

PRESS INFORMATION



The Modern Glider

The modern glider, or sailplane, is a sophisticated piece of machinery designed to travel at speeds approaching 300kmph and capable of heights in excess of 30,000 feet. A glider is basically an aircraft without an engine and shouldn't be confused with a hang-glider, which is an entirely different concept.

The wing is the key to the glider's performance. An extremely efficient aerofoil, the wing uses the glider's movement through the air to produce the lift that allows the glider to stay aloft. This principle is the same used by a 747 or a fast military jet, or even a bird. Whereas a powered aircraft uses the thrust of its engines to propel it through the air and so create lift, and a bird uses the flapping of its wings, the glider uses that old standby, gravity, to keep flying.

The glider pilot is continually seeking rising air. As long as the glider is moving through air that is rising faster than its rate of sink through it, the glider will maintain or gain height and prolonged soaring flights will be possible. In the UK, flights of over 500km are regularly flown and a handful of 1000km+ flights have been achieved.

Glass- and carbon-fibre construction techniques are used to produce gliders that are strong, durable and very aerodynamically efficient.

The primary controls on a glider are basically the same as those on any powered aircraft. A backwards and forwards movement of the joystick controls the elevator and, through it, the pitch of the glider. Forward on the stick to push the nose down and increase the speed; backwards and the nose

rises and speed decreases. Sideways movement of the stick moves the ailerons, causing the glider to bank and begin turning in the direction of the stick movement. The rudder is controlled by foot pedals and yaws the glider in the direction of the pedal movement. Unlike a boat, the rudder does not turn the glider – a smooth turn relies on a combination of aileron and rudder inputs.

The other main control, common to virtually all gliders, is the airbrake. Opening the airbrakes causes plates to extend out of the wings, interrupting the airflow and degrading the efficiency of the wing. These are used to control the descent of the glider, particularly on landing.

Some glider classes (15m, 18m, open) are equipped with flaps. These are, in effect, extra wing sections which can be extended from the trailing edge of the wing to adjust its characteristics in flight and enable the pilot to achieve optimum wing efficiency over a range of speeds.

The level of glider instrumentation varies dramatically between training gliders, at one extreme, and those used by top competition pilots. All gliders have basic instrumentation showing height, airspeed, and how fast the glider is climbing or descending. Racing gliders, in addition, will be equipped with GPS navigation aids and flight computers, helping the pilot decide how far to climb and how fast to fly for optimum overall time.

