'linear' monitor.

The price of monitors ranges upwards from about £70 for a nine-inch black-and-white set. A 12-inch phosphor-green screen monitor costs about £110 to £150. Colour monitors are more expensive, owing to the higher cost of the tube. The 'standard' monitors such as the Microvitec and Kaga ranges cost from £200 to about £350, depending largely on the size of the screen and the bandwidth. Most colour monitors are available in both TTL and analogue versions, with little difference in the cost.

The TM90PSN is an interesting and flexible monitor produced by the JVC company. Costing about £320, it is smaller than most, with a 10-inch screen, and though the bandwidth is not particularly high (which limits the maximum resolution), it is able to accept almost any type of input, ranging from ordinary monochrome composite, through TTL and analogue RGB to any one of the four composite colour signals, PAL, SECAM, NTSC 3.58 and NTSC 4.43. It has a selector mechanism inside which checks the incoming signal and automatically switches the monitor to the appropriate mode.

This kind of monitor will become more common, and it can serve as a general-purpose output for computers, video recorders, video disc players and other machines.

Domestic Televisions
The picture quality of domestic televisions has improved rapidly with advances in cathode ray tube construction technology and electron gun alignment. Sony, for example, has shown its awareness of the dual use to which its sets are put by installing the antenna connector on the front of the set

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Persistence And Colour

An important factor in choosing a monochrome monitor is the type of phosphor used. This is the powdery substance that coats the inside of the screen itself and has the property of glowing when struck by an electron beam, thus producing the picture.

The main considerations are the colour and the 'persistence'. The first is self-explanatory, but persistence is less well understood. It is a measure of the length of time for which the phosphor will continue to glow after the beam has passed on. Its precise value is seldom stated and it is usually simplified to 'long' and 'short' persistence.

The phosphors used in television sets and virtually all colour monitors have a short persistence, as do the majority of monochrome monitors but in many applications it is easier for the viewer if the image continues to glow for a fraction of a second, since this reduces screen flicker, a major cause of eyestrain.

The best-known example of long-persistence phosphor is seen on radar screens, on which the radial sweep of the beam leaves a long glowing trail, giving the screen a kind of 'memory' without the need for complicated electronics.

However, if the system employs a light pen, long persistence is a liability — in fact, it would make the light pen unusable, since its operation is dependent on the image fading fast enough for the pen to be locatable by the computer. If the phosphor continues to glow, the computer will see light no matter where the pen is pointed and regardless of whether the beam is actually scanning that point or not. Hence the computer will not be able to calculate the position of the light pen using its knowledge of which position on the screen is being scanned at a particular moment.

A range of types and colours of phosphor are employed, depending on the use to which the monitor will be put, and on the preference of the purchaser. Almost any colour can be produced. White phosphor with short persistence is cheap and readily available, but one of the shades of green is almost as common and is much easier on the eye, as is amber. Blue is seen on many mainframe terminals such as those used by travel agents and on airline desks, while red is used in radar rooms and other places in which night vision must not be impaired.