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The Introduction to the Modelaircraft World

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Setting a Course into the Wind

Flying Model Gliders with Magnetic Control

Imagine you are standing on the slope of a hill or mountain. You are looking down into the valley and into the distance. The wind is blowing into your face. Who doesn't think about flying then? Just spread your arms and off you go.

Humans need technology to fly

Sadly us humans are no birds. We need flying machines to take to the air. Or we can be model pilots that build our own model aircraft and let the wind take them where it wants or use radio control to steer them through the air.

A technically very attractive method is to keep a model glider on course using magnetic control. In the same way that a compass needle shows us the way at sea or in the open countryside, the compass of these model gliders continuously influences the rudder, ensuring that the aircraft stays on course. Of course a conventional magnetic needle would be much too weak to move a rudder. This is why very strong magnetic rods are used. In the simplest design the rudder is mounted directly on the axis of the magnetic rod, so that the rudder can rotate relative to the magnetic rod. Most designers use so-called "front controls", i.e. the rudder is mounted on the fuselage nose.

Launch preparations

Before launching, the rudder is adjusted so that the model glider will fly in the desired direction – into the wind if at all possible – as the magnet will keep the rudder exactly on course during the flight. Every deviation from the course is immediately corrected by the compass. In addition the flight duration is determined by an electronic or mechanical timer. Otherwise the elegant model gliders would often fly away. This timer can also be used to influence the rudder, so that circular or meandering courses can be flown.

..up, up and away

Magnetically controlled model gliders are always launched from hills and slopes. In competitions the goal is to achieve maximum flight duration. Competitors determine the flight course based on topographical and meteorological conditions. Often they have to wait a considerable time for the optimum moment to take advantage of the best ridge lift and thermal conditions. The model gliders are then gently pushed into the air or launched with considerable force. If everything is as it should be, the aircraft will stay on course beautifully. In fact, they will sometimes hover facing the wind a few metres above the slope – staying in the same spot for seconds and minutes, like birds of prey. A wonderful sight to see!