

even included in the purchase price Ashton-Tate's dBase II — the most powerful of all the microcomputer-based database management programs, which normally sells for £350.

Unfortunately for Osborne, most of the US business community concentrated its attention on the IBM Personal Computer, a 16-bit machine based on Intel's 8088 microprocessor. Intended as an interim solution — it boasts 16 bit addressing, but only eight bit data transfer — the 8088 became a de facto industry standard simply by virtue of IBM choosing it to power its first entry into the microcomputer market.

The IBM PC uses a specially devised operating system called PC-DOS. In an effort to compete, Digital Research launched two new versions of the CP/M operating system: Concurrent CP/M, which allows true multi-user multi-programming; and CP/M86, designed for Intel's 8086 chip, which incorporated 16-bit addressing and 16-bit data transfer.

Unfortunately, all these developments came too late to prevent the Osborne-1 from being swamped by market forces, and in 1983 the Osborne Computer Corporation — the parent company in the United States — went into voluntary liquidation. With its 64 Kbyte memory (60 Kbytes available to the user) and twin 183 Kbyte disk drives, the Osborne-1 is still a reasonably powerful computing machine. Add to that its built-in RS232 and IEEE ports, the modem port and its ability to run from a battery pack, and it's easy to see why the computer was an instant best seller, and why it is still popular with users even after the demise of its manufacturer.

One very interesting feature of the Osborne-1, which is shared to some degree by Epson's HX-20 (see page 169), is the provision of a 'virtual screen' more than three times as large as the 52 column by 24 row display provided. The use of the control key (a standard CP/M requirement) and the cursor keys allows the display to move around the actual screen memory. To a great extent this removes most of the disadvantages imposed by the small physical size (8.75 x 6.6 centimetres, 3.5 x 2.6 inches) of the screen, although non-users often express surprise that a display whose characters are a mere two millimetres (1/10 inch) high should be legible, let alone comfortable to use.

In fact, few users are unable to come to terms with this miniaturisation, although Osborne did provide an external monitor connector that duplicates the contents of the small screen on a larger additional unit. Indeed, far from considering the character size to be too small, there was an appreciable demand from users for the entire four Kbyte virtual screen (128 columns by 32 rows) to be displayed at all times, and Osborne manufactured a modification to just that specification. This allows users to choose one of three screen 'widths': 52 characters, 96 characters or the full 128, and even at the highest density the characters are still well-defined and readable.

The Osborne-1's keyboard, which clips on to

the computer's front panel as a 'lid', rendering it weatherproof, is a 69 key unit. It has normal typewriter-style keys, with the addition of Control and Escape keys, plus a 12-key numeric pad on the right-hand side that includes extra full stop and enter keys. Using a CP/M program called SETUP, the functions of the numeric keys (when used in conjunction with the Control key) can be user-defined to a maximum of 96 characters. This feature is particularly useful if a word, phrase or command string is to be used frequently. The results of the SETUP program are written on each disk, rather than being stored in memory, so the functions can be pre-programmed separately for each different software package. The computer automatically sets its functions each time the operating system is loaded.

In addition to the standard 96 upper and lower case characters, there are 32 pre-defined graphics characters available, though these can only be accessed through an applications program.

Because the Osborne-1 uses 6800 series support chips, rather than their counterparts from the 8080 family (as one would expect of a CP/M machine), the keyboard polling method is slightly different. There is a portion of memory set aside to interpret key depressions, and the system ROM continually checks to see if a key has been depressed. There is no decoding logic in the keyboard itself. It is this implementation which allows easy programming of the function keys, and because these functions are stored in the Random Access Memory, they can be accessed and changed from within a program.

Though the Osborne Computer Corporation went into voluntary liquidation, the British division set up as a separate company and continued to trade. Whatever the future holds for this machine, its quality is undeniable.



Carried Away

In addition to its excellent price/performance ratio, the Osborne-1 has the added advantage of portability. At 10.5kg it is no lightweight, but it is completely self-contained and well balanced, so carrying it about is not too much of a problem.

One constraint on its physical dimensions was that it should fit under the seat of an aeroplane

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