



## The Silent Spectacle

Heavier than air – but not by much

Flying lightweight model aircraft in large rooms and halls has a long tradition. In the last few years, the use of microelectronics has given indoor flying a new dimension.

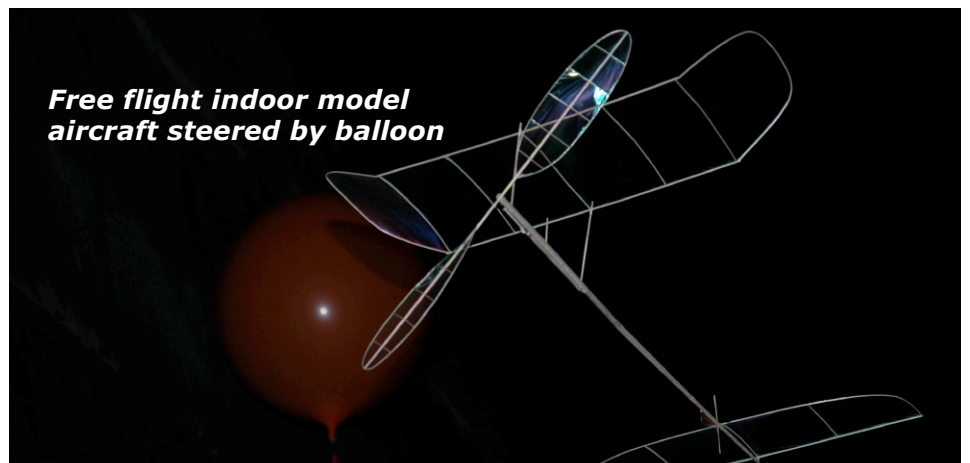
### Indoor flying World Championships

Indoor Free Flight World Championships have been held under the patronage of FAI since many years. These very delicate structures weigh only around 2 g. The small model aeroplanes are driven by a rubber band motor – the oldest form of propulsion for model aircraft. The propulsion energy is stored in a rubber band twisted by a certain number of turns. The wingspan of these lightest of aircraft is between 550 and 650 mm and in larger halls they achieve flying times of 20 to 30 minutes and more.

Ingenious designs provide for automatic turn control and compensation of propeller torque. These free flight indoor models are steered using balloons or telescopic rods to ensure they don't get caught on walls or obstacles.

*Flight of the World Champion  
Gernot Bruckmann at  
2015 FAI F3P World  
Championship for Indoor  
Aerobatic Model Aircraft in  
Pruszków, Poland*

### Free flight indoor model aircraft steered by balloon



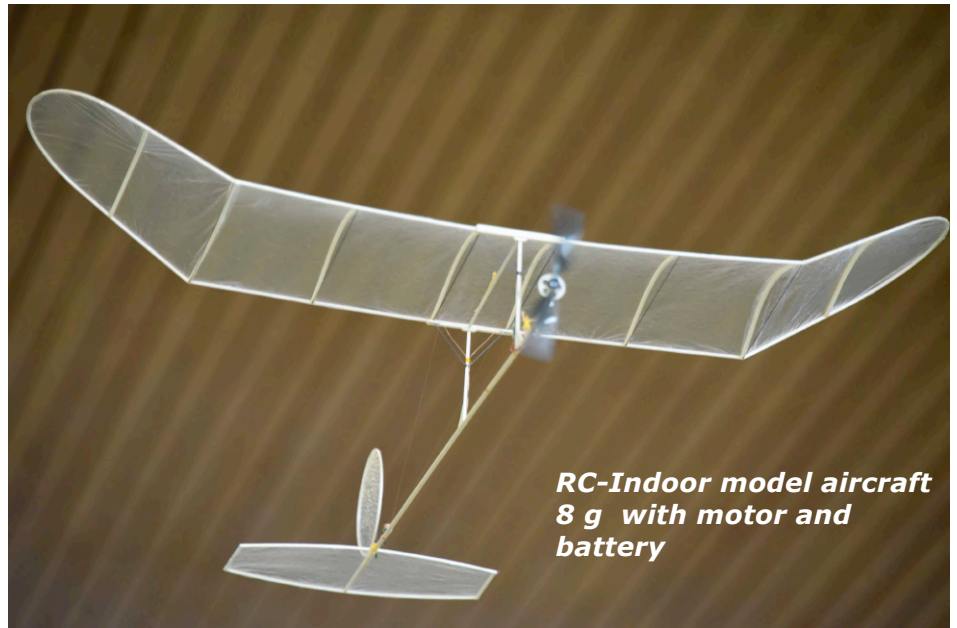
## The advent of radio controllers

The desire to control lightweight indoor models without any direct mechanical intervention was inevitable. There have been a variety of interesting attempts to this end and the first successful indoor flights with a lightweight model powered by an electric motor and weighing only 78 g were achieved by Fred Militky in the late 1950s. In the last ten years or so, the design and construction of ultra-lightweight electric models have experienced a real boom. Microelectronics and state-of-the-art materials have accelerated this development. The smallest radio-controlled electric flight models of less than 10 g are mostly flown in larger rooms and halls or, in absolutely calm conditions, even outdoors.



## FAI Indoor Aerobatic World Championships

Since 2013, there have also been FAI World Championships for indoor aerobatics. In only a very few years, there has been



*RC-Indoor model aircraft  
8 g with motor and  
battery*

an astonishing development in this category – both in terms of design and flying skills. The sophisticated aerobatics routines are customised for indoor flying but the requirements are just as tough as those of conventional outdoor aerobatics. The routine consists of eleven manoeuvres that have to be completed within 5 minutes in front of the jury. For World Championships, large indoor sports arenas are

a requirement. This year's World Championships in Poland were held in the Bruszkow Cycling arena which provided excellent sporting conditions. 55 competitors – 11 of those juniors – competed for the coveted title. Considering the high level of perfection of flights, it is hard to imagine what could be even better in future. Continuing developments in technology are to be expected.

### Contra-rotating system for indoor aerobatic model aircraft



*Modern indoor aerobatic  
model aircraft of the  
successful team of Finland*