Chapter 2

PTS HARDWARE

2.1 General Description

PTS hardware can be divided broadly into three categories: the terminal computers themselves, terminal devices and non-terminal devices.

The terminal computers provide maximum memory sizes between 64 kilobytes and 256 kilobytes. A maximum of 32 terminals may be connected to one terminal computer, as well as the range of non-terminal devices.

Terminal devices are the devices used to form the terminals (often referred to as workstations) used by the operators of the system. These devices are normally `dedicated´ to one work position in the bank.

Non-terminal devices are devices such as disks and line-printers that are available to be used by any terminal on request, under the control of the application program.

Within this general framework, a further subdivision of terminal devices can be made, as explained in Chapter One. Terminal devices can be intended for use mainly in the front office or mainly in the back office, although there is obviously some overlap between the two areas.

2.2 Front Office Equipment

The devices used to make a Front Office terminal are normally a keyboard, a printer and a display.

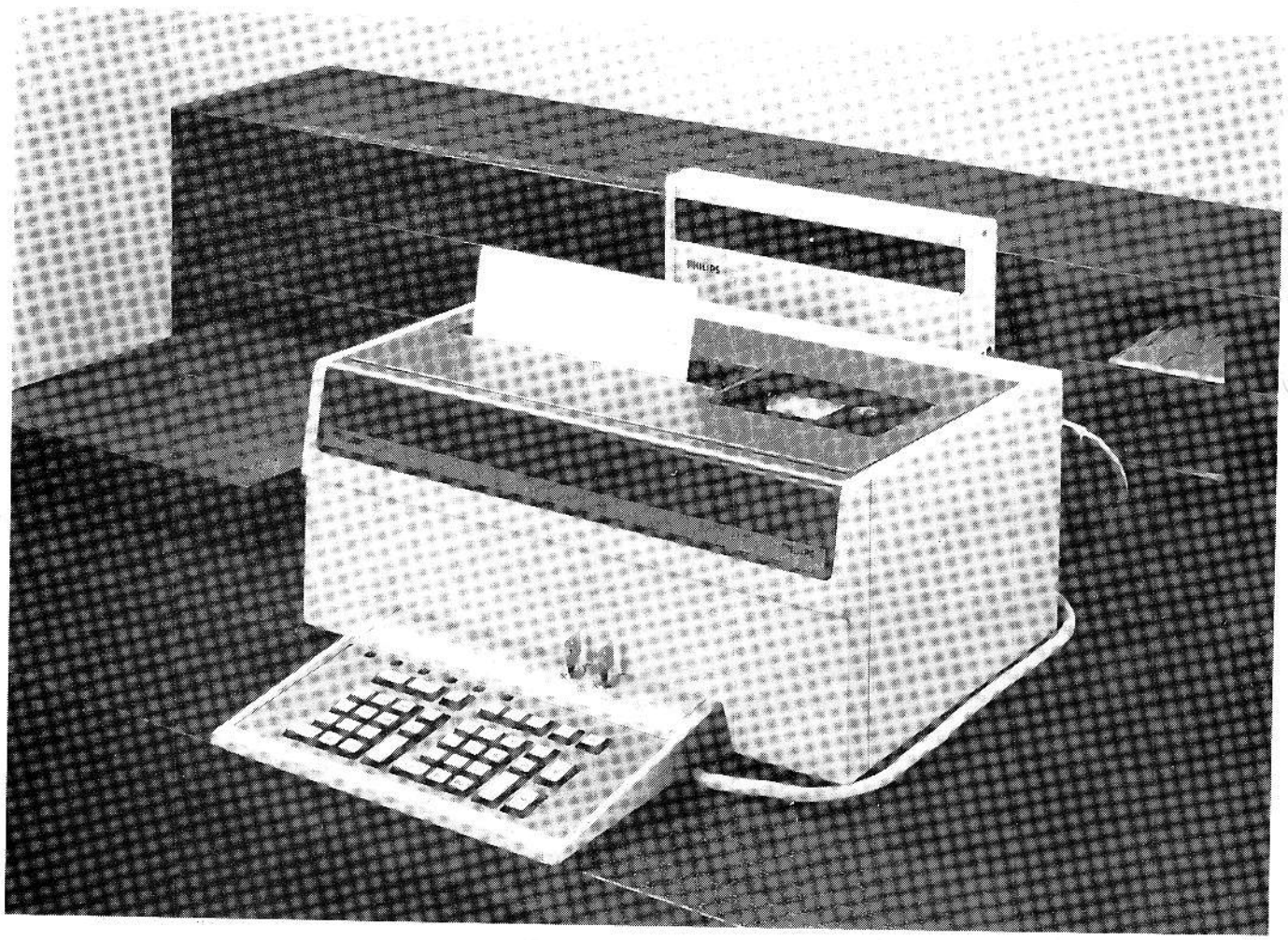

Fig. 2.1 Example Front Office Terminal Configuration

2.2.1 Keyboards

The keyboard may be a full alphanumeric version, incorporating separate numeric and function key clusters, but is more frequently a `numeric´ keyboard, so called because it contains only the numeric and function key clusters. The function keys are those used for such things as cursor movement and as end-of-item keys. They do not generate `printable´ characters and have no predefined functions. Their meaning is entirely application-dependent.

Both types of keyboard are equipped with lamps which are controlled by the application program. These lamps may be turned on and off or may be flashed, to act as simple prompts for the operator. The keyboards may also have keylocks to allow the application to restrict use of certain types of transaction for security purposes. The application can record

the positions of the locks and prevent unauthorised staff using restricted transactions.

2.2.2 Displays

Like the keyboard, the display used in the Front Office is usually a small version, such as a plasma display. Full-size screens of up to 1920 characters are available, but are normally reserved for use in the Back Office.

2.2.3 Printers

The main output device for a Front Office terminal is the Teller Terminal Printer, a unit containing two or three print stations. One print station (the document station, sometimes referred to as the voucher station) is used to print on pre-printed documents such as pass-books or vouchers. Documents are inserted into the printer by the cashier and are positioned by the application program before printing occurs. Another print station (the journal tape) is for logging the transactions on a standard paper roll for the bank's own internal accounting purposes. In some printers, a third print station (the tally roll printer) is present to print a receipt for the customer.

2.2.4 Badge Card Reader

A Badge Card Reader is available to read the magnetic stripe on a credit card. This may be used to identify the customer without the cashier having to enter an account number from the keyboard. This may allow individual transactions to be handled more quickly.

2.2.5 Financial Terminal

The more commonly-used Front Office devices are also available combined into one unit, the Financial Terminal. This unit contains a numeric keyboard, as described above, a two line (32 characters per line) display, and a journal printer, all in one device. A document printer may be included in the financial terminal if required.

A Personal Identification Number (PIN) keyboard and customer display may be connected to the financial terminal. The PIN keyboard is a small keyboard containing only the ten numeric keys and two function keys, one an enter key, the other a correction key. This keyboard can be used by the customer to enter his own personal (confidential) identification number and other data. The customer display is a one-line display.

The financial terminal may also be equipped with a cash drawer to enable it to be used as a point-of-sale terminal.

2.2.6 Teller Note Dispenser

Another device designed to assist the cashier in his duties is the Teller Note Dispenser. This unit contains up to six different denominations of banknote, new or used or a combination of both. The notes are stored in cassettes within the unit. When a customer withdraws money from his account, the notes are counted and dispensed automatically. This allows the cashier to work faster while ensuring accurate counting of the notes dispensed.

2.2.7 Magnetic Stripe Unit

A magnetic stripe unit is available to read from and write to the magnetic stripes present on credit cards and certain types of passbook.

2.3 Back Office Equipment

Back Office terminals are, like those in the front office, configured using a keyboard, a printer and a display. However, the actual devices present are often different from those used in the Front Office, as the Back Office has different functions to perform.

Fig 2.2 Example Back Office Terminal Configuration

2.3.1 Keyboards

Whereas Front Office terminals may use a numeric keyboard, Back Office terminals will almost certainly use a full alphanumeric version. The transactions processed in the Back Office require more information to be entered, and much of this will be non-numeric information.

2.3.2 Displays

Similarly, the transactions are likely to be more complex in the back office, requiring the operator to deal with larger volumes of information. Therefore, Back Office terminals normally use a full-size Visual Display Unit (up to 24 lines of 80 characters) rather than the smaller displays employed by the cashiers.

2.3.3 Printers

The printing requirements of the two types of terminal are also different. The small sizes of paper handled by the Teller Terminal printers would be inadequate for the often fairly large reports generated in the Back Office. A different type of printer, a General Terminal printer, is normally employed here. This type of printer prints on continuous fan-fold stationery and is thus more appropriate to the needs of this type of transaction.

2.4 Non-Terminal Devices

To complement and support the various terminal devices in both the Front and Back Offices, other devices are obviously necessary. A full range of peripheral equipment is available to allow the computer to operate efficiently.

2.4.1 Disks

To maintain the files of a particular bank branch, disk drives are available for both flexible and hard disks. Flexible disks may be of 256 kilobytes or 1 megabyte capacity, hard disks range from 2.5 to 80 megabytes capacity.

If the PTS computer is sending transaction details to a mainframe computer as they are processed in the branch, it is likely that it does not require its own files. Only an emergency back-up facility is required to deal with problems that may arise if, for any reason, the line is unavailable. In this case, it may be possible to log the transactions on flexible disk, for transmission to the mainframe when the line is restored.

2.4.2 Line Printer

If very large reports are to be produced, a line printer is available. Although a General Terminal printer may be used for such reports, it is a relatively slow device, and the use of a line printer may show a significant increase in speed of processing. However, the line printer is normally reserved for the development environment, where large reports such as program listings are frequently required.

2.4.3 Other Devices

Other devices available primarily for the development environment include magnetic tape drives, a console typewriter and a card reader.