 1/2 minutes at a Japanese contest), in an issue of Aeromodeller of '83 or '84 vintage. I proceeded to build a heavy (3 1/2 grams) model covered with condenser paper to play around with. Next, I obtained a fascinating and very comprehensive (4 pages) article written by Walt Erbach concerning helpful construction hints. It also contained the plans of his Redbird design which is perhaps the ultimate in the monoplane ornithopter's evolution.

My version, being rather heavy, managed about 2:40. For the 1985 Indoor Champs, I built a 16" Fairy V at .7g, which boasted a flight of 4:42. I kept playing around with it for most of the day until the excessive use of cyano on a repair made a top wing one with the center section. My paper tube bearings were now stuck solid. A hasty repair allowed one official flight but the efficiency was now so poor that a depressing flight of 2 1/2 minutes resulted, landing me in 4th place.

During the winter I experimented with a Frank Kieser inspired canard, but linkage failure doomed this one. During the week before the year's champs, I went on a creativity binge and built 2 ornithopters - a 21" Fairy V and a lightened version of Frank Kieser's winning model from last year. The Fairy V proved too weak in a few spots and blew apart a second time after its first rebuild. Scratch one back up model. After this my nerves were shot, so I put in one or two officials with my canard model, and went off playing with a p-nut speed model to relax.

The canard flew well despite some early trimming problems where it didn't want to climb. I endured bouts of anxiety where I hoped the unbraced motor tube wouldn't break and rejoiced when it didn't. My best flight time was 6:21, putting me in second place with the first motor pulled from the tool box, so its full potential has likely not been seen.