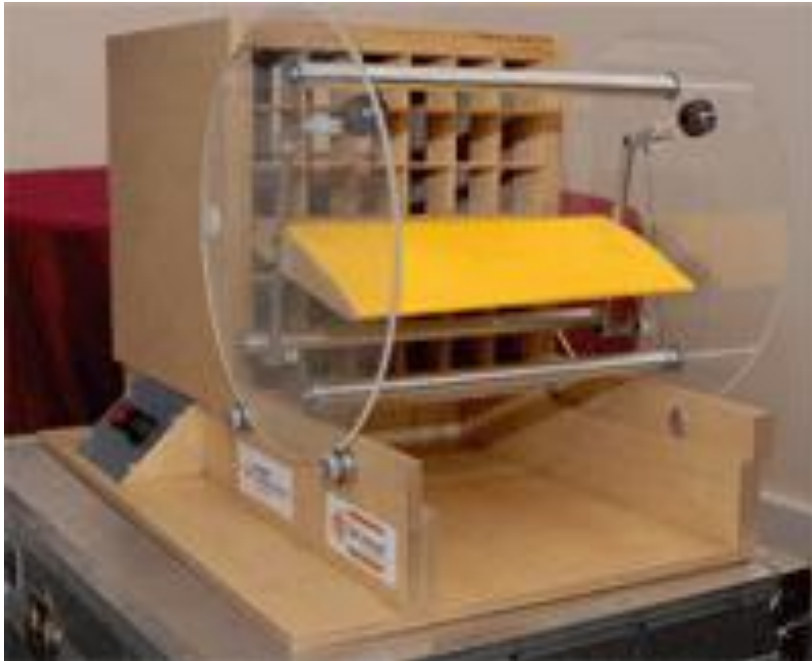


Aerodynamics: Aerofoil Demonstration



An aerofoil is essentially an aeroplane wing section, but it can also be found in performance cars to provide down-thrust, and therefore help the tyres grip better. Other applications include fans, propellers and even wind turbines.

The aerofoil demonstration comprises a variable speed, propeller generated, collimated airflow which passes over an aerofoil. When sufficient lift force is generated by the aerofoil, it will rise. The airspeed can be continuously varied so that the effect of airspeed on lift can be investigated. The aerofoil itself is counterbalanced for sensitivity and mounted on a pantograph so that it maintains a constant angle to the airflow as it moves up and down. In addition, the aerofoil mount can be rotated so that the angle of attack between the aerofoil chord and the airflow can be varied in order to investigate the relationship between angle of attack and lift. Variation is achieved by rotating the Perspex discs upon which the aerofoil is mounted. The discs themselves rest on rollers and can easily be rotated by hand.

Power is only supplied to the fan motor while the red button on the front panel is depressed. Motor speed is controlled by the black potentiometer. The motor is a low voltage device and power is supplied to the aerofoil unit via a CE compliant modular power supply, similar to those fitted to computer printers.