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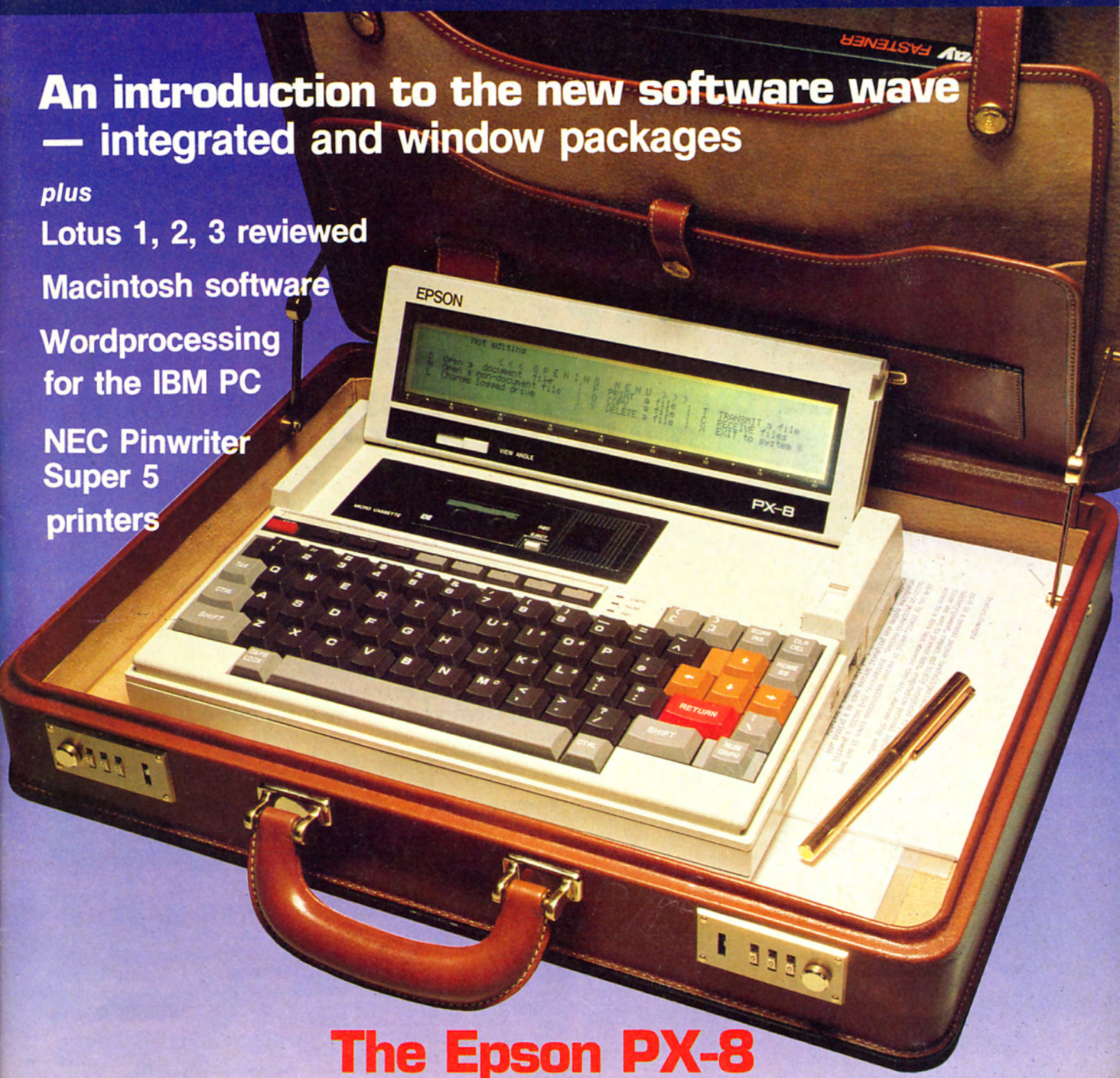
plus

Lotus 1, 2, 3 reviewed

Macintosh software

Wordprocessing for the IBM PC

NEC Pinwriter Super 5 printers



The Epson PX-8

Personal computer power when and where you want it.

EPSON PX-8

Well on the way to being truly portable

By Peter Ensor

Epson has long been recognised for its design of printers. In addition, it has been producing computers such as the first portable, the HX-20. Now, Epson has taken another step forward by producing a new CP/M-based portable computer – the PX-8

The Epson PX-8

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which is being promoted as a personal computer.

It is housed in a 297 x 216 x 48mm-high cream coloured plastic case weighing about 2.3kg – the same size and weight as two American *Byte* magazines. A carry handle on the front of the case unfortunately needs two hands to pull out before you can use it.

The light brown keyboard cover is removed to use the computer, revealing a 64-key QWERTY keyboard and nine extra special function keys. The RETURN and cursor keys are a distinctive red and orange colour respectively.

The cursor keys are placed in an inverted T pattern with the down arrow key where the home key normally is. The home key is between the up and right arrow keys.

The J,K,L and U,I,O keys are overlaid with numerals to form a numerical keyboard.

Opening up the display lid reveals a wide LCD display and micro-cassette drive and speaker. The LCD display is an 80-column by eight-line display which can be angled at any of the 13 clicked positions from fully closed to lying flat open. The screen can be scrolled through a total of 48 lines using the cursor keys.

The screen can be set in one of four modes which allow for split screen operation or as a graphics screen with a 480 x 64 resolution. There are nine international character sets which are switch or software selectable. None of the character sets uses descenders.

The LCD display is typically slow but the provision of a type-ahead buffer is a welcome feature. Since the computer is very portable, it can be used sitting on a knee. This meant the display was continually being adjusted and, coupled with low light levels and hence low contrast, made it hard to read.

Computer asks for password

The microcassette drive uses the same size cassette as many dictaphones. The inbuilt speaker can be used to listen to these cassettes and by also using the word processing package, the computer can be used as a form of electronic notepad.

The cassette was slow in use but was a big advantage to be able to back up files. By using the automatic power off feature, the computer can be left to back itself up and then turn off when finished.

When the unit is turned on, the computer will first ask for a password if it has been enabled. The display then changes to show either a menu or what was showing when the computer was turned off.

The computer has a power-down state so that the user can return to exactly where he or she was before the computer was turned off, even if it was partway through an editing session.

The CP/M operating system is used, with a few extensions. All these extensions are accessible via the BIOS jump table and enable control to be made of, for example. The RS-232C serial port, the clock or the banked memory.

Use is made of RAM and ROM devices to emulate the disk drives. The 64K of main memory can be split up to contain up to 24K of RAM disk. This and the cassette are the only "disks" that be written to.

Other "disk" drives are the two user-insertable ROMs which behave like write protected disks. If more storage is required, another 120K of memory can be added by the addition of a slim case underneath the main unit.

If more permanent storage is required, floppy disk drives can also be added by using the high speed serial port. The computer contains a clock module supported by its own battery backup. This clock can be used for simple time of day reporting in programs as well as an alarm clock or to run a program at a predefined time.

The unit is powered by NiCd batteries giving a maximum of 15 hours of use. When the batteries become flat, a "CHARGE BATTERY" banner is displayed for 20 seconds and the unit then powers down to use the clock backup batteries. The system may be continued on from where it left off when the charger is plugged in. Full recharging takes eight hours.

Other inputs into the unit are two analogue inputs to an analogue to digital converter and also a bar code reader.

Software with the unit

Software supplied with the unit included adaptions of the WordStar wordprocessing program, a spread-sheet and Microsoft BASIC as well as some special programs for computer.

The first of these special programs makes the computer emulate a terminal. This goes hand in hand with another program called FILINK that transfers files between

Microcomputer Summary

Name:	Epson PX-8
Manufacturer:	Epson Corporation.
Microprocessor:	Main CPU – Z80 lookalike; slave CPU – 6301; KB CPU – 7508.
Clock speed:	Main CPU – 2.45 MHz; slave CPU – 614 kHz; KB CPU – 200 kHz for keyboard (KB), 32 kHz for clock.
RAM:	Main memory 64K standard; slave 6K video and 128 bytes internal.
ROM:	32K operating system; 8-32K per capsule.
Input/output:	Bus interface, high speed serial, RS-232C, analogue input bar code reader, speaker output.
Display:	80 columns by 8 lines scrollable on 80 x 48 display memory.
Language:	Microsoft BASIC.
Software:	Portable WordStar, Portable Calc, Portable Scheduler.
Graphics:	480 x 64.
Sound:	4 1/2 octaves single voice.
Cost:	$3400.
Options:	Larger RAM disk.
Peripherals:	60K RAM $881.10; 120K RAM $1244.22; twin floppy disk drives POA; acousitc coupler $539.31; bar code reader POA; universal unit $229.62.
Other features:	Compatible with all CP/M software.
Reviewer's ratings (5 the highest):	Documentation 5; ease of use 4; language 4; expansion 5; value for money 3; support 4.

(Review unit supplied by Microprocessor Developments Ltd).

computers, allowing the last night's work to be loaded into another computer for further processing.

The WordStar package, which replaces the standard CP/M editor, is a welcome addition. The ability to write letters while travelling will be a major selling point of this computer. The Mailmerge and Spellstar options are not available because of memory restrictions but the WordStar contains its own file transfer program so that the files may be transferred to a larger machine for these functions.

Because of the small size of the screen, none of the menus are displayed. However, they may be requested by pressing the HELP key. The only major restrictions of this WordStar over a full version is that the help menu and the directory file listing are not available.

The Microsoft BASIC is very extensive with many additional commands to make use of the machine-specific facilities. A screen editor and random file access are also included in the BASIC. The SOUND command gave the inbuilt speaker a range of four and a half octaves.

One thing was surprising. Even though the BASIC is loaded off ROM, it is not much faster than if loaded off a floppy disk.

The spreadsheet is known as Portable Calc and, like the WordStar, has a limited range of commands. One of the commands is to blank the whole spreadsheet. The manual recommends to quit the spreadsheet and restart it.

A quirk & corruption

Another annoying quirk of the spreadsheet is to disable the type-ahead buffer. This makes the system very slow to use when scrolling and, as it has no commands for setting up windows, this becomes annoying.

To top off Epsons' embarrassment, the training manual leads the user through a sequence of commands that happens to corrupt some of the data in the cells. This corruption manifests itself as garbage in the cell, and the rest of the cells on that row are out of alignment with the border. At one stage, this corruption managed to lose the rest of the row starting at column B.

All these packages come in ROMs which are plugged into the back of the unit and being CMOS, are susceptible to damage. The ROMs are mounted on a fragile carrier which does offer some protection but I am putting this fault down to a damaged ROM as it is very unlikely Epson would let this fault go unnoticed.

The remaining software package is Portable Scheduler, a memo style notepad. The screen is divided into half-hour divisions and notes may be placed against each of these periods.

The best part of this program is the display of the month's appointments on what look like staves of music. The computer fills in between each of these staves if that period is used, allowing the coming month to be planned very easily.

When the time equals one of these periods, a message is displayed on the screen as a reminder. This occurs even if the scheduler package is not resident in the computer.

Documentation provided for all the software and the computer is excellent. No manual is less than 15mm of useful information, and the presentation is good and easy to read.

This computer represents a major step towards the production of the truly portable computer. The large display and the supplied software combine to make a useful tool for the travelling user. The basic unit is restrictive but with the addition of the extra RAM unit, the system is likely to prove popular.

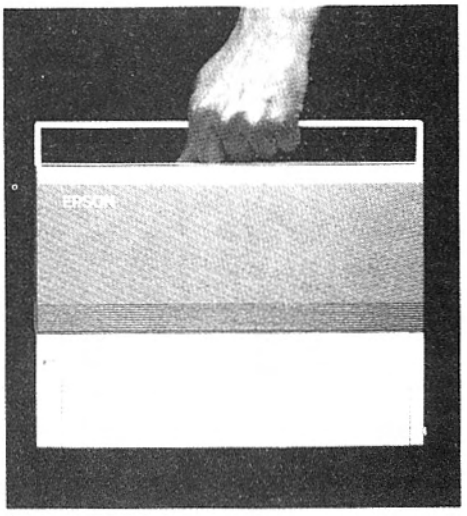
However, as far as value for money goes, there could be competition from the existing ''luggables''. But this system will win when either space or weight is a consideration.

New business micro

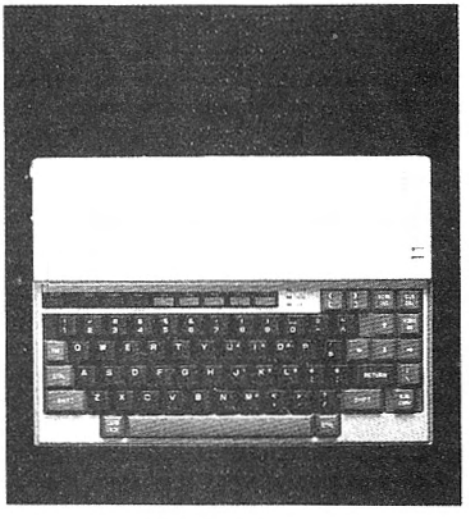
Commodore Business Machines' new 8296-D microcomputer, specifically designed for business use has dual 5¼in disk drive conveniently built into the porsche-designed cabinet containing the central processing unit (CPU).

Based on the 8096 micro-computer, it has 128K of memory on an 80-column display, and carries a full range of Commodore graphics and alpha-numeric set.

The dual disk drive has a capacity of 1.06 megabytes per drive and a maximum sequential file of 1.05 megabytes. The disk drive can access from track to track in five milliseconds. Up to 224 files can be stored on each disk.



The PX-8 — no larger and considerably lighter than a portable typewriter . . .



. . . Remove the protective panel to reveal the full-size keyboard . . .

. . . Flip up the large, legible display screen — and the PX-8 is ready to go to work.