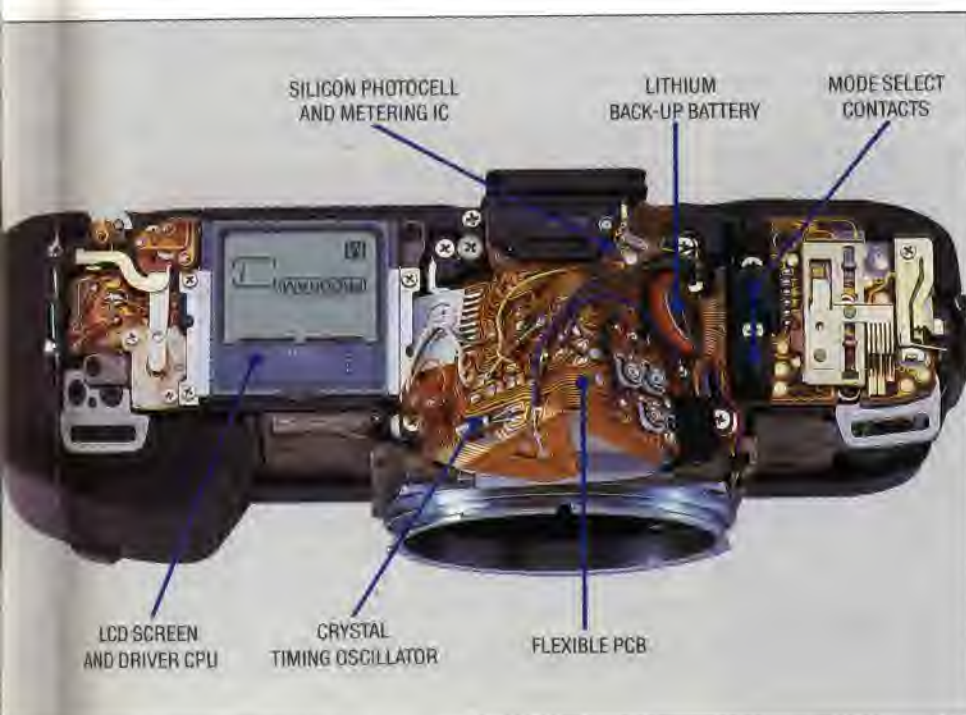


**Flash Metering Beam**  
The flash duration and intensity is determined by metering the image beam

<b>CANON T70</b>	
<b>PRICE</b>	About £270 for camera with 50mm lens
<b>WEIGHT</b>	715g with 50mm lens
<b>LENS</b>	50mm x f1.8
<b>APERTURE</b>	f1.8 — f22
<b>EXPOSURE</b>	1/1000 — 2 seconds

**Image Beam**  
Light from the object passes through the lens into the viewfinder or onto the film



scenes' programmed into the camera. Each of these scenes is produced by analysing thousands of photographs.

But of all the cameras currently available, the one that makes the fullest use of electronics is the Canon T70, which is priced at a very reasonable £240. The T70 has no mechanical controls; all of its settings are made by pressing buttons. One of eight modes can be selected by pressing a button on the top left of the camera. This makes information appear on a large LCD on the top right of the camera. Important information, such as shutter speed, aperture and mode is, also shown in the viewfinder, so that the photographer does not have to take the camera away from his or her eye while framing a shot.

### CANON T70 IN OPERATION

When selecting a shutter speed, adjustments are made to the current value displayed on the LCD, by using two buttons to step the speed up or down. The film speed (the sensitivity of the film, known as its ASA or ISO number) is set in much the same way. The frame counter, showing how many photographs have been taken, also appears in the liquid crystal display.

The camera has a built-in motor to advance the film, and rewind it when the roll is finished. The T70 runs off two ordinary batteries, and three bars in the LCD register their status. If all three bars are shown, the batteries are fresh; two bars mean they are partly used; and one bar means they need replacing. If the camera's self-timer is used, a display on the LCD counts down the seconds until the shutter is released.

The microprocessors used in cameras are much less powerful than those used in computers. The T70 has its own specially-made eight-bit microprocessor, which is of the CMOS type to keep its power consumption at the minimum. It works at a clock speed of only 32 KHz; microcomputers work about 100 times faster. When not being used, the camera switches to a mere eight KHz to save power.

The microprocessor is encased in a 60-pin flat package and has a large amount of ROM, but only 16 bytes of RAM. Four other chips work with the microprocessor, the most important being the input/output chip. This controls the mechanical operation of the camera via magnets and a motor. It also converts the analogue electrical signal from the light meter chip into a digital signal so that the microprocessor can understand it.

The power of microelectronics makes it possible to get a great deal of pleasure from taking good quality photographs without needing to understand the complexities of photography. Even so, there will always be cases where the camera will give the wrong exposure or focus on the wrong object. The person who really understands the operation of a camera will always have the advantage over a beginner with a piece of sophisticated photographic equipment, but each year that advantage is getting smaller.