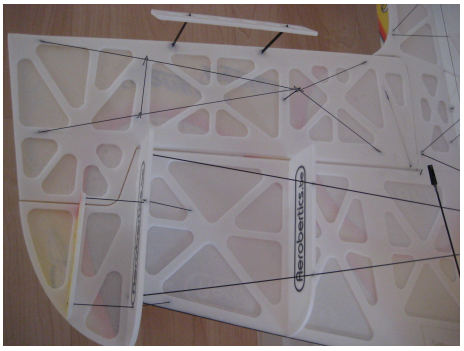
CIAM Flyer
The Introduction to the Modelaircraft World
FAI AEROMODELLING COMMISSION
No. 1-2012

The World of Indoor Flying

At those latitudes where winter is cold and the days are shorter, the indoor season is in full swing. Indoor flying is a relatively new area of aero modelling which has, nevertheless, already found a firm place in the world of model flying. Take, for example, Michel, an experienced indoor aerobatics pilot. Lets have a look over his shoulder

Modern concept

With indoor aerobatics models, the current trend is for symmetric shapes. The two fuselage sections above and below the wings as well as the vertical tail are exactly the same on both sides. The only differences are in the colours and the undercarriage. Most models are made from the foam material "Depron". To save weight, as many parts as possible have cut-outs to reduce their material thickness to a minimum.



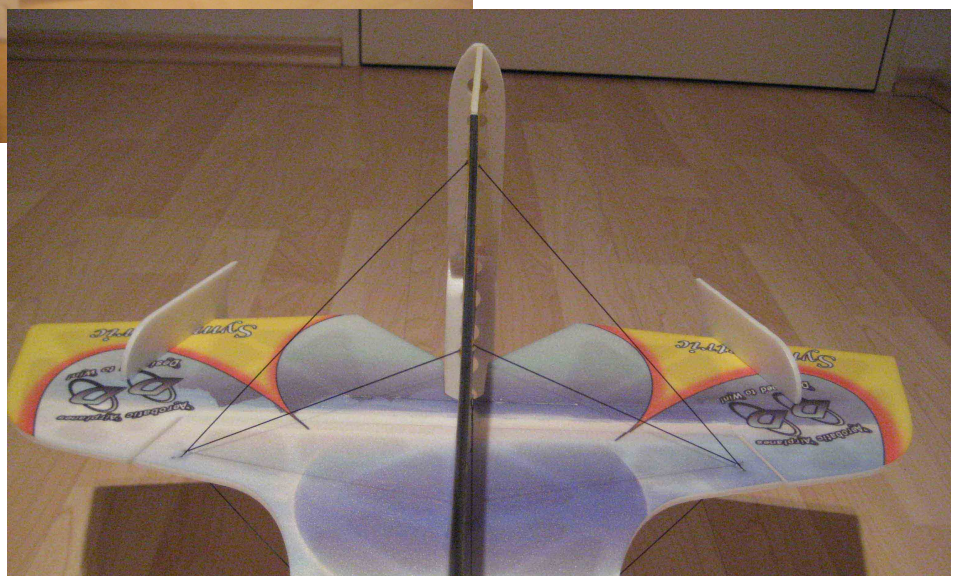
Constant speed

Michel explains that indoor models can be categorised into two groups. One the one hand, there are the agile 3D or even 4D machines with variable pitch propellers that are capable of producing reverse thrust. They can usually be flown with few or even no air brakes.

The second group includes indoor models suitable for precise aerobatics manoeuvres flown at constant speed. On these models, brakes are an option for keeping the flying speed constant and slow while the take-off weight has to be kept to a minimum. This allows the aerobatics manoeuvres to be precisely controlled. Not all brakes are equal. As is often the case, says Michel, benefits can come with a downside. He explains: "I mounted the brakes on the outside third of the ailerons. This keeps them out of the propeller airstream which is important for "torque rolls".

The pictures show the state when flying straight ahead. The attachments above and below the two ailerons have their full braking effect. When the aileron is extended, the effect – as can be seen from the pictures – is reduced. With a fully extended aileron, the braking effect is virtually zero as the "Depron"

The desired effect of these stabilisers is determined by their size and angle. Their position also plays a part. Michel explains that when searching for the optimum, he cuts out several stabilisers and then tries them out indoors. First he flies without stabilisers, then successively attaches the prepared parts at different locations on the model to achieve overall trim. A great example of practical research and innovation using modest resources.



part faces the direction of travel. Thus, the brake is only effective when it is required. If the brakes are simply attached to the end of the aileron, as can be seen so often, they are effective, even when the aileron is extended. This can have a negative effect when executing roll manoeuvres.

Stabilisers and trim

The purpose of stabilisers is to guide the aircraft in the air. They should help the model to achieve a stable flight attitude and to be easily controllable. Stabilisers can be mounted, for example, on the vertical tail or on the elevator as well as near the leading edge of the wings or on top of the fuselage.

FAI R/C Indoor competition classes:
F3P Indoor R/C Aerobatic Power Model Aircraft
F6B AeroMusicals
Details: www.fai.org/aeromodelling

CIAM Flyer 1-2012

Editor: Emil Ch. Giezendanner
editor@modellflugsport.ch