MAKING MOVES

The portable MS-DOS machine from Sharp has the appearance of a small electric typewriter. But below the lid of the PC-5000 lurk, among other features, a built-in crystal display and a bubble memory. The computer also boasts a case specially designed to accommodate its own optional printer.

Portable computers take many forms, but the most popular style recently has been the lap-held portable, such as the TRS-80 Model 100 and the Epson HX-20. These machines incorporate a lightweight LCD screen and can run quite efficiently on battery power alone. The Sharp PC-5000 is the most expensive machine of this kind. It continues this design trend and expands into new territory by relying on bubble memory instead of cassette storage.

Bubble memory caused quite a stir in the industry when the idea was introduced several years ago, but has not caught on as expected because few companies have been able to overcome problems with speed and reliability. Sharp appears to have solved the problems, because their test machine proved to be very fast and reliable. Bubble memory requires very little power and permits the storage of large amounts of data in a tiny space. The principle involves storing data in magnetically-coded bubbles.

The PC-5000 resembles a small, portable electric typewriter. The lift-up lid exposes a sculptured typewriter keyboard with eight user-defined function keys and four cursor arrows placed neatly across the top. The lid is hinged and

contains the LCD screen. Although fairly heavy, the lid is held in place by a ratchet assembly, which allows it to be moved into several positions for comfort. Above the keyboard is a panel with three LED warning lights, (power, low battery, bubble), and a slot for a bubble memory pack.

Behind this panel is a tray where the optional printer sits. The printer itself is a rectangular box that fits neatly into the tray. It is a thermal printer, producing 37 characters per second. On heat-sensitive paper, the print is of very good appearance, although the paper itself detracts somewhat from the quality of the document.

The Sharp PC-5000 has 128 Kbytes of user memory, and 192 Kbytes of ROM, including Microsoft GW BASIC, the same version used on the IBM PC. The CPU is Intel's 8088, again the same as the PC, and the Sharp runs MS-DOS as its operating system. The computer addresses the bubble as though it were disk drives A and B. Sharp offers a twin floppy disk drive unit that can be plugged into the back of the PC-5000. These drives would be addressed as C and D. The floppy drives cannot be run on battery power.

The Sharp comes with several software packages from Sorcim, including SuperCalc, SuperWriter, and SuperComm, a telecommunications program. The programs come on a bubble pack, and are chosen from the system menu by pressing one of the function keys. The values of the function keys can appear as labels on the last line of the screen.

Sharp has for years been known for quality in design and engineering, and with the PC-5000 has managed to fit a powerful computer into a small package.

Twin Floppy Disk Drives
This unit contains two 320K disk drives running under MS-DOS. It connects to the back of the PC-5000, but cannot run on the machine's battery power. Software written for other MS-DOS machines must be formatted for the 8-line display
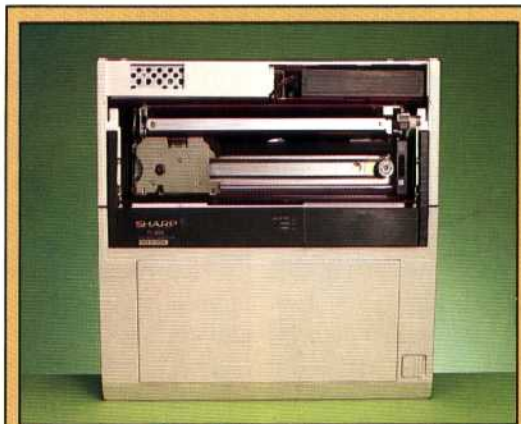
Optional Printer
Looking down into the PC-5000 you can see the optional thermal printer nested in the case. The printer fits neatly into a small tray and connects to the system board via a ribbon cable. The printer is fast at 37 characters per second and produces a high quality output on heat-sensitive paper
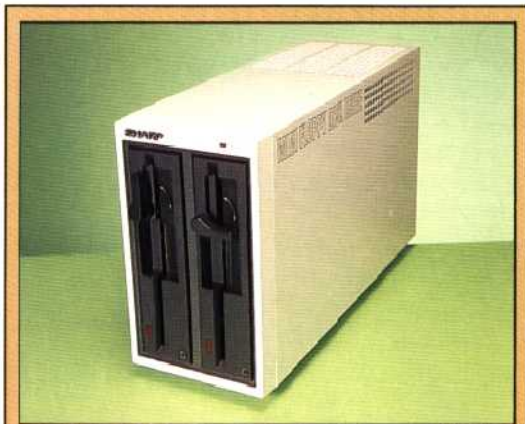
Bubble Memory Controller
This card acts like a disk drive controller, except that it controls input and output from the bubble pack slot

ROM Board
This board has 128K ROM including MS-DOS, character generators for the display and printer, some system I/O and communications, and PISCS. PISCS is a chip that translates signals from the bubble pack into a language that MS-DOS understands. With the help of this chip, MS-DOS reads the bubble packs as disk drives A and B

Expansion Slots
These slots hold expansion RAM packs, or software held in ROM cartridges