

# *Chapter 1*

## **OVERVIEW**

The PX-8 is a portable computer which has more facilities than many desk top computers. This chapter will give you an idea of the general capabilities of the computer. The next chapter explain the features of the PX-8 so that they can be exploited to the full and you as a user can obtain maximum benefit from them in operating the computer. Some features are necessary for running the PX-8 normally and would be familiar to the user who has handled a microcomputer before, but others have been added to increase the power of the PX-8.

### **1.1 Unpacking Notes**

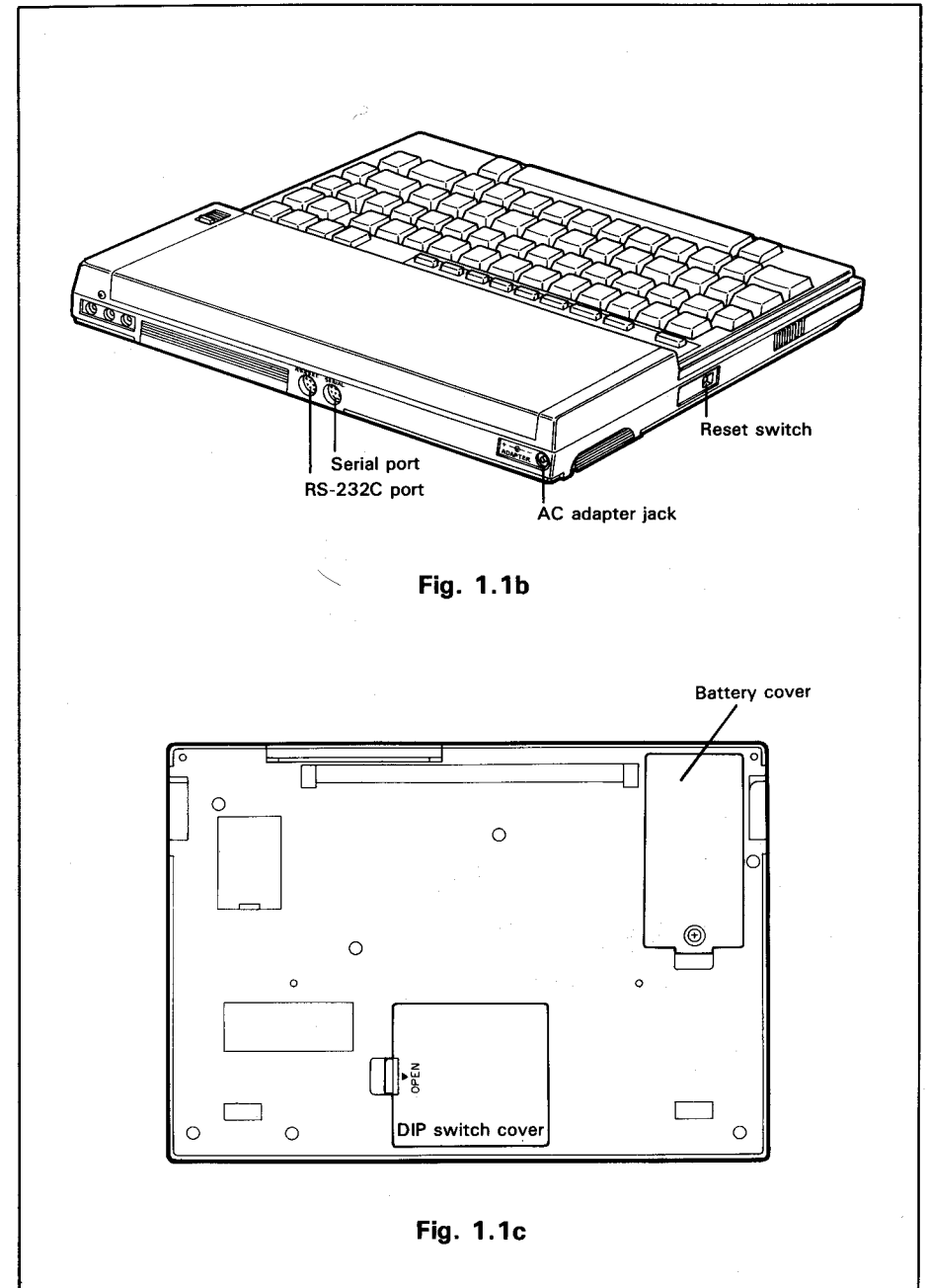
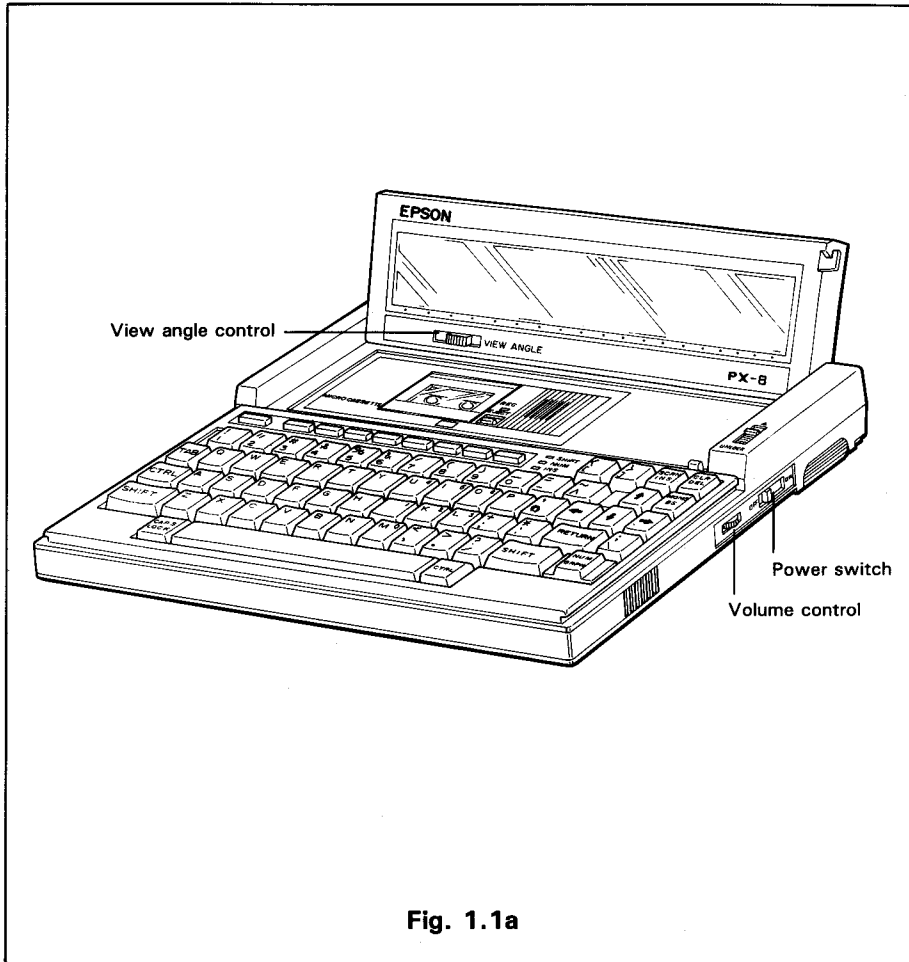
When you unpack your PX-8 package you should find the following items. Confirm that the following are contained in the package. Please keep the packing materials in case the PX-8 needs to be returned for any reason.

- PX-8
- AC adapter
- User's Manual (this manual)
- BASIC Reference Manual
- Command Summary
- End-User License Agreement
- Programmable Function-Key Label

## 1.2 Hardware Configuration

This section describes the hardware components of the PX-8. All the hardware components required for basic operation are built into a single unit. These include the central processor units (CPUs), memory, keyboard, display, microcassette tape deck and interfaces for a printer and serial communication with other devices including disk drives.

Figures 1.1a to 1.1c show the appearance of the PX-8 from several viewpoints.



## 1.2.1 Configuration diagram

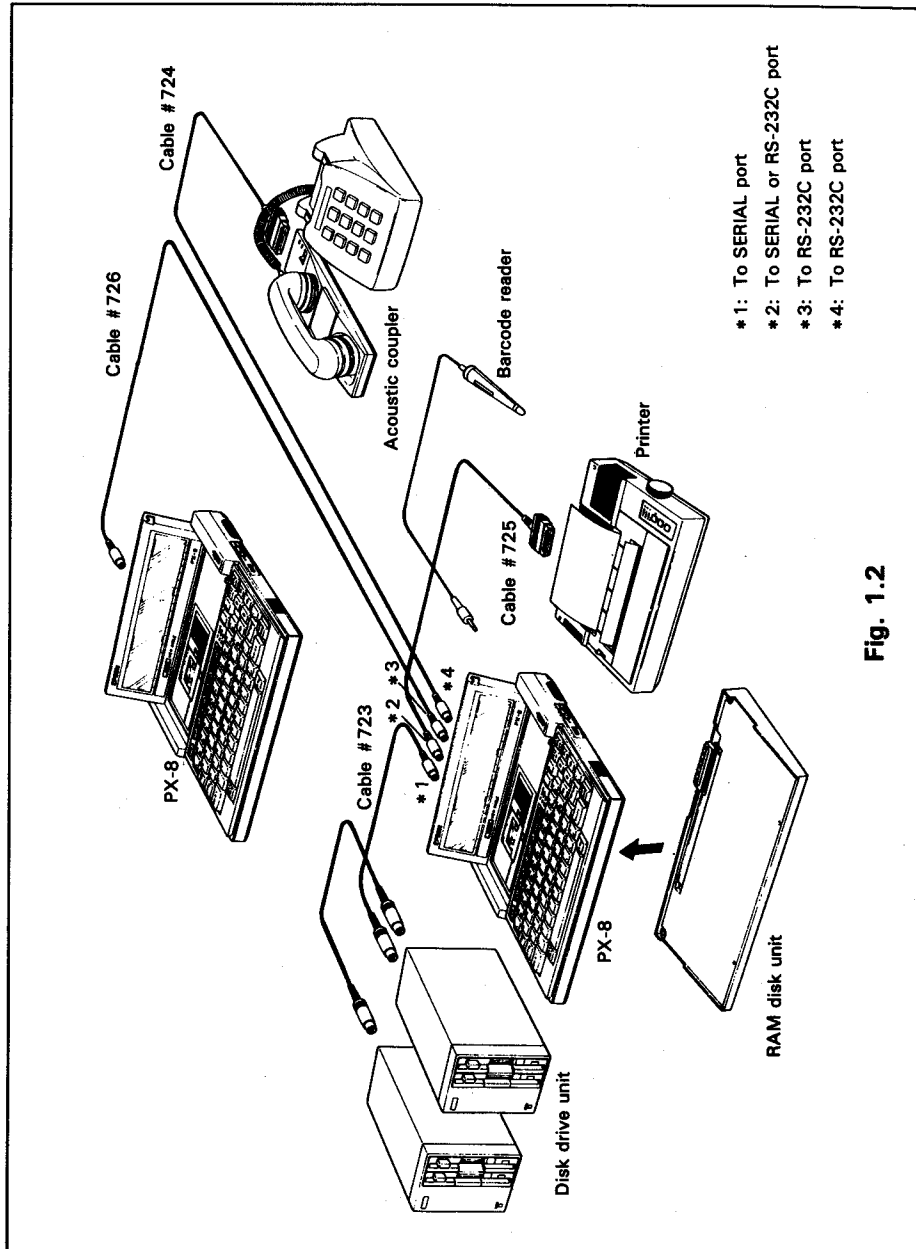


Fig. 1.2

## 1.2.2 The Carrying handle

The handle enables the PX-8 to be carried easily like a briefcase. It is possible to slide the handle up to the main body of the computer when not in use.

To extend the handle, place the index finger of each hand on the serrated portion of the handle, and pull it gently towards you, as shown in the diagram. To retract it, simply push the handle towards the computer using even pressure.

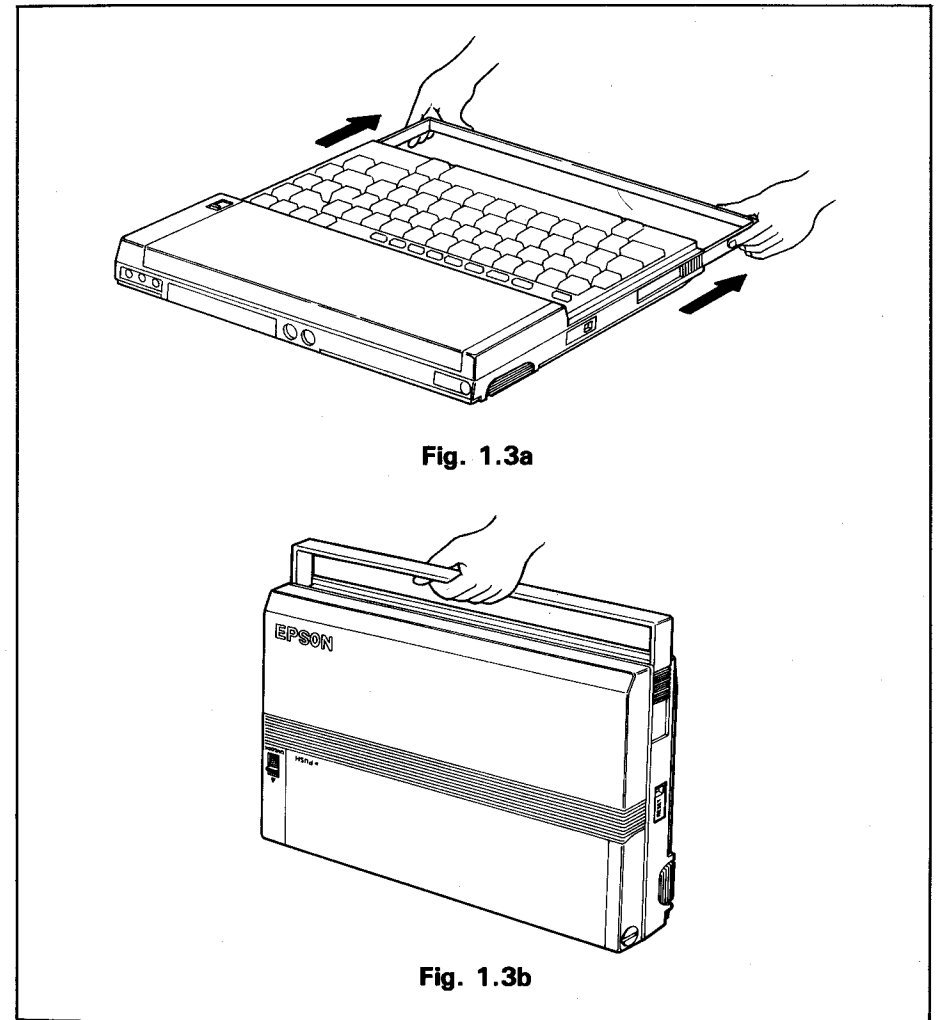


Fig. 1.3a

Fig. 1.3b

### 1.2.3 The keyboard

The keyboard is accessed by removing the protective cover.

To remove the cover, hold the PX-8 with the keyboard cover towards you and uppermost, preferably on a level working surface.

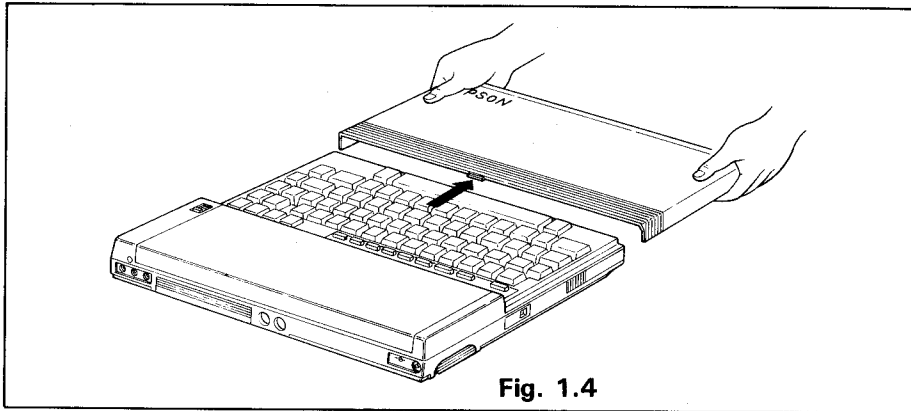


Fig. 1.4

Place the thumb of each hand on the top of the cover, with the other fingers on each side of the cover. Press gently with the index fingers to release the catch in the top centre (see the arrow in the diagram). Now pull the whole cover towards you using the both hands so that it slides off.

To replace the cover, place it centrally over the keyboard, so that the edges of the cover fit evenly on the guides. Push the cover home using the thumbs applying pressure evenly at both ends. Take care that the cover moves along the guides. Do not try to force it vertically down. If the cover is not in the guides, take it off and try again. Make sure the cover is fully up against the LCD screen and the catch has fitted firmly.

The layout of character keys on the PX-8 keyboard varies from country to country. The layouts available are as follows.

ASCII (USA)	Danish
French	Swedish
German	Norwegian
English	Spanish
Italian	

It is possible to change the display to that of any other country both by setting a DIP switch and under software control. In this manual, the ASCII keyboard is used as the standard for explanation.

The PX-8 is equipped with folding legs which makes it possible to change the keyboard angle. Opening these legs will make the keyboard easier to use when working with the PX-8 on a table or desk.

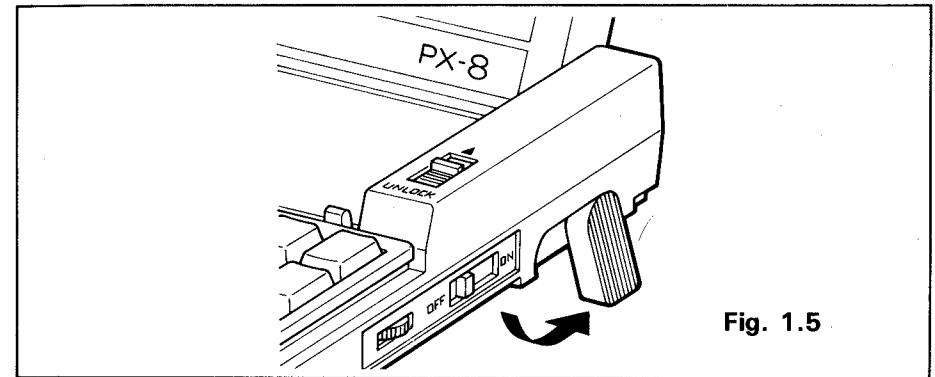


Fig. 1.5

### 1.2.4 Display

The PX-8 uses a large LCD display of 80 columns  $\times$  8 lines, on a hinge which can be folded down to protect the display when not in use.

Unlock the display by pressing the switch on its right toward the rear. When the display pops up slightly, open it by hand.

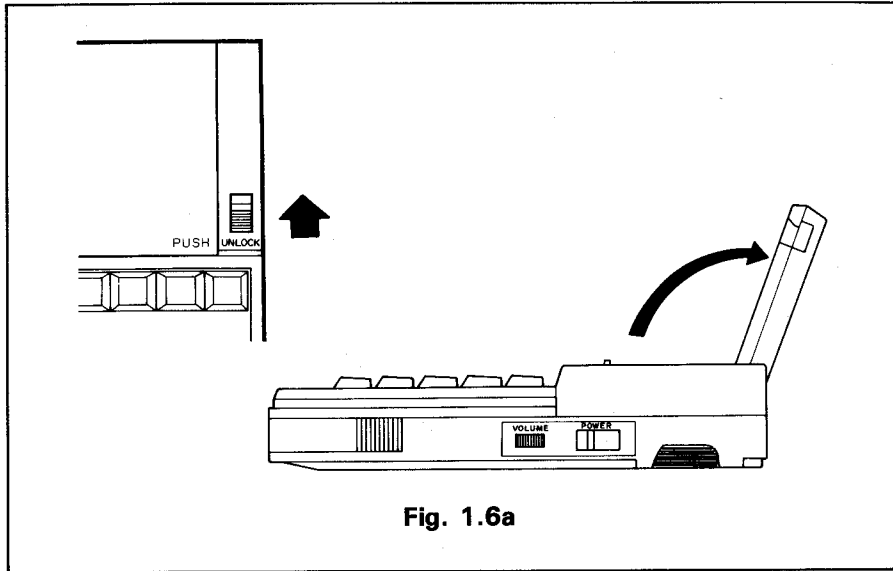


Fig. 1.6a

The view angle control on the front of the display makes it possible to obtain the optimum contrast.

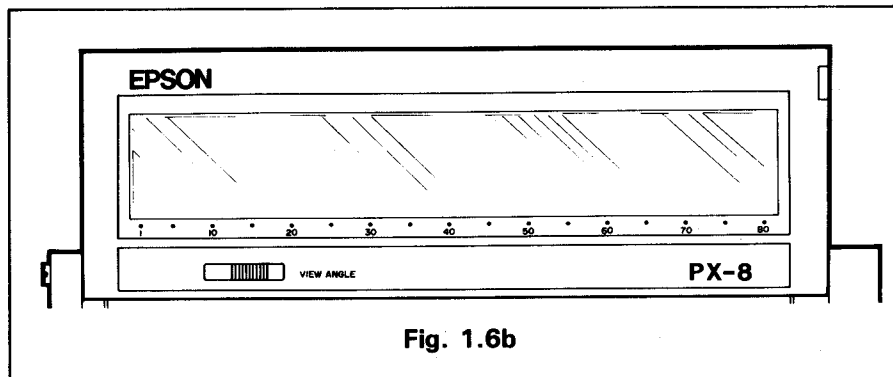


Fig. 1.6b

### 1.2.5 CPU and memory

The PX-8 has three central processor units. The main CPU is a Z80 compatible microprocessor. This controls the programs which are run on the PX-8. A slave CPU 6301 is used for display and Input/Output (I/O) control, i.e. communication with other devices such as printers, disk drives, the internal speaker, cassette drives etc. The sub CPU 7508 controls interfacing with the keyboard and the Analog/Digital (A/D) converter which allows signals from other devices to be read as voltages and converted into numbers the PX-8 can understand.

The main CPU controls 64K bytes of RAM and 32K bytes of ROM. The slave CPU has 6K bytes of RAM (used as video RAM) and 4K bytes of ROM.

All RAM is backed up by built-in batteries so that the contents can be retained when the power switch is turned off.

### 1.2.6 Microcassette tape deck

The PX-8 is equipped with a microcassette tape deck which can be used for saving data and program files sequentially. The microcassette tape deck is controlled manually or by software.

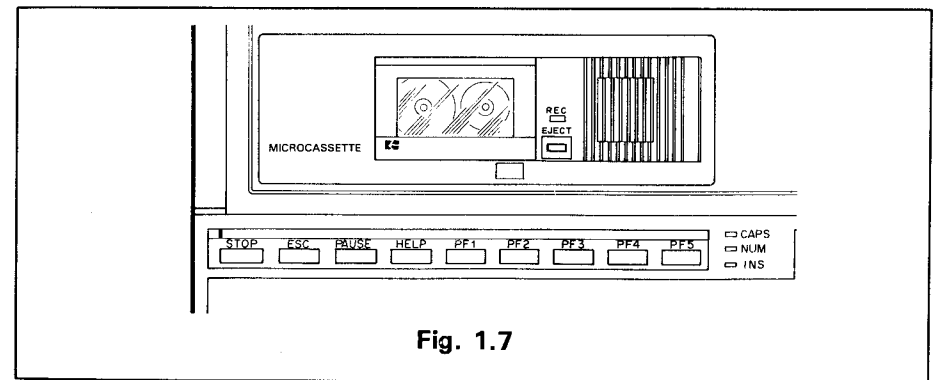


Fig. 1.7

The maximum number of files which can be stored in a microcassette is 12. This restriction is due to the size of the directory on the cassette tape.

## 1.3 Software Configuration

### 1.3.1 Operating systems

The operating system of the PX-8 is an extended version of CP/M which is one of the most popular operating systems for small business computers and personal computers. CP/M is an abbreviation for Control Program for Microprocessors. This operating system was developed by Digital Research and is a very popular operating system on microcomputers because programs developed under CP/M can be used with minimum modification on any computer using the CP/M operating system. This makes a vast library of application programs for this system instantly available commercially, whereas with a new operating system they would have to be written specifically for the operating system. EPSON has added a variety of useful functions to CP/M version 2.2 in developing the PX-8 operating system. Further details of the use of CP/M on the PX-8 are given in Chapter 3.

### 1.3.2 Utilities

The PX-8 has the ability to use programs loaded from the built in microcassette tape or from floppy disk (using the optional disk unit), but it has a more powerful facility to use programs which reside in ROMs which can be plugged into the sockets underneath the computer. This is a more convenient method of storing programs than either tape or disk, since the programs are available almost immediately, whereas with disk and tape it can take a noticeable time to load them into memory.

- **BASIC**

The PX-8 is equipped with a powerful BASIC interpreter which is an extended version of Microsoft BASIC which is a language widely used for personal computers. Programs can be written by the user and are also available commercially. There are also listings of such programs printed in books and magazines which can either be typed in and run directly, or will require a minimum of modification. Extra commands have been added to cater for the added features of the PX-8.

For details of BASIC, refer to the BASIC Reference Manual.

- **Portable WordStar™**

The word processor WordStar™ is one of the most popular wordprocessing programs available on microcomputers. Portable WordStar™ is an enhanced version of the Micropro WordStar™ which been specially modified to take account of the features of the PX-8. Whereas the PX-8 can be used directly as a wordprocessor with the WordStar ROM installed, the files can be transferred to other computers using the built in communications port of the PX-8. This means that the PX-8 can retain its portability where necessary and another computer used for the main processing.

- **Portable Calc™**

Apart from use as wordprocessors, the other main impact on the business world made by microcomputers has been in the area of electronic spreadsheet programs. The Portable Calc™ program is a ROM based program in this category.

- **Portable Scheduler™**

Because of the built in clock facility of the PX-8, the computer is ideal for keeping a diary. The Portable Scheduler™ is a program which keeps a diary which not only allows a record of the users appointments to be kept, but also enables the time to be signalled using the ALARM function of the PX-8.

These utility programs are available as optional ROM capsules. For details of their use refer to the reference manual for each utility program. They represent a small proportion of the software available. Please consult your dealer for the particular application you require.