printer, which burns away the thin metallic coating to reveal the black backing paper. Sinclair improved the system by using two heads on a continuous belt, but it still takes eight passes of a head to create each row of characters. Fortunately, the ZX Printer has to print only 32 characters on each row so the speed is acceptable.

The main disadvantage of both types of printer is that they use special paper. Such materials tend to be expensive and are available only in rolls, which makes storage difficult. With the thermal printer it is essential to buy the correct grade of paper; otherwise the image will not develop properly. It also fades with time or exposure to heat. Electrostatic paper is even more delicate and if handled with damp or sweaty hands the image will blur and fade away as the coating dissolves. In both cases the best way to ensure a good, long-lasting image is to take a photocopy. Surprisingly, the silver-coloured paper photocopies very well.

These drawbacks notwithstanding, both types of printer offer the makers of the smaller home computer a way to provide some form of printing system for their machines that they would otherwise have to do without. The dox matrix method of printing allows direct copies to be made of the screen display, so both text and graphics can be produced at no extra cost, and the relatively low quality of the final image doesn't really matter to the user.

Recently, however, the dominance of these printing systems has been challenged by the four-colour pen plotters supplied by Tandy and Sharp. These can produce excellent, fully formed character sets and superb line graphics on ordinary roll paper for roughly the same cost as the thermal or electrostatic devices. As printing technology develops, it is still the non-impact device with its simple mechanism and limited facilities that fills the printing requirements of the low-cost home computer market.

Big Brother
Of all the implementations of thermal printer technology, few can be quite so elegant as the Brother EP-22. For around £170, less than many of the cheapest printers of any type, you not only get a 75-column thermal printer but a portable typewriter into the bargain. Designed to operate with thermal paper and as a normal impact printer with a ribbon fitted, the unit can store up to 2,000 characters in its battery-powered memory, allowing letters or memos to be created on the move. The electronic memory doesn't really support word processing as such but you can correct any character in the last 16 entered, as the output goes to a built-in LCD display before being typed onto the paper. The quality of the output isn't up to that of a real 'printer'— lower case letters lack true descenders for example—but as a portable printing companion to computers such as the Epson HX-20 and the Tandy Model 100 it performs a function that would be difficult to achieve with any form of impact printer

Tandy Thermal Printer
More adaptable than the other two low-cost printers we have described, the Tandy TP-10 Thermal Printer is directly compatible with all the microcomputers in the Tandy range