



or 80 characters per line. The narrow paper width does mean that 80-character text is somewhat small, but character definition is extremely good. Text may be printed in any of the four colours, with a printing speed of around 10 characters per second. This is slow in comparison to most dot matrix printers, but roughly equal to the speed of daisy wheel output.

To produce graphics, the printer/plotter is switched into graphics mode and will then produce lines, curves and large letters. If the unit is sent characters while in graphics mode it will interpret them as commands and will not attempt to print them. Thus, if line-drawing is required, a command such as:

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LPRINT "D 0,100,100,100,100,0,0,0"
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would be used in BASIC. The D is the instruction to draw lines and the numbers following give the positions of the points through which the lines will pass. In this case (assuming that the print head is positioned at the co-ordinates (0,0) to begin with) a square will be drawn. Other commands follow a similar format.

The width of the paper is regarded as being divided into 480 horizontal steps, which are used to position the print head. The paper used is supplied on a roll that is several metres in length. This might give the impression that there is no limit to the vertical length of a drawing, but in fact paper slippage can result in lines failing to join up as required, so the printer/plotter will not allow the paper to be wound back more than a certain distance.

Although some very complex graphics may be produced on the printer/plotter, programs to achieve this take a long time to write — there is no easy way of copying an image directly from the computer screen. Line drawing is simple enough, but the absence of a PAINT or FILL command means that blocks of solid colour are obtainable only by drawing many fine lines. This is slow and wasteful of ink. The device is also unable to draw to the full paper width — a small gap must be left at each side. The unit is especially suited to graph-drawing, and features a command that automatically draws the axes of a graph, complete with the relevant units marked at chosen intervals.

In text mode, the printer/plotter will produce two different print sizes. However, by using graphics mode, much larger text sizes are available and letters may be printed sideways, allowing large messages to be printed along the length of the paper. The ballpoint pens are quick to run out of ink, and are likely to dry out if left in the print head. Each time the unit is turned on, all the pens are tested automatically as the printer/plotter draws a small square in each colour.

Professional plotters are extremely accurate, and produce high-quality colour graphics. It would be unreasonable to expect a unit in this price range to equal these standards, but it must be said that the results achieved with the printer/plotter are surprisingly good.

