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Gliding Needs Altitude

Three ways of launching a model glider plane to gain altitude

The first model aeroplanes were free flight models and as such were not equipped with RC systems. At close inspection, the methods for launching them were much the same as those used today.

No gain without pain: The equipment first has to be carried up to altitude

An Attempt at an Overview

Modern free flight glider models are either launched by hand from a slope, pulled up on a line like a kite or propelled upwards with motor-driven propellers (rubber band, combustion or electric motors). This is no different for radio-controlled gliders. As there are variants of each of the three methods, the variety is large. Let's try a very simplified overview.

Free flight models with compass steering (FAI category F1E) are launched from slopes

Slope soaring with radio controlled gliders (FAI Class F3F) is a new World Championships Class

1. Launching from slopes and hills

Making use of topography and launching the glider from the heights of hills and mountains is probably one of the oldest and most natural options. However, the laws of physics cannot be circumvented and the energy required for the flight first has to be "stored" by carrying the aircraft up the hill. Gliders are then usually launched by hand. In case of very large and heavy RC gliders, launching aids in the form of rubber strands are frequently used.

2. Pulling up on a line

This method has numerous variants including the simple launch of gliders suitable for beginners, the very athletic launch of free flight competition models, launching with winches at RC glider championships or the aerotow, just like for person-carrying gliders.

In competitions – and, of course, during training – RC glider models (FAI category F3B) are accelerated using a very powerful electric winch and catapulted into the air. The line is 400 m long

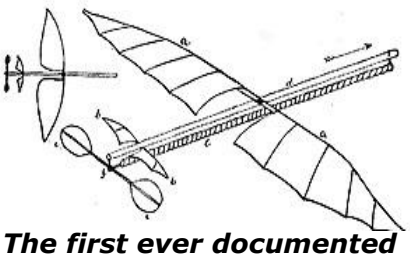
With the athletic use of muscle power, radio controlled glider models (FAI category F3J) can also be pulled up on a line

In flat areas, it has become established to tow large glider models with motor planes. For glider aerobatics competitions, for example, the gliders are towed to an altitude of 500 m using powerful model motor planes.

In free flight competitions (FAI category F1A) gliders are pulled up on a 50 m long line and towed around until the competitor feels sufficient lift on the line

3. Propeller-driven gliders

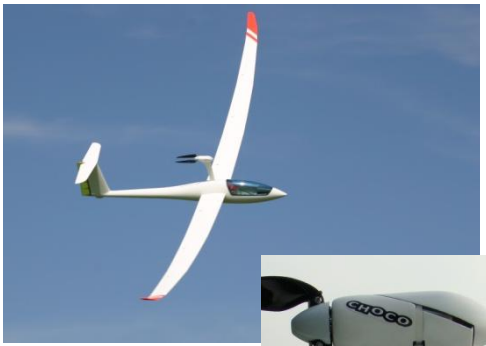
The oldest propeller drive is the rubber band motor. Probably one of the best-known examples is Alphonse Pénaud's Planaphore (1871). The first half of the 20th century saw countless examples of such rubber band motor models. It was not long before they were joined by combustion engines. In the late 1970s electric motors began to conquer gliding. They have the huge advantage that the radio control can be used at any time to switch the motor on or off during flight – provided, of course, the battery has not run out. The latest craze that I was able to see recently are glider models with turbo jets. Due to their cost and complexity they are likely to remain the exception.



The first ever documented model with rubber band motor: Alphonse Pénaud's Planaphore (1871)

Free flight models with rubber band motor (FAI category F1B) are high tech aircraft – they climb without making a sound

Radio controlled gliders with electric motor (FAI category F5B) climb at a rate of 50 m/sec and more



The electric Motor as a launching aid for large RC glider models