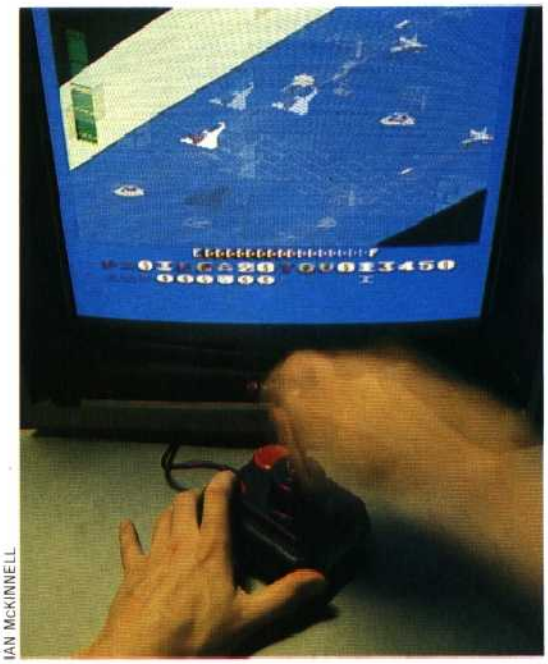
Fast Reactors

Some add-ons that will help the computer games enthusiast to speed up the action



IAN McKINNELL

In a computer game you might have to pilot a spaceship through enemy lines and fire your missiles to destroy a target. The joystick transfers the control of the spaceship from a finicky typewriter keyboard into your own hands. It is modelled on the original pilot's joystick found in aeroplanes.

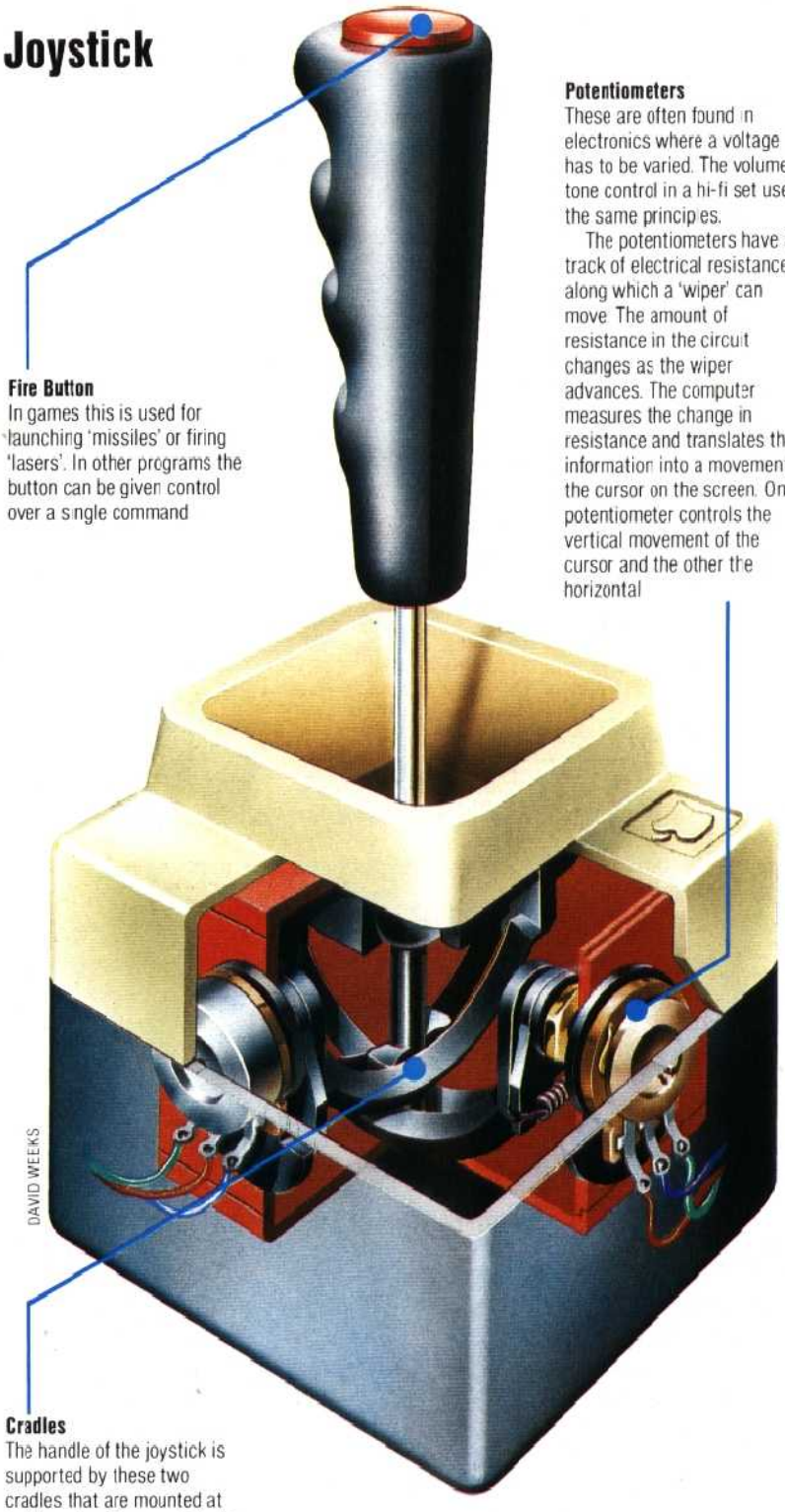
The joystick plugs into the back of the microcomputer and is most often used in arcade-style games. The spaceship, or whatever object the joystick controls, moves in the same direction as the joystick. Usually the joystick can move in any of four directions. When you ease the joystick forward, the spaceship moves up the screen. Electrically there are four switches inside the device arranged in such a way that when the joystick is moved one, and only one, of the contacts is closed. Each switch sends its own message to the computer: either up, down, right or left.

Some joysticks also have a button for firing missiles. The button is beside the joystick where it is operated with the other hand. Or, in the pistol grip design of joystick, missiles are released by squeezing the thumb-trigger.

The cheaper microcomputers, notably the Sinclair ZX81 and the Spectrum, don't always have joystick facilities. You either have to type in the desired directions of motion, using the allocated keys or else purchase a joystick interface.

The interface is an adaptor that allows a joystick to be connected to the computer. Some independent companies have produced interfaces for these machines, but even with such a device the game's programs have to be written to include joystick control as well as keyboard control.

Joystick



DAVID WEEKS

Fire Button
In games this is used for launching 'missiles' or firing 'lasers'. In other programs the button can be given control over a single command

Potentiometers
These are often found in electronics where a voltage has to be varied. The volume or tone control in a hi-fi set uses the same principles.

The potentiometers have a track of electrical resistance along which a 'wiper' can move. The amount of resistance in the circuit changes as the wiper advances. The computer measures the change in resistance and translates this information into a movement of the cursor on the screen. One potentiometer controls the vertical movement of the cursor and the other the horizontal

Cradles
The handle of the joystick is supported by these two cradles that are mounted at right angles. They are linked to the potentiometers. When the joystick handle is moved, the 'wipers' on the potentiometers slide along and change the electrical resistance