

## PRINTERS

As we have all discovered at one time or another, the stuff on our computer screen can be fleeting, and sometimes unrecoverable, especially if the power is shut off. Printers give us a hard copy for handling and reading and sharing and even mailing. Clearly, they are important.

Printers make characters on paper in basically two different ways. Impact printers work much like typewriters; they produce characters by striking an inked ribbon that, in turn, strikes the paper. Non-impact printers cause a chemical reaction in the paper, or they spray the paper with a jet of ink, or they drop powdered ink on the paper and then melt the powder into a solid ink blob.

Dot-matrix printers are the most common type of impact printers. They work just like typewriters, except that in a typewriter a metallic or plastic character strikes the ribbon. By contrast, the dot-matrix printer uses a series of fine pins to strike the ribbon. The pins are typically arranged in a vertical column of 9 or 24 in the print head. Some of the pins strike the ribbon, and then the print head moves horizontally a little and they strike again. The pattern of pins selected for striking as the print head moves builds the character on the paper.

Few dot-matrix printers are sold today, but they are certainly still available at swapfests and are inexpensive. They can provide good copy, especially the 24 pin models when used in a "letter quality" mode.

Thermal printers are a non-impact type. Their print heads heat the paper, a chemically coated type that turns dark with heat. These printers generally provide poor quality output. Coupled with the need to use special paper, this type of printer is not a good choice, even if you can find one of these relics at good swapfest prices.

Laser printers generally produce the best quality output. These transfer powdered ink to the paper in a pattern representing the character to be printed. Then they heat and fuse the powder to the paper. Laser printers are typically large and somewhat heavy, owing to the engine that transfers powder to the paper. They also consume a considerable amount of power for the transfer, and to heat the ink. Moreover, the powdered ink cartridges and general maintenance can be quite costly. These factors make them somewhat more expensive to purchase and to use than other types, though the quality of their printing is excellent.

Ink jet printers are currently the most popular type for home or ham related printing. These project a fine spray of liquid ink directly on the paper. They are also quite capable of spraying colored inks, and the best color ink jets today can do an astounding job of reproducing color artwork, or even photographs. As a class, they are less expensive than laser printers, and even their black and white output rivals the lasers in sharpness and overall quality. Ink jet printers are the choice if you are going to buy one new.

There is one more major consideration when picking out a printer at a swapfest. Printers come in two different "flavors", serial and parallel. Although either flavor can do the job, they do it differently. The parallel printer connects to the parallel port, a 25-pin female socket on the computer's rear panel. As explained in previous articles, the data goes out of your computer's parallel port to the printer through eight wires, simultaneously. By contrast, a serial printer connects to one of your COM ports - either to a 25-pin or 9-pin male plug on your computer's rear panel. Fewer wires are needed to transmit the data, since the data is sent in pulses one after the other. However, if you install a serial printer, you won't be able to use the computer for packet without unplugging the printer and plugging in the TNC, unless you have more than one COM port installed. You will also need to add at least one software command to your AUTOEXEC.BAT file to let your computer know it should send printer data to the serial port, instead of the parallel port.

Keep these factors in mind when shopping, and be sure to find out the "flavor" of any printer you are considering. One way to do this is to look at the data plug on the back of the printer. If the connector is a standard 25 pin D-shell connector, it is probably a serial printer. On the other hand, if it is a funny looking 36 contact Centronics connector, it is almost certainly a parallel printer. Happy computing!