CIAMFlyer
Introduction to the Model Aircraft World
FAI AEROMODELLING COMMISSION
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Free Flight – High Tech in Touch with Nature

Free flight models are towed to altitude by means of a towing line or use a propeller driven by a rubber band motor, a combustion engine, an electric motor or a CO2 engine to gain altitude. Once the aeroplanes have reached the desired altitude, they can no longer be influenced from the ground and are left for the winds to play with. An on-board timer ends the model's flight.

Large number of competitors and nations

Compared to flying radio control models, free flight models require large flying fields. In areas of high population density or intensive agricultural use, it is often difficult for free flight enthusiasts to find suitable training grounds. Often, only disused military air bases or fields outside the vegetation period are available. Despite all these obstacles, free flight is conducted at an exceedingly high technical level. Optimisation of flight characteristics, in particular keeping the rate of descent as low as possible, is based on knowledge gained from latest research. The very lightweight models have to withstand high static loads – e.g. during towing or rapid ascents – which is only made possible by using high-tech materials. Automatic turn control, optimised propeller pitch adjustment, devices for compensating propeller torque, braking devices, etc. are achieved by means of advanced electronic systems and sophisticated mechanical transmission.

Waiting for better conditions

In spite of technology – mother nature involved

Competitors at free flight competitions are given a specific window of time in which to launch their models. Once the aeroplanes have been launched, they can no longer be influenced. An on-board timer controls the climb, stopping a motor and ending the model's flight.
If the model is launched when conditions, i.e. thermal activities in the form of updraughts, are favourable, there is a better chance of achieving the required flying time. Competitors need to have high levels of experience and have to carefully observe naturenand weather such as flying birds, minute movements of plants, especially trees, clouds and air temperature fluctuations. Streamers, air speed indicators and various sensors provide additional assistance but many prefer to rely on their instincts.

Wonderful FAI World Championships

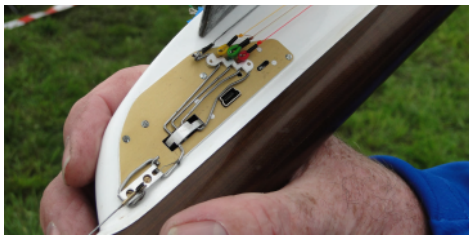
The focus at the FAI free flight world championships held every two years is not on spectacular attractions for spectators but on a grandiose and thrilling sporting competition at the highest level. As, depending on weather conditions, models may fly for distances of many kilometres, retrieving them requires physical performances from competitors that can be compared to those of marathon runners. Several models circling soundlessly in the sky is by far one of the most stunning sights in model flying I have ever seen. Around 200 senior competitors and juniors compete for rankings and medals in the three official free flight categories. Their lightweight and delicate aeroplanes are some of the most sustainable and energy-efficient aircraft ever. It can therefore be said, without exaggeration, that the probably oldest form of flying will be leading the way for the future of aviation.

Junior Louane Comtet preparing here rubber powered model (class F1B)

Up, up and away

Propeller hub of rubber powered model

Scene of a free flight competition

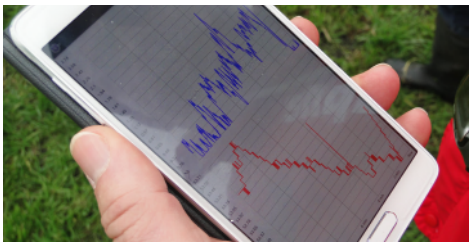


Timer system for steering and descent

Descent position of the tailplane

Nose of a power model (class F1C) with fully integrated motor

Launch of F1C model



Technical equipment to register wind and thermal streams

Procedure of rubber motor winding

↑Start of free flight gliders needs helpers

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