

## Public Letter 5/08

September/October 2008

[www.fai.org/aeromodelling/ciamflyer](http://www.fai.org/aeromodelling/ciamflyer)

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## Those Daring Young Men with their Racing Planes



Don't give up, don't let your concentration lapse and keep your hands steady. It's all over in a minute and you're looking for somewhere to land your plane. The other two pylon racers are also circling with stopped propellers and finally glide in to land.

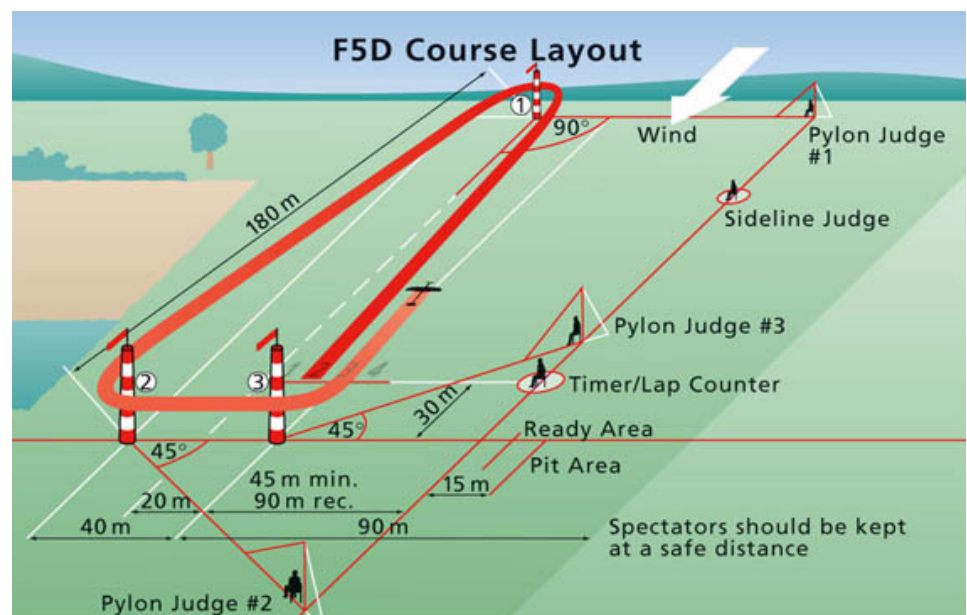
### Electric Pylon Racing – not for the Faint-Hearted

Recently, the world championships for radio controlled electric model aircraft were held in Kiev, Ukraine. These world championships are always held for two different categories: electric glider models and electric pylon racing models (F5D). Here, we will take a look over the pylon racing pilot's shoulder.

#### Pure Race Atmosphere

If you want to fly in electric pylon races, you need not only lightning reflexes but, above all, nerves of steel. Your model, along with other planes, will be racing around three posts – the pylons – at the speed of a Formula 1 racing car and fighting for every metre and every tenth of a second. Your helper – called "caller?" – shouts at you to

"turn!". You turn your model around abruptly and fly it around pylons two and three around you. One of your two co-competitors is flying beside you just a hair's breadth away and passes you. When turning at the top pylon you catch him again, but he remains close on your heels...



**Electric Pylon Racing as a Reflection of the Development of Electric Drives**

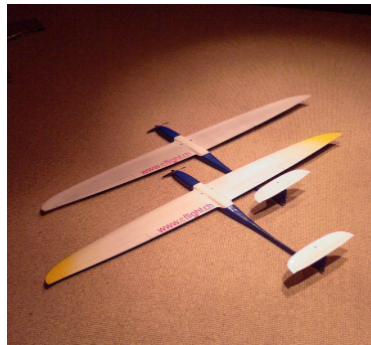
Pylon races with electric flight models were already being held as long as 20 years ago. The planes were initially quite large and equipped with landing gear which almost completely restricted races to sites with surfaced runways. The development of smaller and lighter motors and batteries produced the trend towards actual miniature racing planes. The landing gear was done away with and planes launched by hand.



That made pylon racing models easier to build, cheaper and also easier to transport. In addition, races can be held on any grassy field. The generation of brushless motors and even better batteries produced planes that were extremely fast and, due to their small size, more difficult to steer. There were frequent crashes, even as early as in the take-off phase. The International Association (FAI) made safety improvements for these races in two steps: firstly, model planes were required to be larger again and secondly, the amount of energy that may be consumed for the ten circuits was limited.

**Nearly 300 Kilometres per Hour**

The planes race around a triangular course with a circumference of 400 m. That adds up to a theoretical four kilometres that are flown in as little as 60 seconds, corresponding to a speed of 240 km/h. As the planes travel a longer distance, however, speeds are even higher. Competitors start in groups of three. Pilots are assisted by helpers/callers who hand-launch the planes in quick succession. Whoever is fastest around the 10 circuits has won. If a plane doesn't fly around the triangular course correctly – the cracks call this "cut" – 10% are added to the pilot's time. Two "cuts" in one round are penalised with 200 points. A race is made up of nine or more rounds.



**Daniel Mayr, Austria  
Electric Pylon Racing  
World Champion 2008**



**Electric pylon racing motors**

**The Planes**

Today, pylon racing model planes – or rather racing machines – are mostly made from fibre reinforced plastic and weigh at least one kilogramme. The rules also stipulate that wing loading may be no more than 65 g/dm<sup>2</sup>. This means that there may be no more than 65 grammes of weight for each square decemeter (= 10 x 10 cm) of wing and elevator surface. Taken with the prescribed minimum weight, this results in models of around 1.2 m wing span that are easily launched by hand. The plane's motor may use a maximum of 1,000 W \*min (60 kJ) for the 10 circuits of the triangular course.

