Merlin

British Telecom Business Systems

User guide

M2105 messaging terminal



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Safety information

The equipment must be earthed.

Never use equipment with damaged or worn mains cables and connectors.

Always disconnect the equipment from the mains before unplugging individual units.

Do not remove the equipment covers.

Do not trail wires under carpets or where people might trip over them.

Do not restrict the ventilation of the equipment.

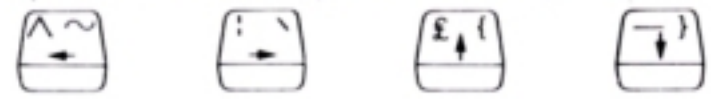
Under no circumstances should the mains adapter be replaced by any other power supply.

APPROVED for use
with telecommunication systems run by British Telecommunications in accordance with the conditions in the instructions for use.

S/1000/3/E/500047

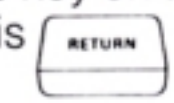
Conventions used in this guide

[←] [→] [↑] [↓] represent the keys on the top right of the keyboard, looking like this



which move the cursor left, right, up and down.

The cursor is the highlighted 'square' which appears on the screen at the position where the next character you type will appear.

[RETURN] represents the key on the extreme right of the keyboard, looking like this 

[FUNC] represents the key on the extreme left of the keyboard, looking like this 

Press [FUNC] Q means press the key labelled CAPS LK FUNC, and *whilst still holding it down*, press and release the Q key once. Then release the CAPS LK FUNC key.

Any other keyboard characters, letters or numbers, shown as following [FUNC] are typed in the same way.

This guide is for use with the unprivileged version of the M2105 terminal. Use of the terminal with Prestel, VDU and Forms creation facilities is covered in the M2105 Advanced User Guide.

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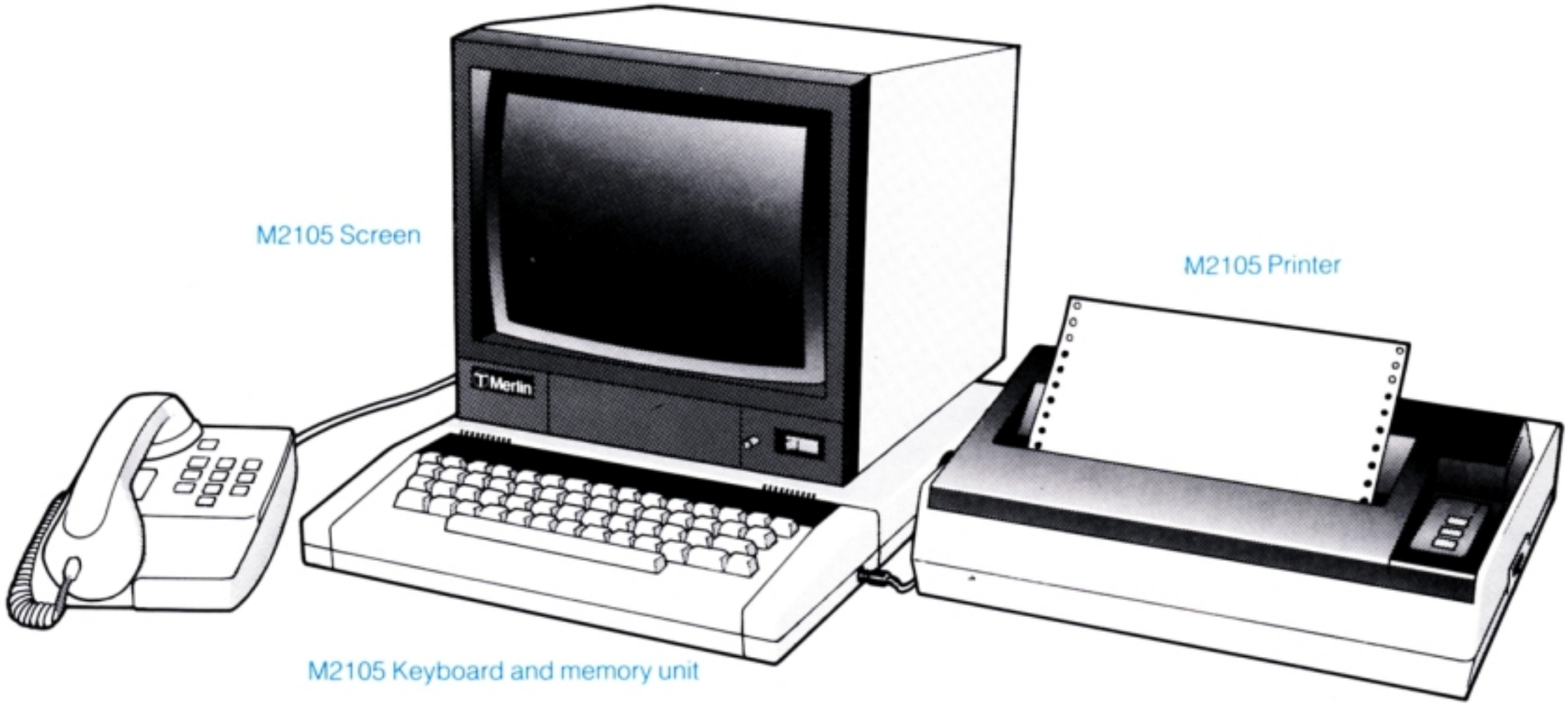
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The M2105 terminal



In your day-to-day business relationships, you communicate with other people basically in speech or in writing. You probably do a good deal of communication by telephone, because you can make contact and pass or receive messages quickly and efficiently.

Other communications, for various reasons, need to be written ones, whether brief or lengthy, straightforward text or completed forms. Inevitably a slower process, whatever sort of delivery system is used, and sometimes unacceptably slow.

The main purpose of the M2105 terminal is to use the immediacy of the telephone system to transfer these written communications as printed documents fast, reliably and automatically.

The M2105 is designed for efficiency and simplicity of operation, whether for the already proficient or for the first time user.

This guide describes its use in detail.

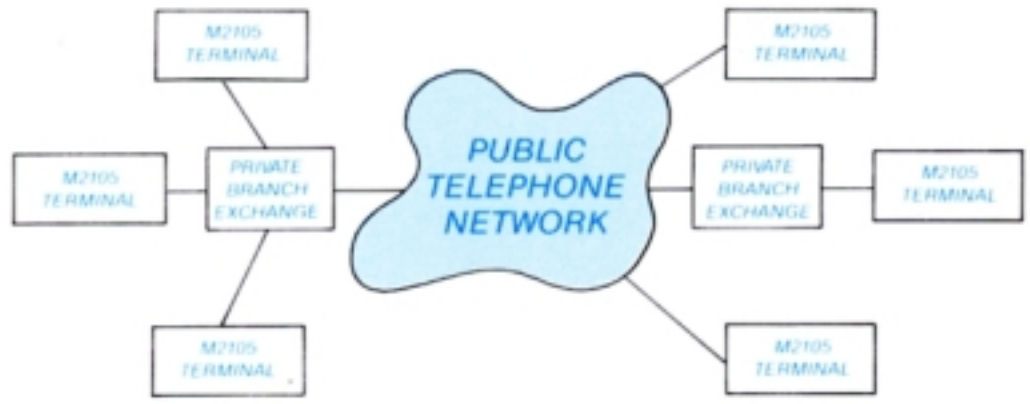
How the M2105 sends and receives messages: an outline

Wherever there is a telephone which is connected either to a direct line or to a simple telephone extension, the M2105 can be plugged into the same telephone wall socket as the existing telephone.

When the terminal is to send a message, once the destination telephone number (or numbers) are added to the message, the terminal automatically dials the number and establishes contact with the distant M2105, which automatically answers the call. It then sends the message to the receiving terminal, which prints it immediately.

It makes no difference whether the destination telephone number is in an office at the end of the corridor, in an office ten floors down in the same building, in a nearby building, or at the other end of the country. The whole process of sending a message takes only a matter of minutes.

If you are using the terminal, it is not necessary to be present to make or take telephone calls, because if a connection cannot be established on the first try, the terminal automatically tries again later. A receiving terminal automatically answers and prints out whatever message is being sent to it.



If your terminal needs to be installed and connected, turn now to page 62.

Screen displays:

```
SYST.MODE  WORK
```

If your terminal needs to be switched on and 'initialised', turn to page 74.

Screen displays:

```
EDITING  WORK
```

If your terminal is already installed and ready for use, or in use, you can take the opportunity of some immediate experience on the terminal keyboard.

The next section offers practical instructions in the simple use of the terminal. It is designed for first time users, and if you are already familiar with what is described, go on to page 20.

More specialised usage of the M2105 is covered later on in this guide.



Using the M2105 for the first time

Using the M2105 for the first time

These simple instructions assume that the terminal has been switched on and initialised, and the words 'EDITING WORK' are displayed in the highlighted band on the lower half of the screen. (If this is not the case, turn to page). 'Editing' is the work you are about to do, and covers the process of typing text on to the screen or amending text already shown on it.

The display screen

The complete screen is divided into two halves. The upper part is the 'User' Screen, and this is the screen on which the work you do will appear.

The lower part is the 'Command' Screen, which is your 'control centre' where various commands ('the menu') will be displayed and confirmed, and where the terminal will 'prompt' and inform you.



The Command Screen may be asking you to 'Select Command'. Now hold down the FUNC key and at the same time press the 'Q' key once. The complete User Screen will appear. Now release the FUNC key.

Press the FUNC and 'Q' keys again in the same way, until the Command Screen is inviting you to 'Select Command'. Press them a third time and you have the User Screen again. Using the FUNC and 'Q' keys like this will always cause the terminal to alternate the screen display between the Command and User screens.

Look at the Command Screen and you will see highlighted bands along its top and bottom. These are divided into a series of sections displaying information about the terminal. All this, and the information within the screen, is explained fully later.

The keys

Using FUNC Q, Move into the User Screen. Now, using the keyboard as a normal typewriter, type the words 'THIS IS A MESSAGE'. Notice how the flashing block character, known as the cursor, moves along as you type. You may be typing in capitals, but if you want to type in lower case, (small letters) press and hold down the SHIFT key, and press the CAPS LK key once. Then release SHIFT. You will now be able to use SHIFT for capitals as on a normal typewriter.

Pressing and releasing CAPS LK and SHIFT in the same way will once again return you to capitals, and so on. When you are typing in capitals, the yellow light on the left of the keyboard will be illuminated.

You can ignore the legends on the lower lines of the keys: they are not used in this terminal at the moment.

The keys have an 'auto-repeat' function, which means that if you hold a key down, it will automatically continue to type the same character until you release it.

Editing your message

Using the [←] cursor key, move the cursor under the 'M' of MESSAGE. Press [FUNC] 'I' (for Insert Space) and open 3 or 4 spaces between the words.

The space will always be inserted on the right of the character under which the cursor is positioned. Close the message up again, by using [FUNC] 'D' (for Delete Character) and it will perform in exactly the opposite way, by deleting the spaces between the words.

If you keep on pressing [FUNC] D, you will start deleting all the characters on the rest of that line of your message. All you need to do is type back in any characters you have lost. You will also find that you can remove any mistakes by moving the cursor over the mistaken character or section and overtyping. You can also use the DELETE key whilst typing, where it will delete the character on the left of the cursor.

Now continue typing a message across the screen until you have completed another line or two. You will notice that as you go, the cursor moves down a line at a time, and the corresponding numeral '1' is highlighted each time on the right hand side of the screen.

You will also see that if a word is not completed by the time you reach the right hand edge of the screen, the complete word will automatically move down to the next line. This is called 'Wordwrap'.

[FUNC] C (for Close Gap) and [FUNC] O (for Open Gap), work on the same principle as [FUNC] I and [FUNC] D, but are used for deleting and inserting whole lines.

Try inserting a blank line between two of the lines you have typed. Press [FUNC] O and a one line gap will open between the line on which the cursor is currently positioned and the one above it.

Press the cursor key marked [←]. The cursor will move back along the line one space. If you keep the key pressed the cursor will continue to move along until you release the key and the same will happen if you press the [→] key, in a forward direction.

Position the cursor under the initial 'T' of your first word 'THIS', by using the [↑] [↓] and [→] [←] cursor keys. Now press [FUNC] I, and keep it pressed down until the whole message has moved right across the screen.

As the message moves across the screen, and hits the right hand edge, it will move down to the next line, word by word.

Position the cursor on the empty line, and close up the gap again by pressing FUNC C and your message returns to its original form. (But if you continue to press FUNC C your message will be deleted line by line until it no longer remains on the screen).

You can now continue to type your message. If you wish to insert some space between lines, or paragraphs, as you go, simply press the RETURN key. As you fill the screen a numeral showing the page number will appear on the right hand margin and allow the cursor to move down correspondingly.

As your message continues over a page (approximately 52 lines on the screen) the right hand margin numeral will change progressively to 2,3, and 4, in alternate normal and highlighted display.

Any part of the message currently displayed on the screen can be edited by using the cursor keys to go left, right, up and down, or the FUNC F or FUNC B keys to tab forwards and backwards (10 characters at a time).

Clearing the screen

If at any time you need to clear the screen and start again, press the FUNC and Q keys as described earlier, to bring you into the Command Screen. Now press the → key until the letters DD appear highlighted along the top edge of the Command Screen. Notice that the command you are selecting is expanded on the left of the Command Screen, in this case 'DELETE DOCUMENT'.

Press the RETURN key. Press the Y key to confirm your action, and press the RETURN key once more. Now press the FUNC and Q keys and you will be presented with a clear User Screen to start again.

Printing and sending your message

Now you can put together a message on the terminal, it's an easy matter to print it, or send it to another terminal.

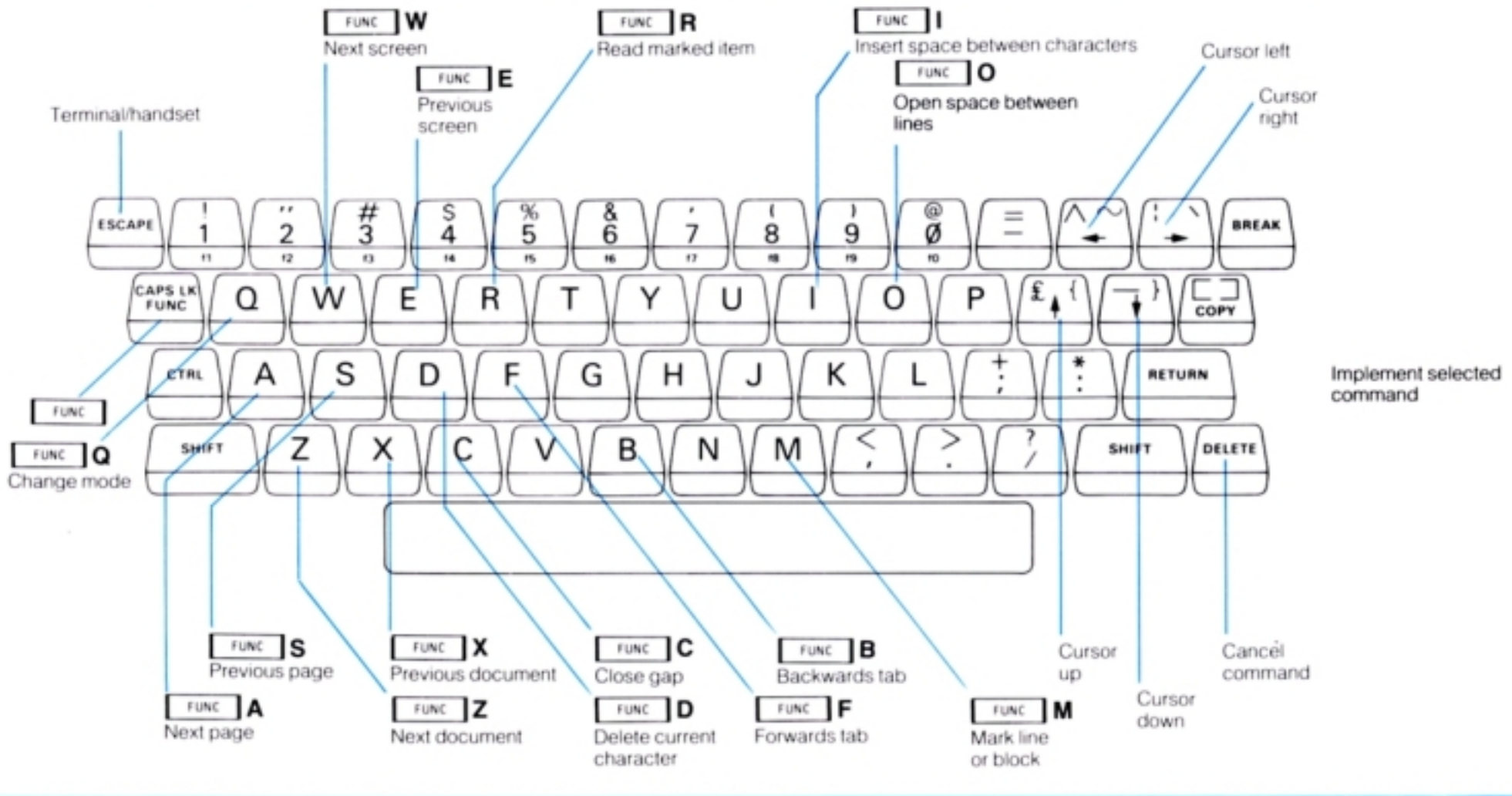
Try printing it. Press FUNC Q, to bring back the Command Screen. Press the → cursor key until the letters PR appear highlighted. Press the RETURN key twice. Your printer will print out the message you have typed on the screen.

You can send your message to another terminal just as easily, if you know its telephone number. Again, after you have typed your message on the screen, press FUNC Q. Now press the → cursor key until the letters QS appear highlighted along the top edge of the Command Screen. Press RETURN, once. You will see the cursor flashing in the Command Screen asking you to enter the telephone number of the terminal you want to send your message to. Type it in, making sure it is complete and correct. Press RETURN again.

Your message is now 'posted' and on its way, and the Command Screen will display information about its progress.

If you erase the message to clear the screen now, the message will still have been held in the terminal's files and can be brought back to look at or do further work on, as described later in the guide, on p24.

Don't worry at this stage about not fully understanding the commands. They will all be explained in detail later in this guide.



Summary of keyboard functions

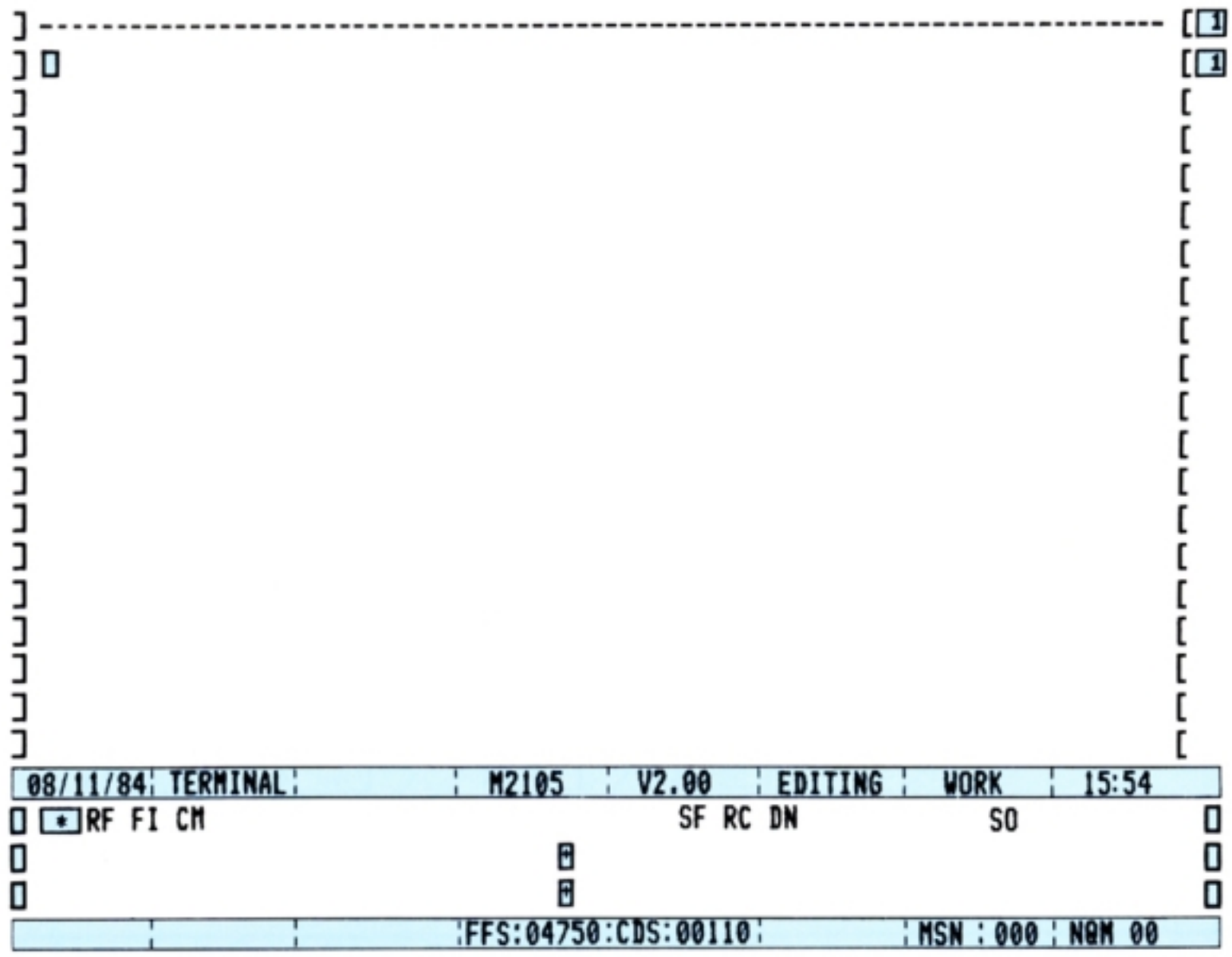
Use FUNC Q to switch between User and Command Screens.
Press CTRL with key to select top right character on keys with three characters.

Editing functions		Moving through files and documents	
FUNC I	INSERT space between characters	FUNC W	Display NEXT SCREEN (20 lines)
D	DELETE current character	FUNC E	Display PREVIOUS SCREEN
O	OPEN gap (insert new line)	FUNC A	Display NEXT PAGE (50 lines)
C	CLOSE gap (delete line)	FUNC S	Display PREVIOUS PAGE
F	FORWARD tab	FUNC Z	Display NEXT DOCUMENT
B	BACKWARDS tab	FUNC X	Display PREVIOUS DOCUMENT
FUNC M	MARK line or block/clear mark		
R	READ marked text into Work File		

The Display Screen

The diagram below shows how the screen is laid out in Editing Work mode, when in the Work File.

The Display Screen is split into two parts. The upper part is the User Screen and the lower part is the Command Screen. Both parts of the screen have a line width of 80 characters. The User Screen has a depth of 20 lines and the Command Screen a depth of 5 lines.



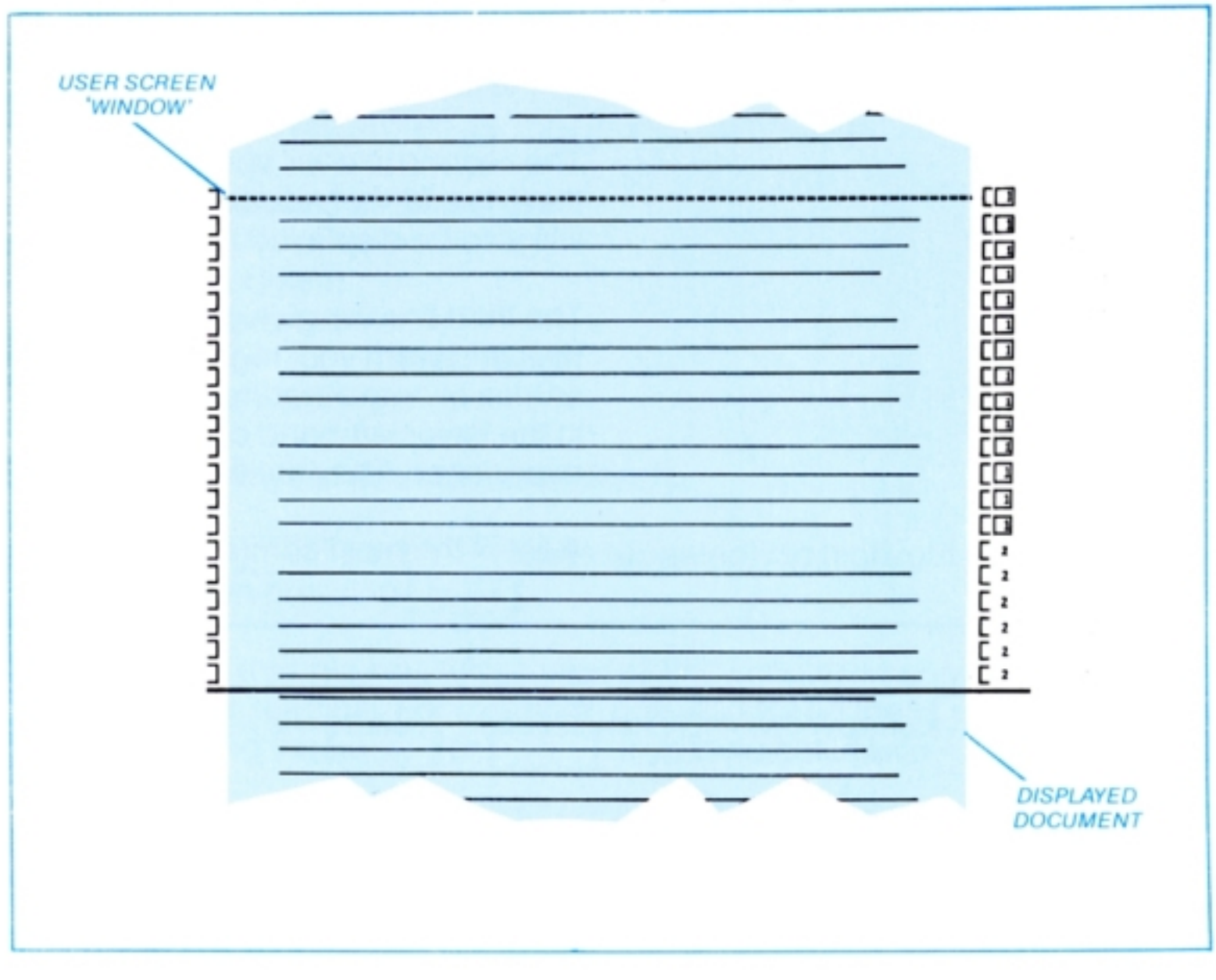
The left hand margin is shown as "]" characters and the right hand margin is shown as "[" characters plus a two digit number. The purpose of these brackets is to control the available line length to 74 characters, offset to the right of the paper. This leaves a blank left hand margin for punching and binding when the document is printed.

The two digit number on the right indicates the page number in the document being displayed. For page 1 and following odd-numbered pages, this number is shown highlighted. For page 2 and following even-numbered pages, it is shown normally. This makes it easy for the boundary between pages to be shown clearly, and helps you to position text in a multiple page document.

The User Screen

It is a good idea to think of the User Screen as a 20 line 'window' into the document being edited or reviewed. You can position this window in a number of ways. You can move it up or down by one line at a time, or 20 lines (one screen) at a time, or 52 lines (one page) at a time. Or reposition it to show the top 20 lines of the following or previous document. This is explained on p26.

Each page of a document is 52 lines long, except the first page, which is 51.



The Command Screen

The Command Screen comprises the bottom five lines of the Display Screen. It is your 'control centre' where various commands ('the menu') will be displayed and confirmed and where the terminal will 'prompt' and inform you.

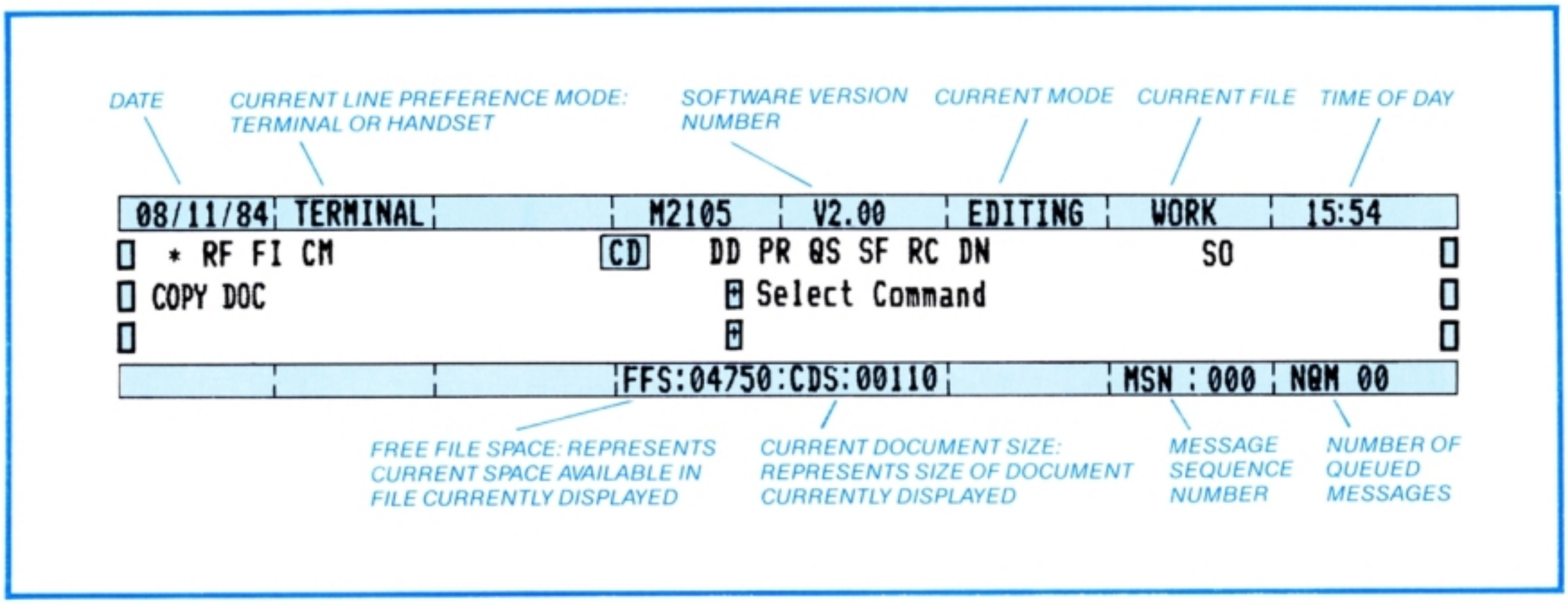
The diagram below shows the meanings of the various sections which make up the top and bottom highlighted bands.

The top line of the three lines displayed between the highlighted bands will offer you the choice of a number of commands, which will be highlighted when you select them. Not all of the commands will necessarily be displayed all the time - it depends on the mode of the terminal.

The second line will spell out the command in full on the left-hand side. Where there is a further additional option to be selected or an entry to be made, that will also be displayed to prompt you.

The third line will give you information on the terminal's status on its current task and warn you, together with a 'bleep', if you have omitted necessary entries or made incorrect ones. A number of different messages can appear in the lower left-hand corner and you will become familiar with them through experience. They are listed on p91.

A list of the most common commands is given on p96.



Using the Command Screen to select commands

Once a document has been prepared, whether a simple message or a form, there are a number of basic commands you carry out. You can copy it into other files, delete it, print it, or send it to another terminal. There are other commands which you can use, but for the moment take these four commands as examples.

To select a command, press [FUNC] Q to go into the Command Screen. You will see a 'menu' that looks like this

```
[*]RF FI CM          CD    DD PR QS SF RC DN          SO
```

These commands are known as 'mnemonic' commands.

The four commands concerned are:

CD – Copy Document
DD – Delete Document
PR – Print
QS – Queue for Sending

There are two ways of selecting commands.

1) By using the [→] or [←] keys repeatedly to highlight the required mnemonic, then pressing [RETURN].

2) By pressing a single key, which you will find simpler when you are more familiar with the terminal. For example, pressing P and then [RETURN] is a shortcut to using the [→] or [←] keys to select PR.

Where there is more than one command with the same first letter – e.g. CM and CD, a single press of 'C' will select CM. To select CD, press C followed by D.

So to select 'Copy Document' you would type CD and press [RETURN].

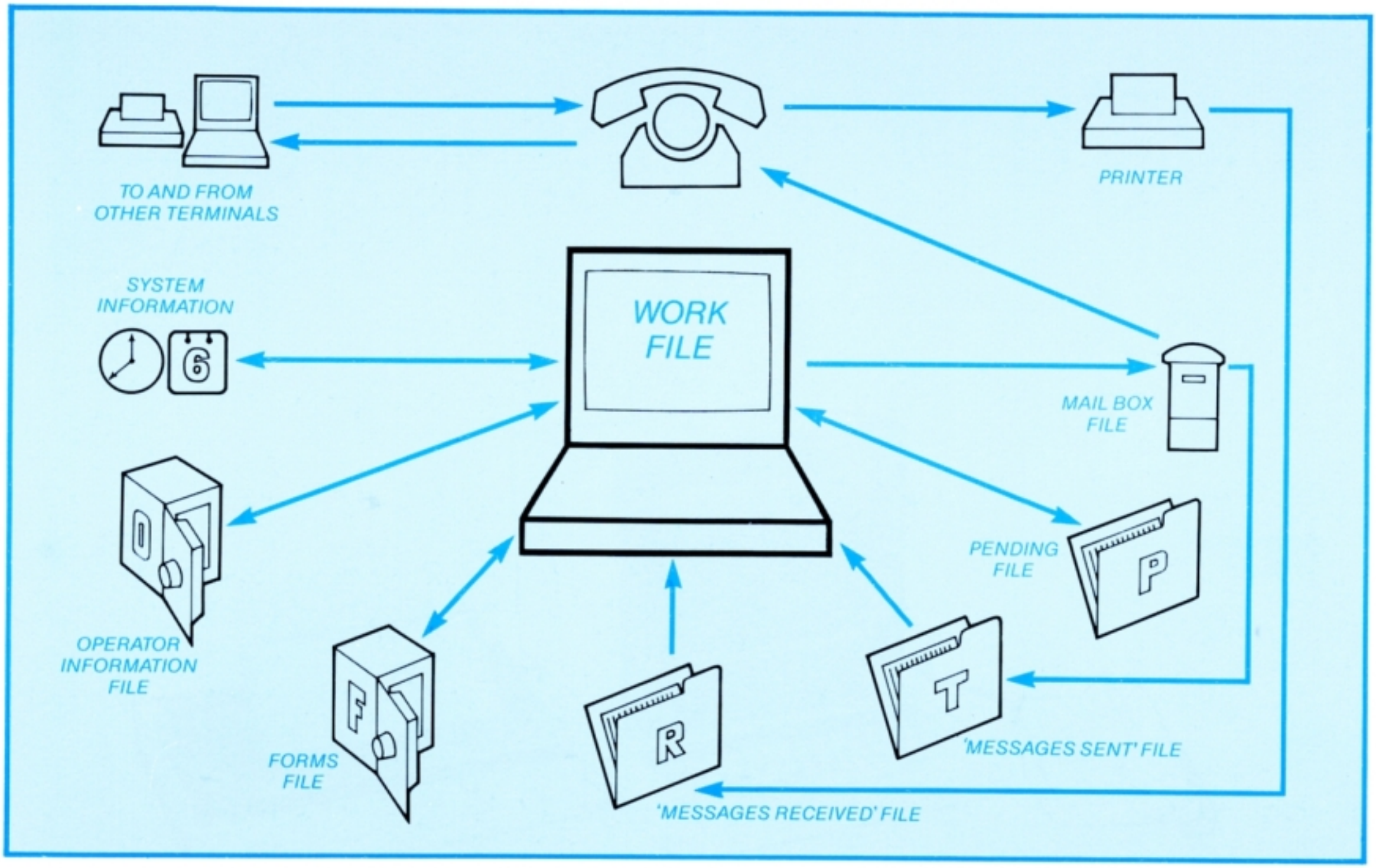
If you select any command by mistake you can cancel it simply by pressing the DELETE key.



How the M2105 works

to help you

How the terminal takes over office tasks



If you think how your terminal replaces the tasks you would need to perform if you were sitting at an ordinary desk doing the same work, you can quickly see the parallels.

Your display screen and keyboard becomes your medium for work output – writing communications, filling in forms. Instead of despatching letters by post and keeping carbon copies in 'out' trays and filing cabinets, you mail them via your own electronic postbox and the telephone system direct to their destinations, and they are filed in memory, where you can quickly review them.

Similarly, incoming communications land in your electronic 'in' tray, are printed and filed in memory. Where, again, you can review them.

You can also file material in your electronic pending file, and examine or amend it. Important or irreplaceable material like forms, or other information that must be held permanently, can be put away in your electronic safe.

How the files in the terminal are organised

The terminal holds seven different files of information. Their uses are described in the following pages.

The Work File	(W)
The Pending File	(P)
The Mail Box File	(Contents not accessible by user)
The Transmitted History File	(T)
The Received History File	(R)
The Forms File	(F)
The Operator Information File	(O)

The Work File (W)

The Work File, holds, in effect, the document which is currently being completed. It can contain only one document at a time, although of several pages.

Documents can be copied to or from the Work File or deleted. No editing can be done on a document unless it is in the Work File.

The Pending File (P)

The Pending File is used to hold temporarily any document which has been copied from the Work File or other file, and subject to space availability, it can hold any number of documents at a time.

It has three main uses. 1) to store an incomplete document while more information is collected 2) to store a document temporarily while another user makes use of the terminal 3) to retain temporarily a copy of a received or previously transmitted document. Documents in the Pending File can only be copied or deleted by the user.

The abbreviation PENDG is used for this File.

The Mail Box File

The Mail Box File is used to store documents which have been completed by the user and have been actioned for transmission using the 'Queue for sending' command.

Once 'posted' to the Mail Box File a document cannot be retrieved and copied back into the Work File for possible unauthorised modification before transmission. The 'mail' is protected, just as if it had been posted.

As soon as the document is put into the Mail Box File, the terminal automatically starts the process of dialling the telephone numbers on the document and transmitting it. This happens completely independently of any other action the user may be taking, so work can continue.

Immediately the document has been transmitted, it is automatically transferred to the Transmitted History File.

The Transmitted History File (T)

The Transmitted History File contains copies of the latest documents which have been transmitted, subject to space availability.

Only the terminal is allowed to copy documents INTO this file.

The file can be reviewed, so that parts, or the whole, of transmitted documents can be used in the creation of new documents in the Work File.

The abbreviation TXHST is used for this file.

The Received History File (R)

The Received History File contains copies of the latest documents which have been received, subject to space availability.

Like the TXHST file, only the terminal can put documents into this file.

The abbreviation RXHST is used for this file.

The Forms File (F)

The Forms File is used to store copies of blank forms. They can be withdrawn and copied to the Work File to be "filled in" as required.

Only forms can be stored in this file.

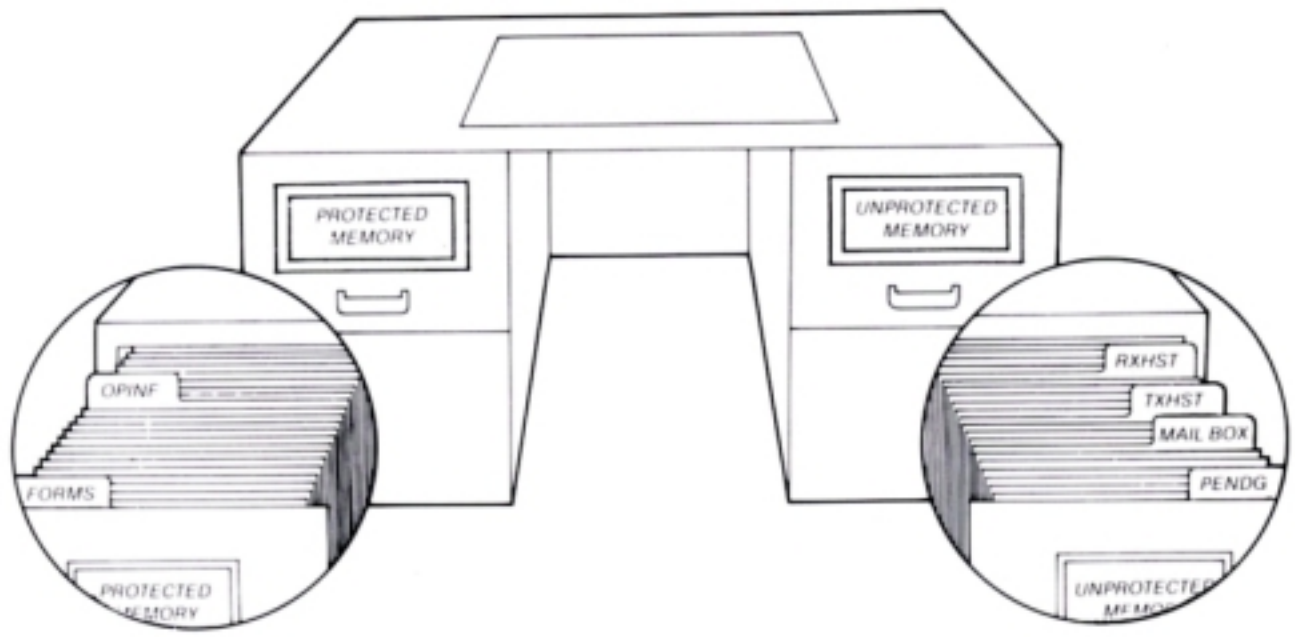
The Operator Information File (O)

The Operator Information File is for storing notes and information that is useful for continual reference, for example phone lists.

The abbreviation OPINF is used for this file.

Note The contents of the Forms and Operator Information files are in battery-protected memory which is semi-permanent. The contents will not normally be lost if the terminal is switched off for several days.

The Pending, Mail Box, Transmitted History and Received History files compete for space with one another rather like suspension files in one drawer of a desk. The Operator Information and Forms files also compete for space in a second 'drawer'.



The Transmitted History and Received History Files, like all the other files, can hold a limited amount of material; but in these files, documents are automatically deleted by being overwritten by copies of more recent documents.

Depending on whether the terminal is expected to be used principally as a transmitter or as a receiver of documents, it can be set to allow automatic expansion of one history file at the expense of the other (see p76).

You can always delete old copies of documents manually if required at any time.

Note The contents of the Work, Pending, Mail Box, Transmitted History and Received History Files are all lost if the terminal is switched off.

Important note about the terminal

The terminal is intended to be left switched on at all times and only switched off if it is to be physically moved, although the screen may be switched off independently or the brightness turned down.

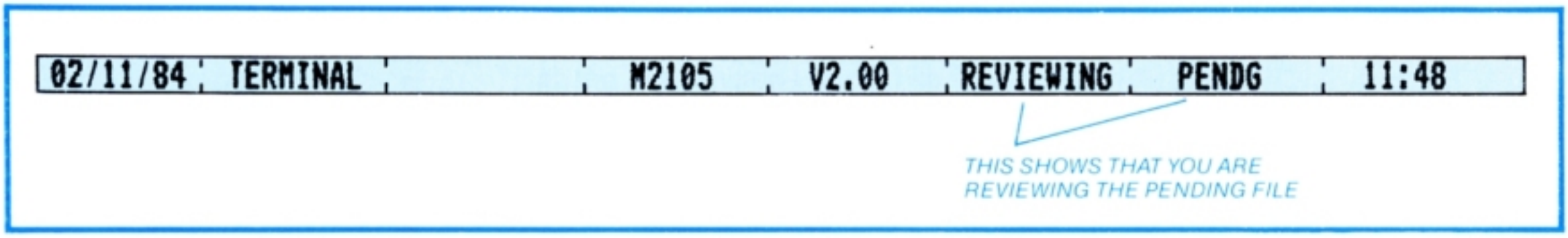
There are two reasons for this. Firstly, the terminal must be continually available to receive incoming messages from other terminals, and these could arrive at any time.

Secondly, the terminal stores copies of received and transmitted messages temporarily in its internal memory. If it is switched off, the effect is to delete all these stored copies and wipe out its 'unprotected' memory, and there are circumstances where this would be undesirable.

However, certain important operator information and copies of blank forms, which will have been stored in 'protected' memory, are retained for a period of several days even after the terminal is switched off and will still be available once it is switched back on again.

Reviewing files

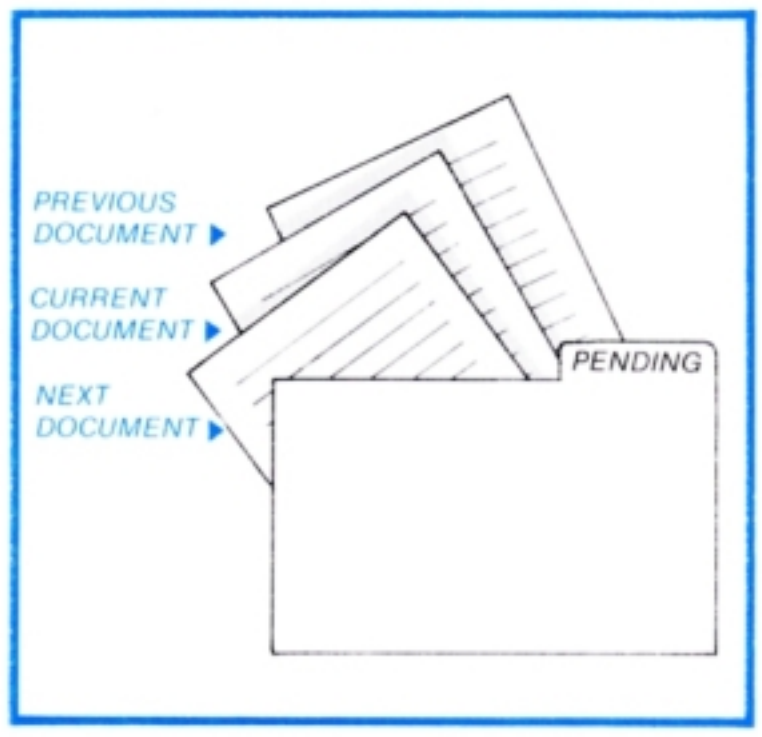
You can review any document in any file during reviewing or editing by using the REVIEW FILE command. The file you are reviewing on the User Screen will be indicated on the Command Screen.



After reviewing a document in one of the terminal's files, you may wish to return to the Work File. To do this, first move into the Command Screen, using FUNC Q. Key the command RS. Press RETURN and the terminal will 'RESUME' to Editing the Work File.

While you are in REVIEW FILE mode, you can scan within the document under review by using the NEXT/PREVIOUS SCREEN and NEXT/PREVIOUS PAGE commands as explained on p26. You can also scan through a document using the cursor keys. To do this, first use the FUNC Q command and then use the ↑ and ↓ keys to move through a document. This also enables lines to be selected for MARKING, as explained later.

As documents are arranged in the files in order, you need to use the NEXT/PREVIOUS DOCUMENT command to look at other documents in the file under review.



REVIEW FILE

Mnemonic RF

Allows access to any file except Mail Box for the purpose of examination, copying, deleting or marking

Keying Sequence

Press [FUNC] Q for Command Screen

Use keys to select RF

Press [RETURN]

Select file from options offered.
O = Operator Information
P = Pending
F = Forms
R = Received History
T = Transmitted History
Note that 'L' refers to the Last document you were reviewing.

Press [RETURN]
('bleep' signifies successful completion)

RESUME

Mnemonic RS

Allows return to Work File after reviewing a document

Keying Sequence

Press [FUNC] Q for Command Screen

Use keys to select RS

Press [RETURN]
('bleep' signifies successful completion)

Scanning through documents

When you are editing or reviewing, you may have to move quickly through a document, perhaps to the top of the next page, or when reviewing a file, to move to the next document. To make scanning quicker and easier, you can use some other functions and commands: NEXT/PREVIOUS SCREEN, NEXT/ PREVIOUS PAGE or NEXT/PREVIOUS DOCUMENT.

Next/Previous screen

This gives you immediate access to either the following or previous complete User Screen of 20 lines of data, by pressing [FUNC] W for NEXT SCREEN or [FUNC] E for PREVIOUS SCREEN.

Next/Previous page

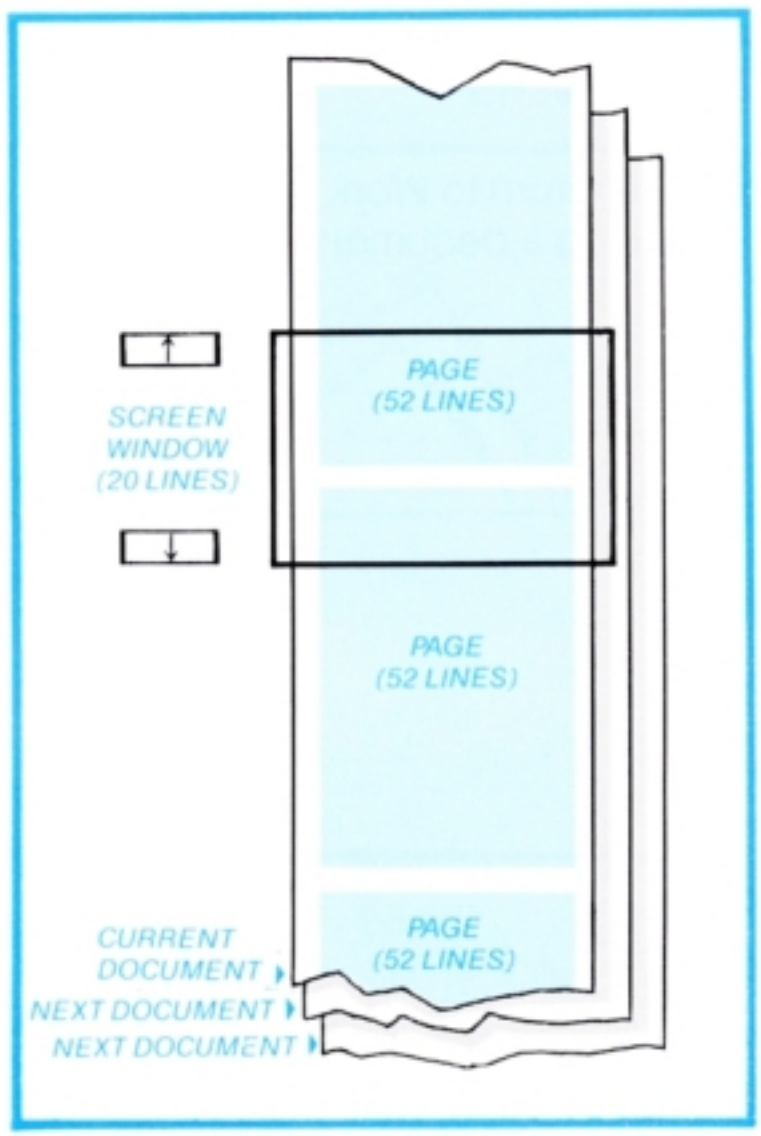
This gives you access to the first 20 lines of data in the next or previous page of the document, by pressing [FUNC] A for NEXT PAGE or [FUNC] S for PREVIOUS PAGE.

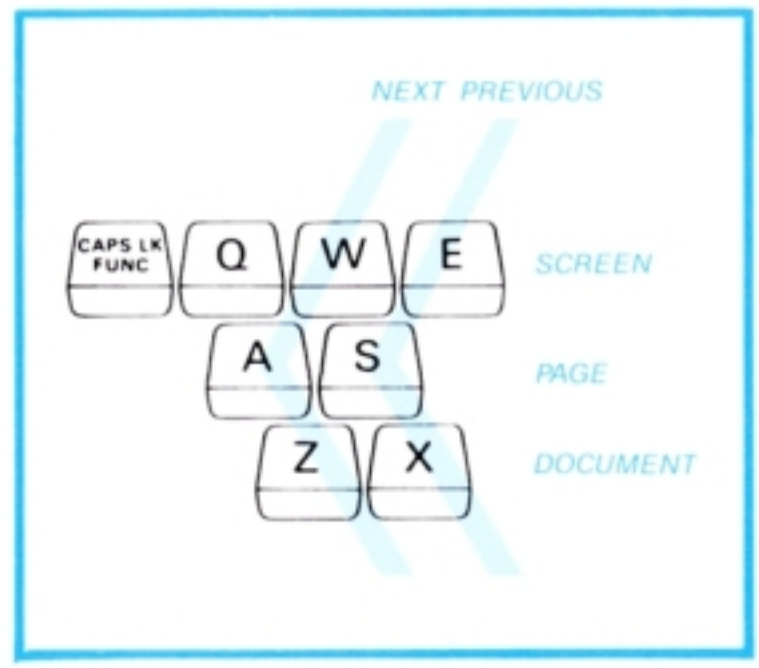
Next/Previous document

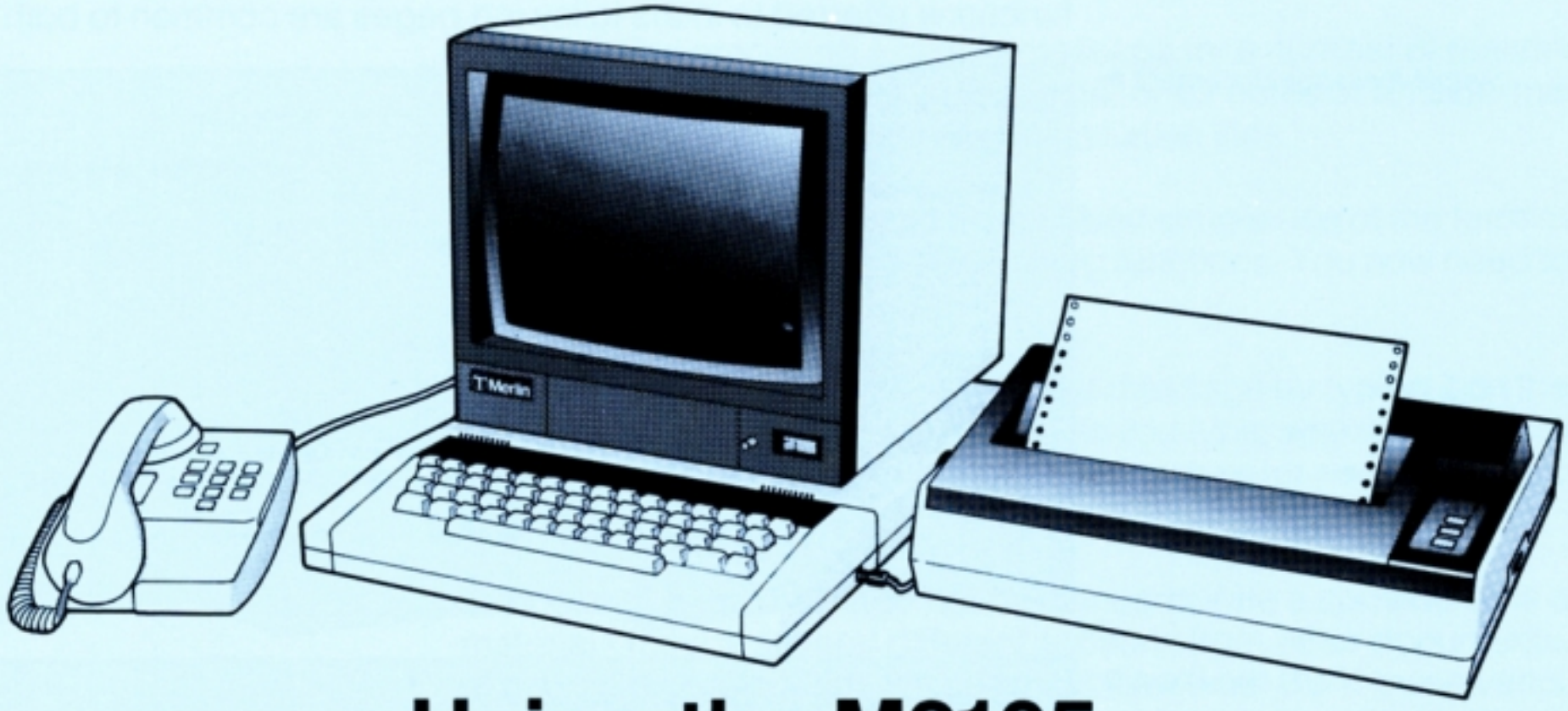
This gives you access to the first 20 lines of data in the next or previous document, by pressing [FUNC] Z for NEXT DOCUMENT or [FUNC] X for PREVIOUS DOCUMENT.

Once you have displayed any screen of information, you can also of course use the cursor keys to move the 'window' up or down by one line at a time.

The diagram below shows the convenient positioning of the NEXT/PREVIOUS keys.







Using the M2105 to prepare documents

Preparing documents

Now you are ready to prepare documents. If you refer to the Quick Reference Card with this guide, you will be able to keep by you a reminder of the keyboard layout and of the various commands and functions which will be referred to continually during the next section.

Documents can be of two kinds, simple messages or Forms.

A Form document contains 'fields' which are areas in a document which can be 'protected' or 'unprotected' from keyboard data entry. Forms are prepared on specially privileged terminals and may be sent to you to "fill in".

Though these two kinds of documents are prepared and sent in different ways, it is important to note that a number of the main commands and functions referred to in the following pages are common to both of them.

Simple message document ▶

```
: RX008 09/11/84 20:21 To:246 8043                                  PAGE 1 :
:                  A/BACK:01 246 8043          From:031 246 802:           :
: Actual Destinations    :246 8043                                         :


          Alison

          Please remember to check with Patterson & Forbes
          about the deliveries of material due on Thursday 20th.

          I will contact you tomorrow from Bridgend

          Colin
```

Form document ▶

```
: RX003 09/11/84 19:34 To:    246 8043                              PAGE 1 :
:                  A/BACK:01 246 8043          From:031 246 8021           :
: Actual Destinations    :    246 8043                                      :
:-------------------------------------------------------------------XXXX---:
:  (      CUSTOMER INFORMATION                                  )FORM   Ref (436 ) (7) :
:-------------------------------------------------------------------XXXX---:
: ADDRESSED TO (    246 8043                    )    PK (X)  SP (N)  UGC (43 ) :


          NAME (  Patterson & Forbes Ltd.                    )

       ADDRESS (  Unit 5, Southwick Trading Estate,          )
               (  Middleford, Beds  BG3 4AN                  )
               (                                             )
  TELEPHONE NO ( 021 246 8091                                )

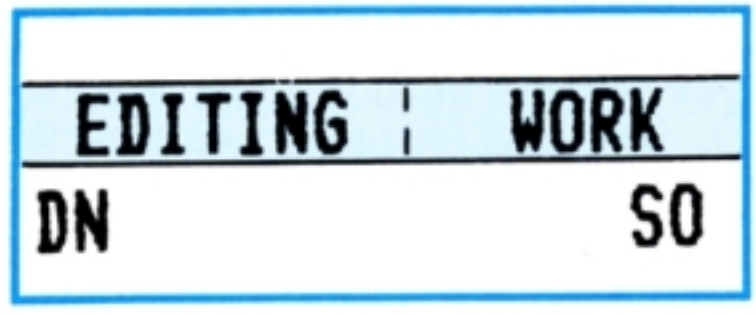
       TYPE OF (  Laundry equipment manufacturers            )
      BUSINESS

       CONTACT (  Mr. G Dunfee                               )
```

How documents are prepared

Documents are prepared by keying data into the User Screen.

When the Work File is empty, it is automatically in Editing mode. When a document is in the Work File, it is automatically in the mode of that document, i.e. simple messages or Forms mode. The Command Screen will be displaying the words "Editing Work".



You might be preparing a simple message for a number of reasons, perhaps as a plain letter, a message or a memo, or for notes or an aide-memoire to keep in the Pending or Operator Information files.

An earlier section of the guide described simple use of the terminal and covered the use of some basic editing functions. You now need to know about further commands.

Assume you need to prepare a simple message by typing it on the keyboard. You will see it on the display screen as you type, where you can make sure it is correct before you go through the procedure for sending it, as described later on.

Suppose that the message needs to incorporate a considerable amount of material - maybe several different sections from other documents. You could of course recreate them, which would take time. But if those various documents were already in your terminal files you could simply retrieve them, or sections of them, and insert them wherever you wish in your message.

This can be done by using the copying or marking facilities, as explained later. Before you can do this, you will need to look at other files in the terminal and trace the items you need, using the REVIEW FILE or FIND ITEM commands.

Once prepared, documents can be stored, deleted, transmitted or printed.

Storing documents

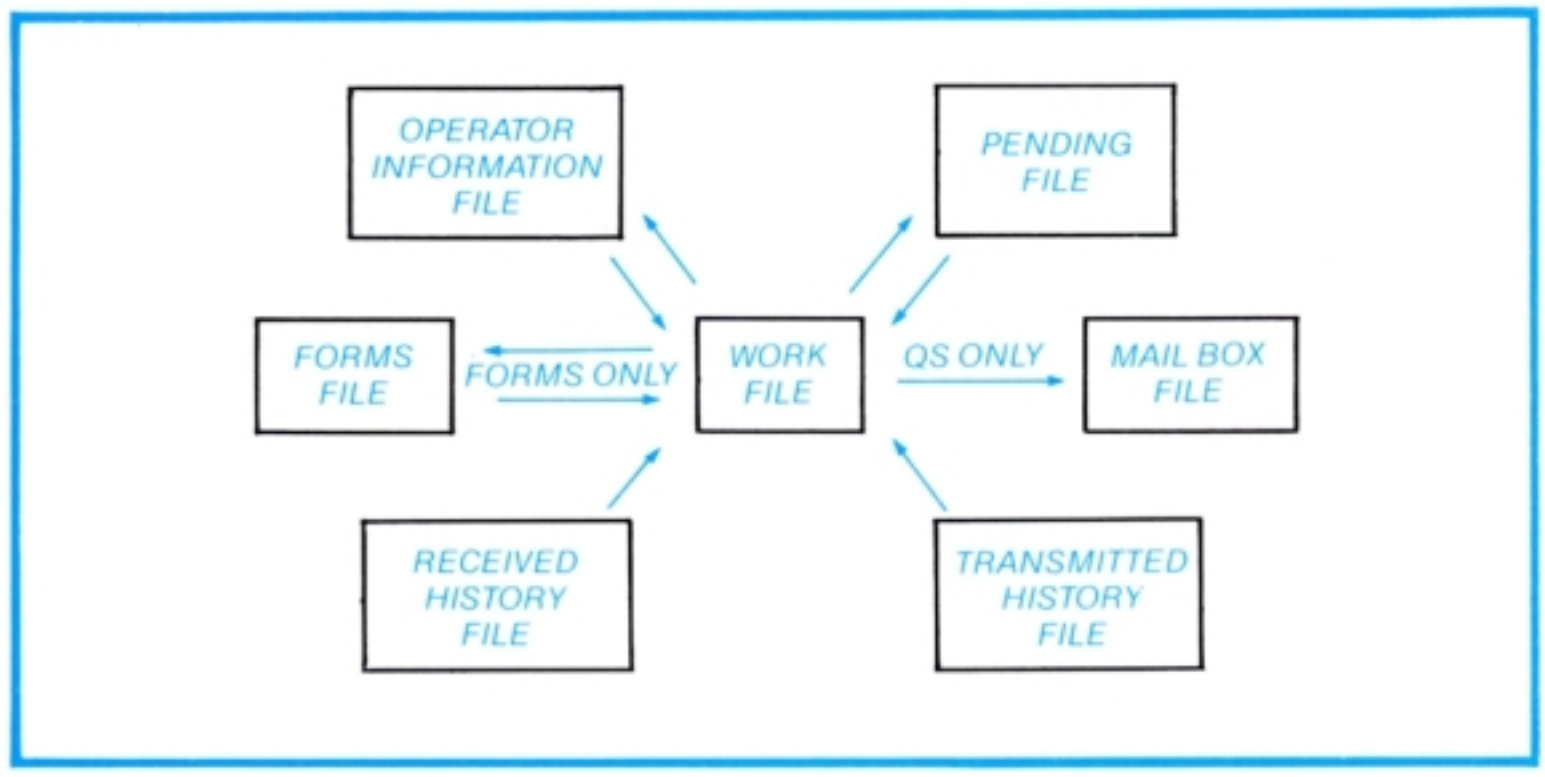
Assume that you have originated a simple message in the Work File and that you wish to store it. You can use the COPY DOCUMENT command to do this.

When you COPY a document to another file, it remains also in the source file (in this case the Work File).

The source of the document being copied is always taken as the document currently on the User Screen; so that if the User Screen is being used to *review* a file, the document under review is copied.

A simple message can be copied from the Work File into the Pending or Operator Information File only, or copied into the Work File, Pending or Operator Information File, from any of the other files in the terminal.

In addition, a Form may also be copied into the Forms File.



Deleting documents

If you wish to delete a document, you can use the DELETE DOCUMENT command. You might wish to do this to erase documents no longer required so as to generate some free space, or to erase a document which has been sent or received but considered too confidential to leave in the appropriate history file.

The DELETE DOCUMENT command deletes the document currently displayed on the screen, and is effective in both editing and reviewing mode.

COPY DOCUMENT

Mnemonic CD

Makes a new copy of a document from one source file to another (specified) file, leaving the original in the source file

When copying into the Work File, terminal will resume into Editing mode when copy is completed

Requires free space

Effective modes:
Editing
Reviewing

Keying Sequence

Press [FUNC] Q for Command Screen

Use keys to select CD

Press [RETURN]

Select from offered files
W = Work
P = Pending
O = Operator Information
F = Forms
Press appropriate key

Press [RETURN]
('bleep' signifies successful completion)

Press [FUNC] Q for User Screen

DELETE DOCUMENT

Mnemonic DD

Deletes a document currently displayed

Terminal will resume into Editing mode on successful completion of command

Effective modes:
Editing
Reviewing

Keying Sequence

Press [FUNC] Q for Command Screen

Use keys to select DD

Press [RETURN]

Select 'Y' or 'N' from confirmation options offered. Press appropriate key

Press [RETURN]
('bleep' signifies successful completion)

Press [FUNC] Q for User Screen

Printing documents

If you wish to print a document at any time, you may do so by using the PRINT command. The terminal printer will then print the document currently displayed on the User Screen. The document can be from any file under review by the REVIEW FILE command, or from the Work File.

If the printer is busy, due to incoming message traffic, the PRINT command will be rejected and the terminal will warn you with a 'bleep'. The keyboard will be disabled until the DELETE key is pressed.

You can choose to print the contents of the document displayed on the User Screen in one of two ways: as a DOCUMENT (D) or as a SHEET (S).

If you choose DOCUMENT the terminal assumes that the printer is loaded with continuous stationery and the header will be printed at the top of each page.

If you choose SHEET, the terminal will assume that the document is to be printed one sheet at a time, and will not print the header on any sheet.

This means that you can use the terminal simply as an electronic typewriter, giving you the opportunity to use pre-printed headed stationery for mailing to destinations which do not have terminals.

When printing as a SHEET, the terminal will only print the page currently displayed on the screen. If the document is of more than one page, then the NEXT/PREVIOUS PAGE function must be used to select the next page for printing (see p26).

Printed document ▶

```
: RX020 22/11/84 16:38 To:246 8043                              PAGE 1 :
:                  A/BACK:01 246 8043          From:031 246 8021       :
: Actual Destinations    :246 8043                                      :

John - this could be relevant in view of
       yesterday's discussion -  Mike

New reports and studies drawing attention to major skills shortages appear
each month. The latest, Crisis Facing UK Information Technology, comes
from the IT Economic Development Committee.

   Although primarily concerned with the lack of investment in research
and inadequate financing for fast-growing, medium-sized companies, it
states: "One of the most critical issues of all is the availability of
suitable skilled manpower. Shortages occur at all skill levels, but are
probably worst in software engineering, systems integration and advanced
production technology."

   It adds later: "Too often contracts are being lost, and employment
opportunities for the less skilled are being lost with them, because of
the lack of a few key engineers. Competition for these people is
increasing from users and overseas companies establishing in the UK.

                                                    (END OF DOCUMENT)
```

PRINT	Keying Sequence
Mnemonic PR	Press FUNC Q for Command Screen
Prints the document or page currently on the display screen	Use keys to select PR
(Printer must be free and 'ON LINE')	Press RETURN
Effective modes: Editing Reviewing	Select D (Doc) or S (Sheet) from options offered. Press appropriate key
	Press RETURN ('bleep' signifies successful completion)
	Press FUNC Q for User Screen

Preparing a simple message

If the message you wish to prepare and send requires sections of other documents to be incorporated, there are several other functions you need to know about. They are: MARK ITEM/CLEAR MARK ([FUNC] M) and READ MARKED ITEM ([FUNC] R)

They need to be used in conjunction with each other, as well as with the editing commands referred to under 'Using the M2105 for the first time'.

Suppose that there is a section of data that you want to copy from a document in one of the terminal's files, and that you have located it in the appropriate file by using REVIEW FILE procedures. You can 'mark' it using 'MARK ITEM' and then transfer it into the Work File at the position you want by using 'READ MARKED ITEM'.

Mark item

Move into the User Screen if necessary, using [FUNC] Q. With the cursor positioned in the first line of the required section, press [FUNC] M. The line will be 'highlighted' along its whole length.

Move the cursor down to the last line of the required section, and press [FUNC] M again. The whole section, including the last line, will be highlighted. It is now 'marked'.

You can only mark one section in a document at a time, but the start and end of the section can be as far apart as you like, even spanning more than one User Screen or more than one page. If only a single line is required, simply press [FUNC] M once.

Read marked item

Using [FUNC] Q to move into the Command Screen, return to the Work File by keying RS (RESUME), followed by [RETURN]. Once in the Work File, position the cursor to the line where you wish the marked section to be placed. Press [FUNC] R, for READ MARKED ITEM, and the marked section will be inserted at the cursor line whilst moving any existing text down the document.

READ MARKED ITEM will not remove the marks from the source document, so that you can use it repeatedly, for example when using a standard heading on each page of a message. You can also mark items within the Work File to enable whole paragraphs to be copied within a document.

Clear mark

To clear marks from any already marked line where the cursor is positioned, press [FUNC] M. To clear a marked section, you can either use the CM command as explained below, or the [FUNC] M key on the first and last line of the marked section.

Clear all marks

The CLEAR ALL MARKS command clears all marks in the memory. You can use this if the message 'TOO MANY MARKS' occurs on the Command Screen.

MARK ITEM

FUNC key command M

Use RS to return to Work File

Effective modes:
Editing
Reviewing

Keying Sequence

Select item to be marked on User Screen, by positioning cursor

Use keys to select FUNC M

Position cursor to end of block to be marked. Press FUNC M again

READ MARKED ITEM

FUNC key command R

Effective modes:
Editing

Select position in Work File where item is to be placed, by positioning cursor

Use keys to select FUNC R

CLEAR MARK

FUNC key command M

Effective modes:
Editing
Reviewing

Select position of item to be cleared by positioning cursor

Use keys to select FUNC M

CLEAR ALL MARKS

Mnemonic CM
Effective modes:
Editing
Reviewing

Press FUNC Q for Command Screen

Use keys to select CM
Press RETURN
('bleep' signifies successful completion)

Find item

It may be that you need to identify and locate, for a number of reasons, an item which could be a word, a phrase or a sequence of text characters of any length. You might need to locate this information wherever it is in the files, however many times it occurs, and examine it, mark it or edit it.

To do this you use the FIND ITEM command.

This is a powerful command with a number of characteristics and abilities. Note that it is used with Forms as well as simple messages. Using the Command Screen, key to FI and press [RETURN]. You will be presented with two fields: "String" and "Extent".

The cursor will be prompting you to make an entry into the 'String' field.

A 'String' is literally any group of characters which can be typed on the keyboard. It can be a word, words and numbers, a phrase, sentence or paragraph of virtually any length. There are some limitations, referred to later.

For the purposes of the FIND ITEM command the limit is 10 characters, which is the length of the field. There are ways in which these 10 characters can be expanded, as you will see.

Assume for the moment that you are in reviewing mode and know that the word 'YESTERDAY' appears somewhere in the file you are currently in, and you wish to locate it exactly.

Type in YESTERDAY in the 'String' field and press [RETURN].

The cursor will now be prompting you in the 'Extent' field, which will be displaying D, which represents Current (D)ocument. You can also enter into this field 'F' for Current (F)ile or 'S' for Whole (S)ystem (all the files).

Type in 'F' and press [RETURN]. The terminal is now looking for reference to the word YESTERDAY in the file you are currently in. Assuming that the word appears in a document within that file, it will display the line in the document containing the matching word. The cursor will be positioned at the start of the matching word. The Command Screen may display an appropriate information message, such as 'DIFFERENT DOC', informing you that the word has now been found in another document.

If the document is not already in the Work File, you may now use the COPY command (see p31) or the MARK function (see p34) to transfer it.

If the word cannot be found in the current document then the terminal will search successively through all remaining documents in the current file.

If the word YESTERDAY does not appear anywhere in the file, the Command Screen will display the message 'NO MATCH'.

If you had selected 'D' for Current (D)ocument, the terminal's search would have finished at the end of the current document, and if unsuccessful, would have displayed on the Command Screen 'NO MATCH'.

If you had typed in 'S'- Whole (S)ystem, the search would have started in the file currently being reviewed and continued through all the files except the Work File, in the order of Pending, Received, History, Transmitted History, Forms, and Operator Information. Whilst editing the Work File the search order is the same except that it begins with the Work File. The search will 'wrap around' to the beginning again as long as the FI command is repeated. If the search was unsuccessful, 'NO MATCH' would be displayed.

Note: When you are searching in (F)ile or (D)ocument the search begins from *the current cursor position* in the document being displayed. This means that the terminal will not locate a string which exists before the cursor position, or in any earlier document in the same file.

There may be several occurrences of the same item and you might be searching for a specific one which is not the one first found. In this case, press [FUNC] Q and [RETURN] and the terminal will search through to the next occurrence of the sequence.

To clear the FIND ITEM command, use [FUNC] Q for the Command Screen and press the DELETE key to cancel the command.

Find item – advanced usage

You could be searching for something longer and more complex, and to do this it is necessary first of all to define the composition of a 'string' more exactly.

Any of the keyboard characters can be used to compose a string, with the exception of the space character. The size of a string can be anything from one character to 10 characters (the length of the 'string' field).

You will want the string you enter in the 'String' field to be matched with a string somewhere in the text. This is done on a character by character basis, and although you can only enter capital letters in the 'String' field, they can be matched with upper or lower-case characters. Therefore the string 'TO-MORROW' will be matched with the text string 'TO-MORROW' or 'to-morrow'; but not with 'TO MORROW', which being two words, is in fact two text strings.

To expand the limit of 10 characters allowable in the 'String' field, you can use what are known as 'Wild Card' characters.

There are two of them, the hash (#) and the asterisk (*). They may be positioned anywhere in the string, and they each have their own particular significance during the search.

The hash (#)

The hash will match with any one character including the hash and asterisk, but not with the space.

So if you enter the string FORM#, for example, it will be matched with FORM5, FORM9 or FORMS - but not with FORM 5.

You can use any number of hash characters in a string, the maximum being 10. The effect of doing this (not a very likely need) would be to match all the words of 10 characters.

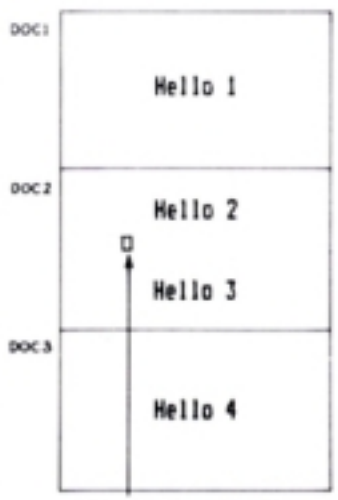
The asterisk (*)

The difference between the asterisk and the hash is that it matches with *any number of characters* including the hash, asterisk *and* space. It can, therefore, match with the string, words longer than 10 characters, and more than one word.

For example, the string UNDER* will be matched with the words UNDERNEATH, UNDERLINE, and also with the word UNDER.

The string B* will be matched with all the words starting with B or b, *ING will be matched with all the words ending with ING, or ing.

UNDER*8 could also be matched with, say, the sequence of words UNDER THE CLOCK AT 8 provided this sequence is positioned within a single display line, which is the largest word sequence possible.



When<D> is specified for the extent<HELLO> will find Hello 3 but not Hello 2. If<F> is specified Hello 3 and Hello 4 will be found also.*

Finding Forms

To take an example, if you need to find a form with the reference AD61, use the FIND ITEM command, specify the string *AD61* and the extent as (S)ystem. When the string is found, the document will be displayed on the screen with the cursor positioned at the start of the string AD61. You can then copy or mark the form.

The largest sequence possible would be limited to 8 characters in order to fit the 'String' field length of 10 characters.

FIND ITEM

Mnemonic FI

Effective modes:
Editing
Reviewing

Keying Sequence

Press FUNC Q for Command Screen

Use keys to select FI

Press RETURN

Enter appropriate 'String' in Command Screen, using # or * if needed

Press RETURN

Select from offered options (D,F, or S)

Press RETURN
('bleep' signifies successful completion)

You may fill in a Form in the same way as a simple message is prepared, by keying data into the terminal when it is displaying the Work File. The difference is that this time the Work File will be in Form Filling mode.

As in the preparation of simple messages, there are facilities in the terminal for completing Forms quickly and efficiently, and inbuilt checks to ensure security and confidentiality.

The commands described earlier (CD, DD, PR, QS) and the functions, apply whilst Form Filling as well as with simple messages but there are certain differences in procedure.

Firstly, you need a form to fill in. The terminal, as you have seen, may have a file of forms for you to draw on. These forms consist entirely of successive fields to be filled in.

Form document showing fields filled in ▶

```
 ------------------------------------------------------------------------------
: RX005 09/11/84 19:53 To:     246 8043                                PAGE 1 :
:                  A/BACK:01 246 8043          From:031 246 8021              :
: Actual Destinations    :     246 8043                                       :
:-------------------------------------------------------------------WWWW------:
:  (                    SALES RECORD                      )FORM   Ref (65/2) (K) :
:-------------------------------------------------------------------WWWW------:
: ADDRESSED TO (     246 8043                  )    PK (W)  SP (N)  UGC (54 ) :
 ------------------------------------------------------------------------------


          NAME (  Patterson & Forbes Ltd.                    )

       ADDRESS (  Unit 5, Southwick Trading Estate,          )
               (  Middleford, Beds  BG3 4AN                  )
               (                                             )


   TELEPHONE NO (  021 246 8091                              )

       TYPE OF (  Laundry equipment manufacturers            )
      BUSINESS

 GOODS SUPPLIED (  24 castings  SPEC AL/4664/RC4                  )

       ORDER NO (  PF/SDP 3784                        )


                                                    (END OF DOCUMENT)
```

Locating Forms

Put the terminal into Review File mode, and select the Forms File. You can now select the Form you need by using the various searching and reviewing commands available to you as already described for documents on p24.

Alternatively you can use the FIND ITEM command, giving the name or reference number of the Form required as the 'String', e.g. *AD72*

(If there are no Forms in the Forms File, contact your System Manager or Merlin Service Desk for advice.)

Having located the Form, you now make a copy of it into the Work File by using the 'COPY DOC' command. This action puts the Work File into Form Filling mode.

Completing and validating Forms

The Form that you are going to fill in will have been designed for a specific purpose and will require data to be entered in a specific manner. The data entered into each field is checked by the terminal when you press RETURN; this checking process is known as 'Validation'.

When the Form was designed, each of its fields was given certain attributes, eg. date, time, numeric alpha, etc., and these attributes control the validation of the data entered into them.

Before you can complete any of the fields, you must press FUNC Q. The first field that you can type into is the "Addressed To" field. This is the destination telephone number you will be sending the Form to, and it may have been previously filled in by the Forms designer. You may wish to change this telephone number or add an additional number after typing in a ";" character.

The SP field in the Form header may also have been set to (Y). If so, then the brackets marking the field boundaries will not be printed when you use the PRINT command.

As you key data into each field, you ask the terminal to validate the field by pressing RETURN. If the field is valid, the cursor will move to the next unprotected field. If the field is invalid, the cursor stays in that field and the Command Screen will warn you with the message 'INVALID FIELD'.

Once a field has been checked, it becomes valid in memory, unless new data is entered into it.

The fields in the Form can be filled in in any sequence.

The TAB ([FUNC] F) and BACK TAB ([FUNC] B) keys will position the cursor at the beginning of the next and previous unprotected field in the User Screen.

The [←] and [→] keys will operate only within an unprotected field, and the cursor will not move to the next field except by using [FUNC] F or [RETURN]. You will only be able to type *between* the brackets, typing anywhere else results in the terminal 'bleeping'.

Note that the message NO OPEN FIELD means that the end (or beginning) of the form has been reached.

The [↑] and [↓] keys are used for scrolling. Searching and scanning through Forms is carried out in the same way as for simple messages.

Some fields may be 'pre-set, i.e. they cannot be altered once they are correctly completed. These are shown with an asterisk preceding the field *{ }. When a pre-set field is 'locked' by validating it, the asterisk will disappear.

Blank all fields (BF)

When you require to send the same form, but completed with different data in the unprotected fields, to one or a number of different destinations, you can save time by using the BLANK ALL FIELDS command to empty all these fields and fill in new data. Simply press BF and [RETURN] once you have transmitted the first form and repeat the procedure as often as you need.

Verify form (VF)

You may wish to do a final check to make sure the form is correct prior to printing, sending, or filing it.

To do this, use [FUNC] Q and the VERIFY FORM command (VF). If any incorrectly completed fields are found, these will be indicated on the screen for you to put right.

The VERIFY FORM procedure is automatically carried out by the terminal before a message is sent, unless otherwise specified.

You can copy the contents of an unprotected field or fields from a stored Form into the current Form in the Work File by using the MARK ITEM and READ MARKED ITEM functions. You cannot read marks from a normal 'simple message' into a Form, or vice versa.

Mark item

When you have located the field you wish to mark, by using the REVIEW FILE command if necessary, position the cursor in the field and press FUNC M.

The terminal will now carry out two checks. First, to confirm that the document to be marked is in fact a document of the same type i.e. a Form, and then to confirm that the field to be marked is not 'sensitive' and that it is not a 'signature'.

Certain fields may be considered too important for one reason or another to allow routine data entry with the READ MARKED ITEM function. These are called 'sensitive' fields. Any attempt to MARK or READ MARKED ITEM into them will be blocked and the word SENSITIVE displayed on the Command Screen.

The implications of 'signature' are explained later.

Assuming that the checks are successful, the field is marked, and 'highlighted' on the User Screen. You can mark up to ten fields in any one Form, but only one Form at a time.

Read marked item

Unless you are already in the Work File, return to it by using FUNC Q and keying RS (RESUME) and RETURN. Position the cursor to the target field required and press FUNC R, and the *first* marked item will be copied into this field.

If this is not the correct item, continue to press FUNC R until the correct item is displayed where you want it. Any copied field that is longer than permissible will be automatically truncated.

When you are satisfied with the contents of the target field, press RETURN This will have the effect of validating the field as if it had been entered from the keyboard.

Using the MARK ITEM function in this way means that you can carry a whole series of fields, for example Name, Address, Date of Birth, intact across documents.

The READ MARKED ITEM function will not remove the marks from the source document, so that it can be used repeatedly if required.

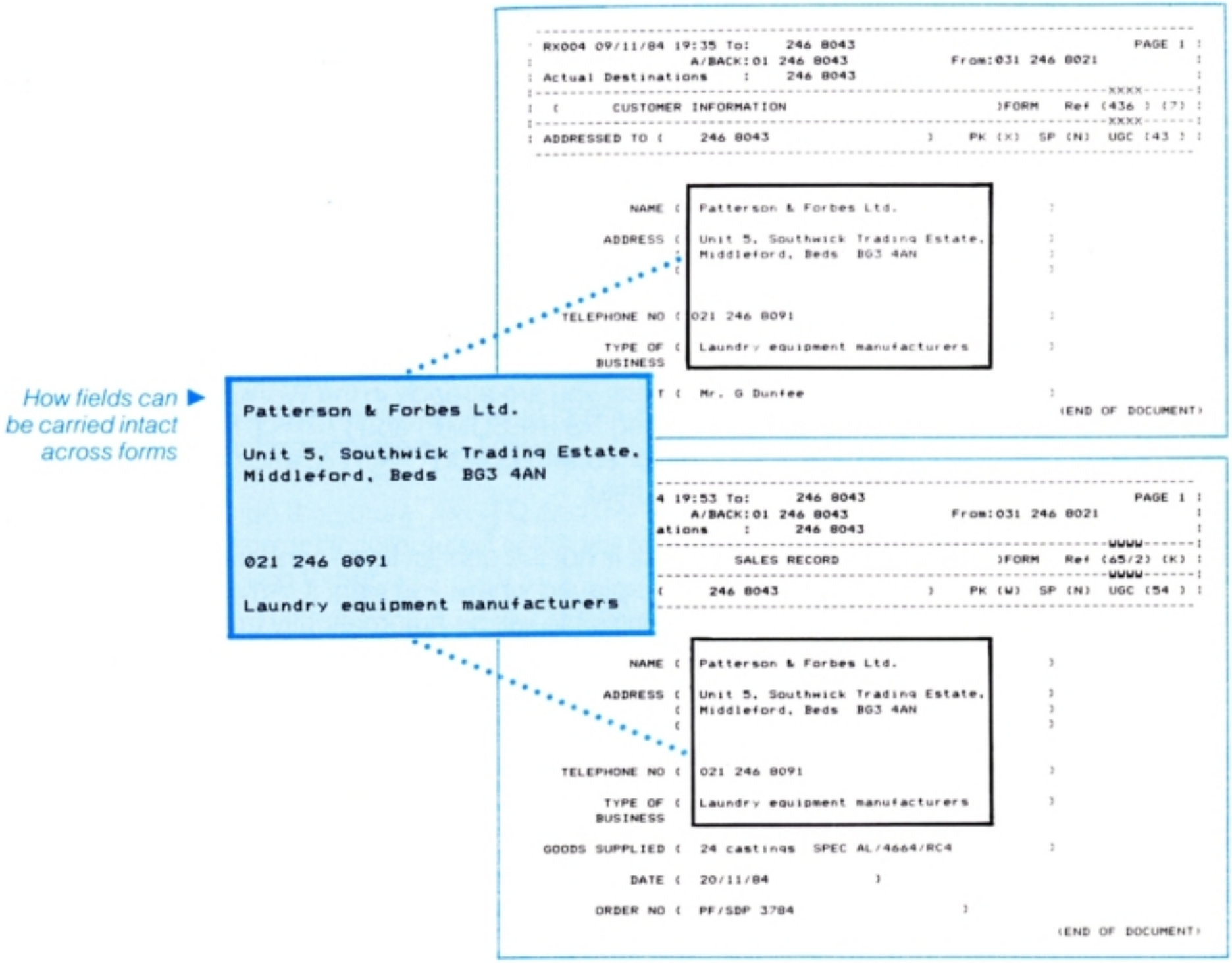
Clear mark

The CLEAR MARK function clears marks from any already marked field where the cursor is positioned, by pressing [FUNC] M.

Clear all marks

The CLEAR ALL MARKS command clears all marks in memory.

How fields can be carried intact across forms



MARK ITEM

FUNC key command M

Effective modes:
Editing
Reviewing

Keying Sequence

Select field to be marked on User Screen, by positioning cursor

Use keys to select FUNC M

Repeat this command if it is required to mark more than one item

READ MARKED ITEM

FUNC key command R

Effective modes:
Editing

Select field in Work File where item is to be placed by positioning cursor

Use keys to select FUNC R. Repeat until correct item appears in field

CLEAR MARK

FUNC key command M

Effective modes:
Editing
Reviewing

Select position of item to be cleared by positioning cursor

Use keys to select FUNC M

CLEAR ALL MARKS

Mnemonic CM

Effective modes:
Editing
Reviewing

Press FUNC Q for Command Screen

Use keys to select CM
Press RETURN
('bleep' signifies successful completion)

Signing Forms

One of the fields on a Form may be a signature field.

If so, a Formal Name and Personal Identity Number (PIN), known only to its user, will need to be entered. These will be two adjoining fields on the same line, in that order. PIN numbers are allocated as required.

The PIN field will never actually display a PIN and will be keyed 'blind'. (It may be somebody other than yourself who is signing the Form). Once the PIN number has been entered, it will appear as a row of 'tildes' (~ ~ ~ ~) which will show that the Form has been signed. This character cannot be entered from the keyboard, thereby making it very difficult for anybody to 'forge' a signed Form.

The PIN is validated in the same way as other fields but its validation is also linked to a check on the complete document which ensures that all the fields that must be filled in have been completed, *and* that they have been completed with valid information.

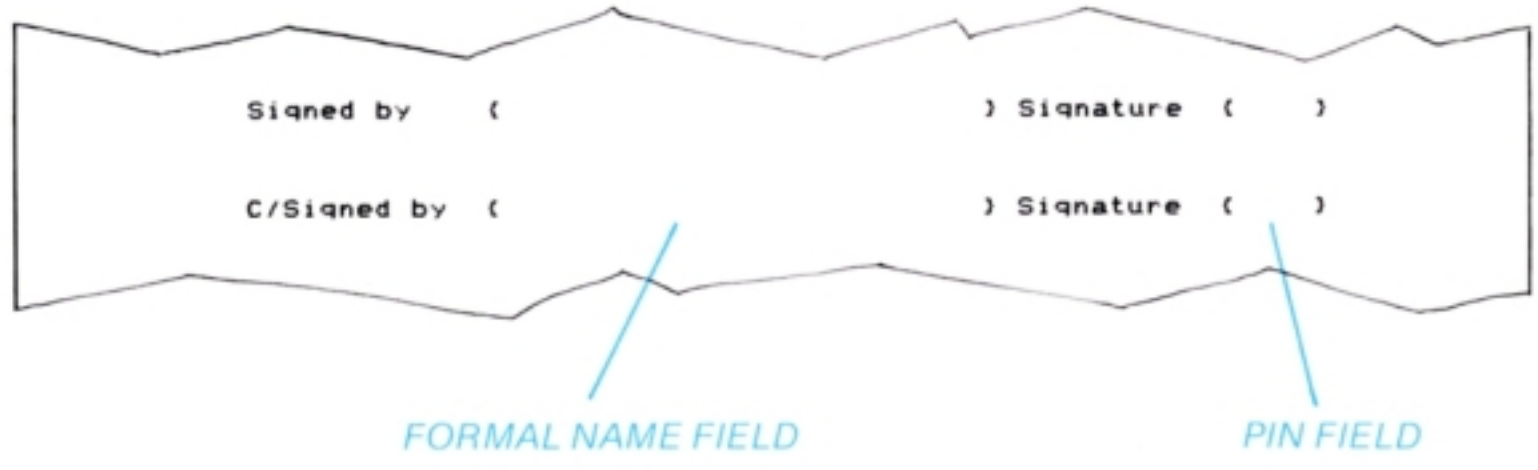
If any invalid field should be found at this stage, the cursor is left in the invalid field and the Command Screen will warn you.

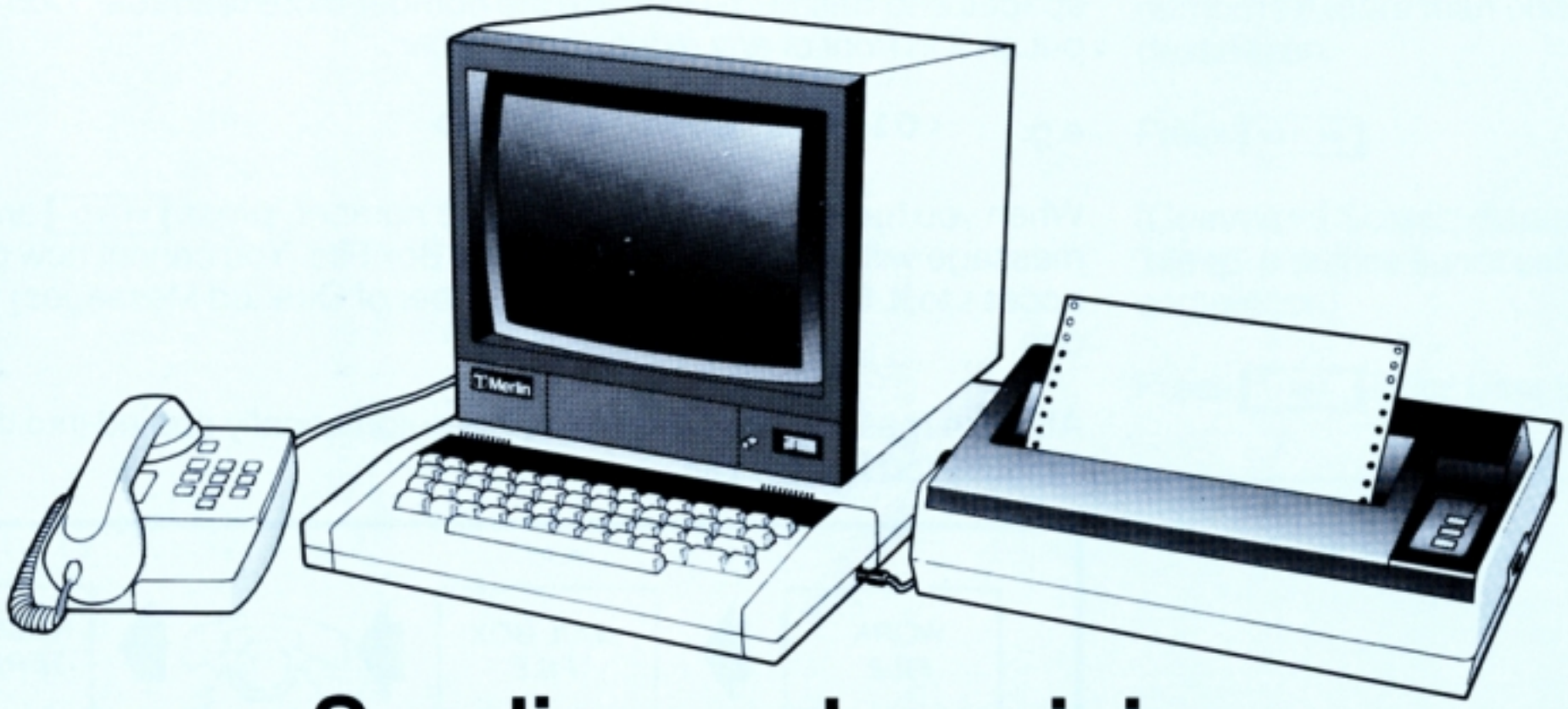
Once the document is PIN-signed, no further editing can be done on the area above the signature.

The PIN field operates like a toggle switch: signing once 'locks' the document, signing again 'unlocks' it. Only the signatory has the power to do this.

Some forms will have been designed for the addition of a counter-signature, so that, for example, they can be sent to another person for comment and counter-signature before being eventually transmitted.

The counter-signature is added or removed in exactly the same way as the original signature, but the counter-signatory cannot get access to any portion of the document above the first PIN signature. The counter-signature also 'locks' all fields (including the first signature) above it.





Sending and receiving messages on the M2105

Sending simple messages

When your message is ready to send, you can transmit it by using the QUEUE FOR SENDING command. The document is then automatically copied from the Work File to the Mail Box File and is automatically transmitted from there.

The original will be left in the Work File, where you can copy it, print it, delete it, or simply send it to somebody else.

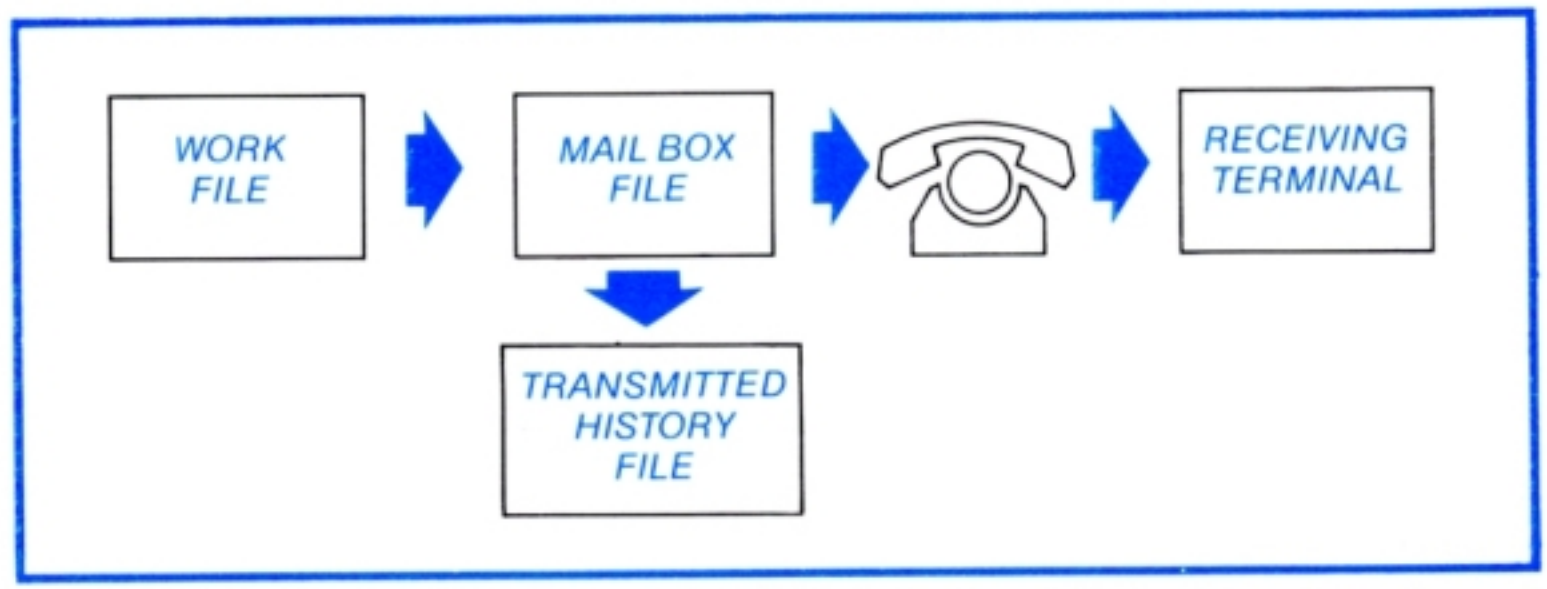
First, select the command QUEUE FOR SENDING (QS) and press RETURN. The terminal will invite you to "enter telephone number" into a field on the Command Screen.

Now type the telephone number of the destination into this field. You can use spaces and dashes (-) to make the number more readable. Don't forget to put an X in front of any extension number.

e.g: `<01-246 8091 x 2456>`

When you have typed in the telephone number, press RETURN and the message will be 'posted' into the Mail Box File. You cannot now get any access to it. Note that the NQM (Number of Queued Messages) goes up by one.

After the message has been sent it is automatically copied into the Transmitted History File.

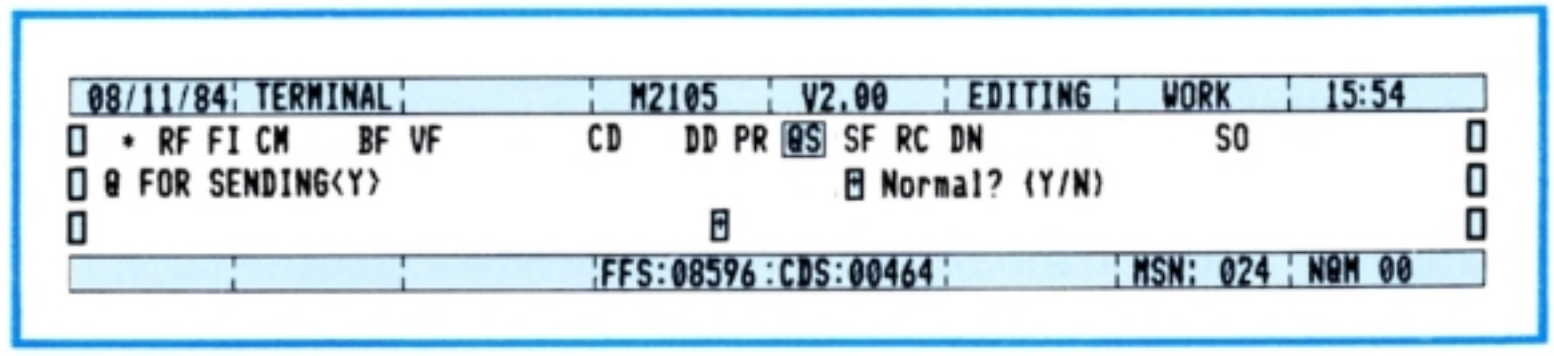


QUEUE FOR SENDING (Simple messages)	**Keying Sequence**
Mnemonic QS	Press [FUNC] Q for Command Screen
Copies a document from the Work File to the Mail Box File for automatic transmission	Use keys to select QS
	Press [RETURN]
Effective modes: Editing only	Enter destination telephone number(s), insert semi-colon (;) between numbers if more than one destination
	Press [RETURN]
	(Command Screen displays status, 'bleep' signifies successful completion)
	Press [FUNC] Q for User Screen

Sending Forms

The procedure for sending Forms is slightly different from that for sending simple messages.

If you are sending a Form in the normal way, once it has been filled in and if necessary, signed, select the command QS and press [RETURN] The Command Screen will ask you NORMAL? (Y/N).



Press 'Y' and [RETURN] and the terminal will check that the Form is valid and, if necessary, signed and will transmit it to the destination numbers in the Addressed to: field in the Form header. (Note that you can add extra telephone numbers to the Form header before the Form has been signed.)

If you require to send a Form in a manner that is not 'normal', to a different destination telephone number from that on the Form header, press 'N'. The terminal will ask you CHECK VALID? (Y/N).

If you then press 'Y' and [RETURN], the terminal invites you to enter the telephone number. Once you have done this and pressed [RETURN], the terminal will send the Form after having checked that it is valid.

The same procedure applies if you press 'N' and [RETURN], except that the terminal will make no check for validation. You will need to use this if sending a blank Form.

The terminal will not allow a Form to be sent if the 'Signed by' field has been completed but the Form is not signed, even if you reply 'N' to CHECK VALID?

QUEUE FOR SENDING
(Forms)

Mnemonic QS

Copies a document from the Work File to the Mail Box File for automatic transmission

Effective modes:
Editing only

Keying Sequence

Press [FUNC] Q for Command Screen

Use keys to select QS

Press [RETURN]

Select Y or N from options offered

Press [RETURN]

If prompted CHECK VALID? Select Y or N

If needed, enter destination telephone number(s), insert semi-colon (;) between numbers if more than one destination.

Press [RETURN]

(Command Screen displays status, 'bleep' signifies successful completion)

Press [FUNC] Q for User Screen

Multiple destinations

Messages can be addressed to more than one terminal at a time. To transmit the same message to several terminals you use the QS command as before. This time, however, after typing in the first number enter a semi-colon (;) in the number field, then add the second number (and so on) until either all the numbers are entered or there is no room to enter further numbers.

e.g: <01-583 2163; 285109; 276032>

Now press RETURN and the message will be queued and sent to each number entered. Note that the NQM goes up by the number of destinations the message is to be sent to.

If the message needs to be sent to more numbers than there is room to enter, then repeat the procedure by using the QS command again and enter the rest of the numbers.

If a message is transmitted successfully for each destination address a log is printed on the local printer showing the communication information header (see p57) completed with Answerback, Serial Number, Date and Time. A copy of the message is also stored in the Transmitted History File.

Answerback

The telephone number of the receiving terminal is used as an Answerback code, so it is possible to determine that the message was sent to the correct terminal.

The transmitting terminal does some checking of the Answerback against the actual number dialled. It is likely, particularly around London, that the number dialled by the terminal will be different from the Answerback number. This is due to the use of local dialling codes for some calls, whereas the Answerback should always be the full STD code.

The terminal starts checking the Answerback from the righthand digit to the left and looks for at least three matching digits before deciding if the call has been routed correctly.

e.g:

```
                To :    246 8043
           A/BACK : 01  246 8043
Actual Destinations :    246 8043
```

call connected OK - last 3 digits match

```
                To :031 246 8091
           A/BACK :031 246 8191
Actual Destinations :031 246 8091
```

call rejected - wrong number

Number of Queued Messages

The field on the Command Screen marked NQM shows the number of queued messages in the 'mail box'. It is only possible to enter a limited number of messages into this queue before the 'mail box' becomes full, i.e. the number of messages that can be queued depends on the size of the documents to be transmitted. It also depends on the size of the Pending, Received and Transmitted History Files, all of which compete for the same space as the Mail Box File.

Retry

If the terminal fails to get through to the correct number and successfully transmit a message, then the message is held in the 'mail box' for retrying.

The terminal will attempt to transmit the message five times within one hour before aborting the attempt. A log will be printed out each time the terminal attempts to send a message.

If the message is not transmitted successfully after four 'retries' the entire message is printed out on your local printer. To draw attention that the message has failed, it is marked 'BY HAND' signifying that it should be delivered by alternative means. This message is stored in the Transmitted History File.

You now have the option of sending the message 'BY HAND', or copying it into the Work File and re-queueing it for transmission, possibly to a different terminal, or setting up a manual phone call and using the SEND ALL FOR (SF) command, explained later.

Incoming messages

The terminal is available to receive incoming messages whenever the telephone line is free and the terminal is switched on and in Operation Mode (editing or reviewing). The printer must also be switched on and 'on line' for a message to be received successfully.

The terminal will automatically answer all incoming calls whenever the phone rings, and a message transfer will be set up if the call is from another terminal. The message is automatically printed out and a copy left in the Received History File. This message could then be copied (CD) into the Work File and queued for sending (QS) to another terminal, perhaps after being edited. The message could also be stored in the Operator Information File or Pending File for later reference.

When a message is received into the Received History File, if the file is full it automatically overwrites the oldest message in the file.

If the memory is full (several very large messages stored in the Pending File) and there is still no room after oldest messages are deleted, then the message is printed only – not copied into the Received History File.

Voice Response

If the incoming telephone call is not from another terminal, the M2105 will answer the caller with a synthesised voice message.

This means that if you are absent from the terminal for any reason, a voice call can be automatically answered by one of a number of different messages.

The messages all begin: "This is a computer, please hold on... this is (our telephone number)."

This is followed by one of four alternative messages:

1) Please try again
2) Please try again after (time)
3) Please try (telephone number)
4) Please try (telephone number) after (time)

The voice message can be switched off altogether if not required.

To set these options, select the SO command and press [RETURN], then turn to p76 and 78.

Escape (switching from Terminal to Handset)

This key is used to change the priority of the answering of incoming calls. Its operation causes the field in the top left of the Command Screen to change from TERMINAL MODE to HANDSET MODE, and vice versa.

In TERMINAL MODE all incoming calls are answered by the terminal immediately. The terminal would be used in this mode if the office is unattended or the terminal is dedicated to receiving incoming messages (no speech calls expected).

When the terminal answers an incoming call it will automatically first set itself into TERMINAL MODE, and will then remain in TERMINAL MODE even after the completion of the call.

In HANDSET MODE the terminal will answer incoming calls after about 20 seconds. This allows time for anybody in the office to answer the phone when mainly voice calls are expected.

In addition, when a message is Queued for sending while the terminal is in HANDSET MODE, no attempt will be made to send it for 5 minutes. After 5 minutes, the terminal will bleep and display the message ABOUT TO DIAL. Pressing the [ESCAPE] key again will suspend the terminal's attempts for a further 5 minutes.

If [ESCAPE] is not pressed then the terminal will dial the call after a 10 second pause. After completion of the message it will remain in TERMINAL MODE unless it is changed by pressing [ESCAPE].

As the terminal does not know when the telephone line is in use, it may attempt to dial a message call when the line is in use for a voice call.

[ESCAPE] can be used to force the terminal to release the telephone line should it start to dial during a voice call, or to abort the transmission of a message. In each case the call would be retried later by the terminal.

Receive (RC)

If the telephone is answered by hand and the caller is identified as an incoming message from another terminal, by the distinctive short, high pitched bleeps every few seconds, then the RECEIVE command is used.

This is selected (when in the Command Screen) either by using the cursor keys [←] [→] or by typing RC, and then pressing the [RETURN] key. The terminal will then take over the line and handle the incoming message and the telephone handset can be replaced.

The RECEIVE command can also be used by the destination terminal when the SEND ALL FOR (SF) command is used.

Send all for (SF)

It may be necessary for a particular message, or messages, be taken out of the transmission queue in the MAIL BOX FILE for reasons of confidentiality, or to give a message priority over other queued messages.

The SEND ALL FOR command allows this to be done. It also allows a message to be sent to a terminal which cannot be dialled direct and is connected via an operator, and it allows for messages to be sent during a 'voice call'.

1 If the message to be sent has not previously been queued for sending and is displayed in the Work file, press QS and enter the destination telephone number.

2 Press [ESCAPE] for HANDSET Mode. This prevents the terminal from dialling straightaway.

3 Press SF and again key in the telephone number the message is to be sent to. Do not press [RETURN] yet.

4 Make a telephone (voice)call on the terminal telephone to the destination terminal user.

If the user is not present

The receiving terminal will answer by giving a tone. Press your [RETURN] key, and all messages queued for sending to that telephone number will now be sent. Replace your telephone handset.

If the user answers

Explain that you wish to send a message now, and ask him to press his RC command.

5 Wait until you hear a tone on your telephone earpiece.

6 Press your RETURN key, and all messages queued for sending to that telephone number will now be sent.

7 Replace your telephone handset.

Dial number (DN)

It is possible to use the terminal to dial a telephone number for you, for example to make a voice call or paging request, if you are engaged on other urgent business. To do this, select DN, enter the number and press RETURN. The terminal will then bleep, the message 'PICK UP HANDSET' will be displayed, and the terminal will hold on for up to 10 seconds to allow you to pick up the handset before it releases the line.

PABX procedure

If you are entering the destination number of a terminal not connected to the same PABX or switchboard, when using QS, SF or DN, then the exchange line access code (usually 9) should be included in the number.

If the PABX delay has been set to other than '0' during initialisation (see p76) then the terminal will automatically leave a short pause after dialling the first digit. This allows time for the exchange equipment to find an outside line. This delay is only required on older type PABXs; your System Manager or Merlin engineer will be able to advise you.

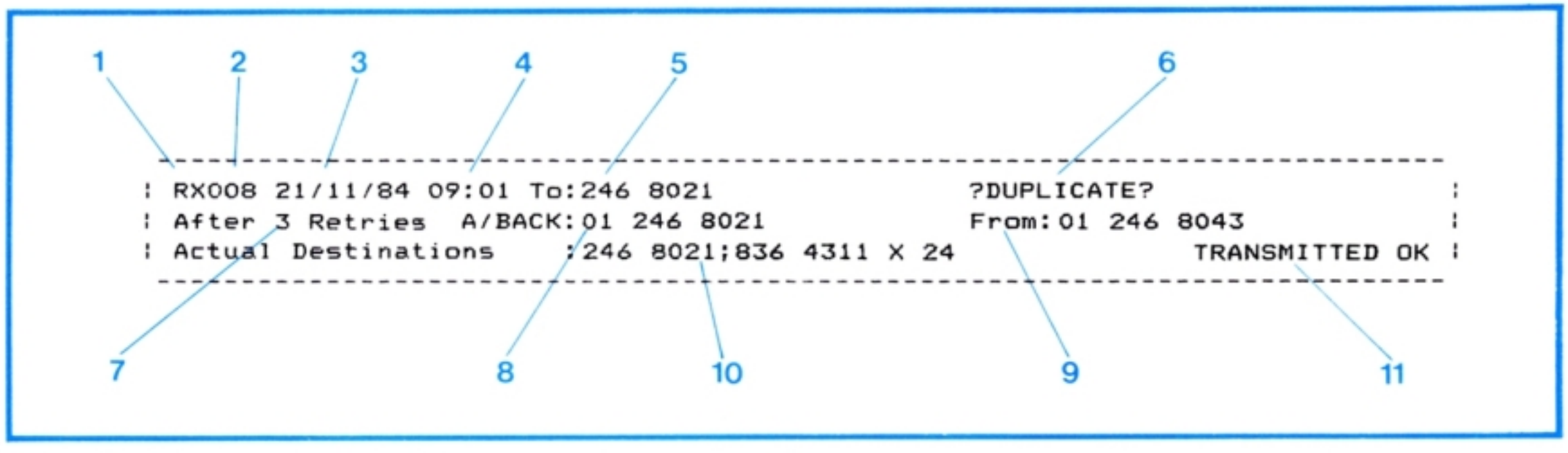
The Communication Information Header

Before the terminal transmits any document you have prepared, it adds a 'communication information' header.

This header consists of 3 lines of text within the first 5 lines of the document, and contains information which gives each document an individual and unique identity.

The header is only displayed on the screen when a message has been transmitted or received. However, it is automatically added by the terminal to every document before it is sent, and appears at the top of every printed document.

This is what it looks like.



1 This field is either blank, or contains the characters 'RX'. It tells you whether the document displayed on the User Screen is a copy of a transmitted message (blank), or of a received message (RX).

2 This field is three digits and displays the message sequence number. Every transmitted message is automatically given a unique sequential message number for identification and checking purposes, running from 001 to 999.

3 The date and 4) the time of transmission of the message.

5 The 'To' field displays the telephone number which was actually dialled by the transmitting terminal when the message was sent.

6 The display ?DUPLICATE? ensures that should you decide to print a copy of any document being displayed, you will always know that this copy, and any other additional copy, is a possible duplicate of a message previously sent or received.

7 This field may be blank, or it may display After N Retries, N being 1, 2, 3, or 4.

If it is blank, it means that the message was successfully transmitted at the first attempt. If the number is 1, 2, 3, or 4 it indicates the number of retries made to send the message; if the 4th retry is unsuccessful, it automatically prints the message at the transmitting terminal, and the words BY HAND are included in line 3 of the communications information header.

8 This field displays the full telephone number provided by the receiving terminal. Because it is positioned directly below the number which was dialled, you can quickly confirm that you have used the correct destination number.

9 This field displays the full telephone number of the transmitting terminal, as entered in the 'our tel no' field during initialisation (see p74).

10 When the document is queued for sending, it may be addressed to more than one destination at a time. The Actual Destinations: field contains all of the telephone numbers to which the document has been addressed.

11 This field indicates whether the message was successfully transmitted (TRANSMITTED OK) or the transmission failed on this particular attempt (FAILED xxxxx, where xxxxx is a failure code).

The communication information header for a document being transmitted is always printed by the receiving terminal at the top of each page as the document is being received, and this document is always the original document.

The header is also printed out on the transmitting terminal printer, where it is used as a log to show whether a message has actually been sent or not.

Can the terminal dial any telephone number?

Yes - it can be an extension number if the message is sent internally from one extension telephone point to another, or it might be just a telephone number without the STD code in the case of a local call, for example.

Will the dialled number and the answerback number always match correctly?

When sending a message, the terminal will always match the numbers correctly as far as possible, but bear in mind that there are some situations where a telephone number which is dialled for certain local calls might be different if it were dialled by a caller from outside the area calling the same number. When using the SF command the terminal does not check the answerback.

Can the terminal be stopped from sending and receiving messages?

Yes. Whilst in Editing Work mode, press [FUNC] Q and SO to return to initialisation mode (see p74). This would be useful if you needed to interrupt messaging temporarily to use the telephone for some other purpose. Pressing SO again will return you to the original condition.

What if NO ROOM is displayed when using the QS command?

There is no space in the Mail Box file because of expansion by the TXHST, RXHST or Pending files. It will be necessary to delete a document or documents manually by using the DELETE DOCUMENT command (see p30).

Note that this is more likely to happen due to the presence of a large document in one of these files than a number of small documents.

If the terminal is unsuccessful in transmitting a message after 4 retries, what are the options?

The printed message can be put into an envelope and sent by mail, or you can simply restart the transmission cycle by using COPY DOCUMENT from the Transmitted History file into the Work File and then using QS again.

Alternatively, you can dial the number manually, make contact, and send the message during the same connection using the SF command (see p55) or change the destination address to that of a close by receiving terminal.

If a document is sent to a multiple destination, when is it copied into the TXHST file?

Only when it has been successfully transmitted to all its destinations. If all the attempts to send it to any one of the destinations fail, the whole document is copied as 'BY HAND'. The details can be confirmed by checking the printed logs.

When are the words ?DUPLICATE? not printed on a message?

If the terminal successfully transmits a document to another terminal at the first attempt, that document is printed at the *receiving* terminal *without* the words ?DUPLICATE?, so this identifies it clearly as the original copy. However, if a transmission is aborted, for example due to printer error, any message subsequently sent successfully will nevertheless be printed *with* the words ?DUPLICATE?, to allow comparison. The message ?DUPLICATE? will also appear on such a message subsequently reviewed or printed.

How is the Message Sequence Number (MSN) allocated?

Each time a message is successfully transmitted, the MSN goes up by one. However, suppose the first attempt to send message 001 (for example) fails, the log will be printed out accordingly with MSN 001.

If the next message transmitted (which could be a different message) succeeds, then *that* message will take the MSN 001.

Now, if the first message is then subsequently successfully transmitted at the second attempt it will take the next available number - 002.

This can account for the possibility of the same message receiving two different Message Sequence Numbers, prior to successful transmission.

The MSN also goes up by one each time you enter and return from System mode, although this is not shown on the Command Screen. This is because the status log is allocated a MSN.

What happens when the message sequence number reaches 999?

The terminal will start numbering again at 001.



Installing the M2105

Installing the M2105

The components

The three main components that make up the terminal are the keyboard and memory unit, the screen, and the printer.

First of all, unpack them, making sure that the contents of the packages are correct, and undamaged.

You should have:

Keyboard and memory unit

1 Keyboard and memory unit
2 One mains lead with adapter, fitted with plug fused at 3 amps

Screen

1 Screen
2 One video lead 75 ohm RCA-RCA (Phono)
3 One mains lead fitted with plug fused at 3 amps

Printer

1 Printer unit, complete with cover, mains lead fitted with plug fused at 3 amps
2 Ribbon cartridge
3 Paper guide wire rack
4 Lead for connection to keyboard and memory unit

A mains distribution board is also included.

The keyboard and memory unit

This is the heart of the terminal. It contains:

The microprocessor

Program memory and display memory

Memory for storing material temporarily (unprotected in the event of power failure)

Memory for storing important material such as blank forms (battery protected)

Modem to connect the terminal to other terminals or remote computers via the telephone line

Auto dial and auto answer equipment for sending and receiving calls

Interface to connect the terminal to a local computer

Voice generator

The screen

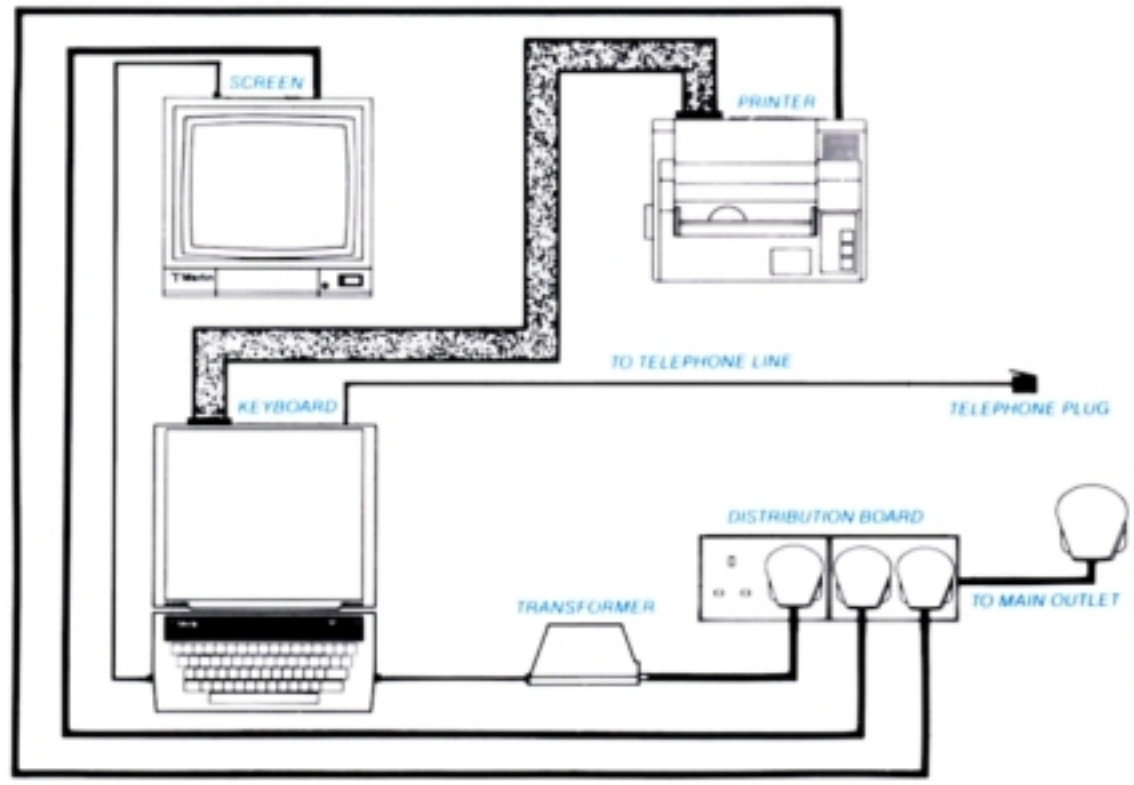
The screen is a 12" amber high resolution, monochrome monitor. A tilt and swivel base is available as an optional extra from your Merlin equipment supplier.

The printer

The printer is a high quality dot matrix printer.

Connection

These three units can now be connected to each other and to the distribution board as shown . The distribution board can then be connected to the mains outlet and switched on.



Wiring instructions and connections to mains

The keyboard, screen and printer should all come complete with 13 amp plugs correctly fused at 3 amps. Should you need to replace any of the plugs for whatever reason follow the instructions below. Consult a qualified electrician or contact your Merlin equipment supplier if you are not sure what to do.

Warning: this equipment must be earthed

IMPORTANT: The mains plug must be connected as follows:

The wires in the mains lead are in accordance with the following code:

BLUE	Neutral (N)
BROWN	Live (L)
GREEN/YELLOW	Earth (E or ⏚)

As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.

The wire that is coloured BLUE must be connected to the terminal that is marked with the letter N or coloured BLACK.

The wire that is coloured BROWN must be connected to the terminal that is marked with the letter L or coloured RED.

The wire that is coloured GREEN and YELLOW must be connected to the terminal that is marked with the letter E or the symbol ⏚.

IMPORTANT: The plug should be fitted with a 3 amp fuse to BS 1363.

Safety note

If in the event of engineering maintenance the mains electrical earth connection to terminal, printer or monitor is disconnected, then the terminal MUST NOT be connected into the telephone line. Note also that servicing or maintenance of the terminal must only be carried out by qualified personnel. There are no user serviceable parts inside the terminal, monitor or printer.

Terminal power supply unit - warning

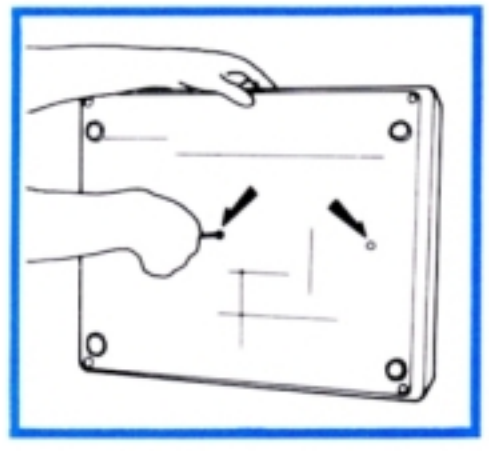
The mains adapter supplied with the terminal has been specially tested by BABT and certified as safe. *No other mains adapter should be used*. Failure to comply with this will invalidate the BABT approval certificate for this terminal. Therefore using the terminal with any other power supply whilst connected to the telephone line could be an offence as well as dangerous.

Make certain that if you should cut off the moulded mains plug to replace it with another type, the old plug is disposed of securely as it would be dangerous if plugged into a mains socket.

Setting up the printer

1 Remove the plastic top cover

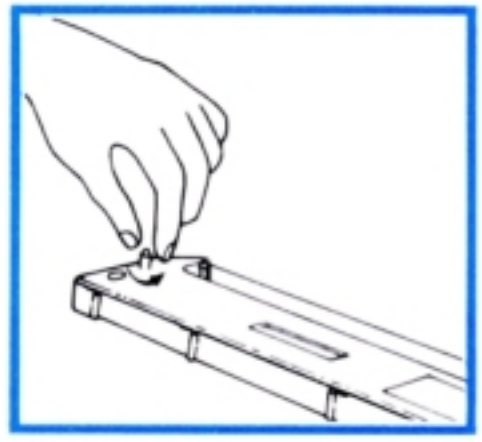
2 Remove the shipping screws (if present) from the bottom of the printer case with a Philips screwdriver, as shown.



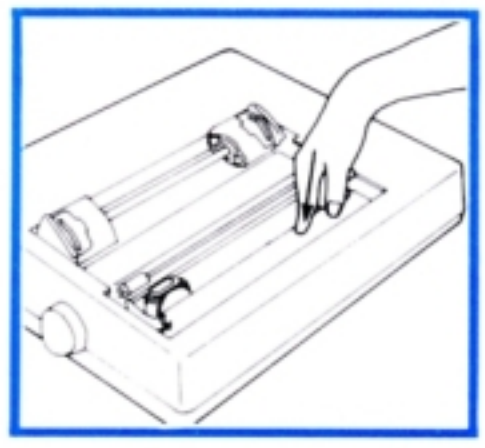
Installing the ribbon

3 With the printer positioned in front of you on a flat surface, install the ribbon cartridge, as shown.

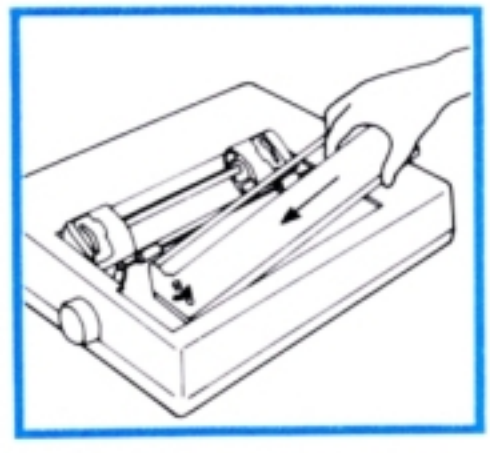
Remove the ribbon cartridge from its box and tighten the ribbon by turning the plastic knob counter clockwise.

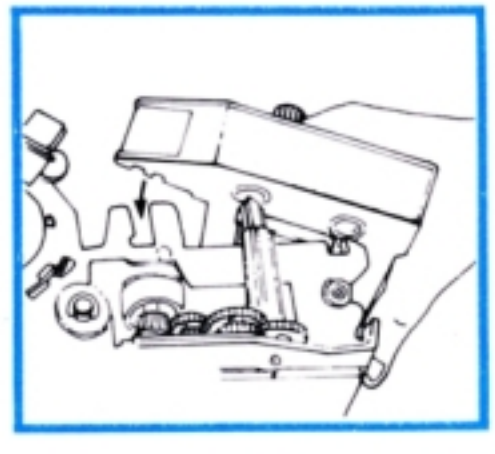


Push the printer head to the far left if it is not already in that position.



Holding the cartridge tilted with the plastic knob uppermost and to the left, engage the two catches on the left and right sides frame hooks on the printer. Then press down the front of the cartridge and engage the side tabs.

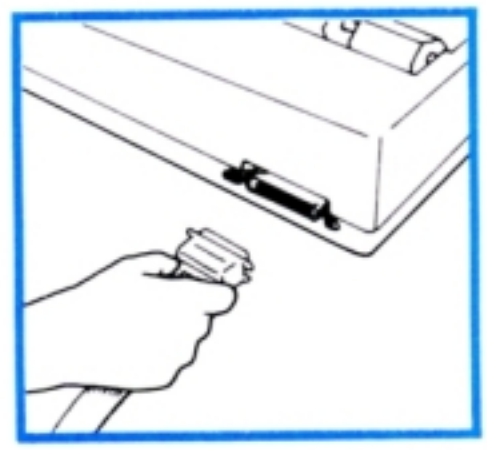




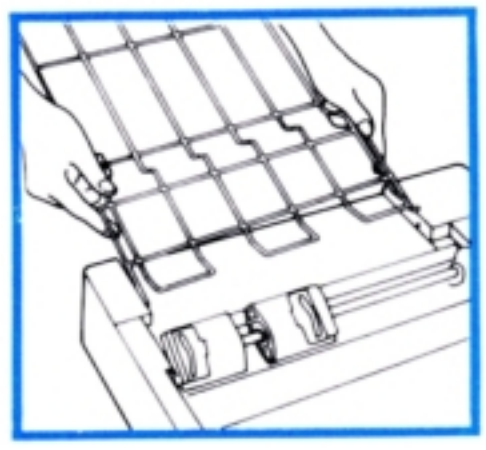
Tighten the ribbon once more, ensuring that it slips in front of the printer head, but behind the metal shield.

4 Place the printer in a convenient position close to the keyboard/memory unit.

5 Connect the lead to the printer, but not yet to the keyboard/memory unit, as shown .



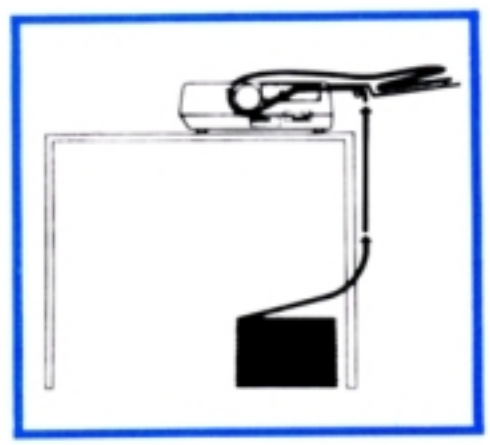
6 Set the paper guide wire rack (if required) as shown .



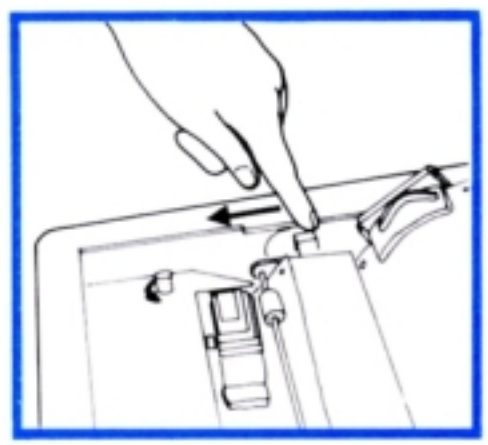
Installing the paper

7 Feed the paper into the printer as shown.

Position the paper below and to the rear of the printer.

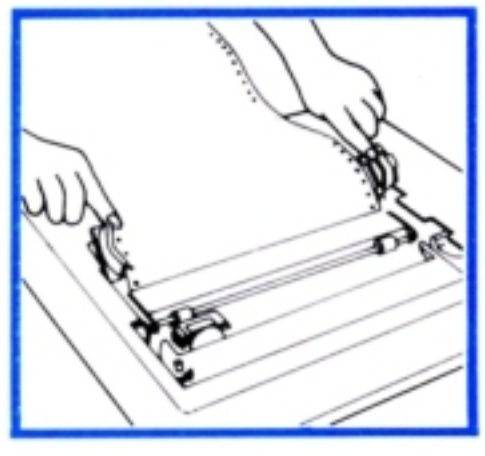


Pull the paper release lever towards you, to the RELEASE position.

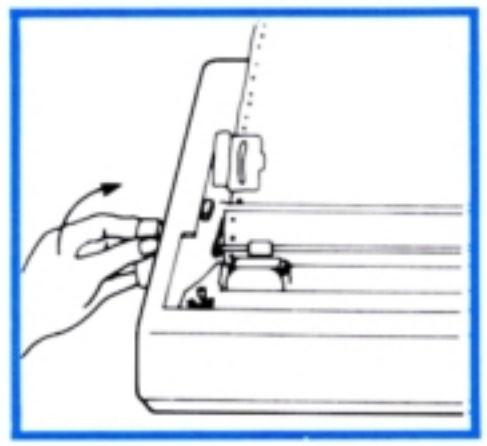


Feed the paper beneath the wire rack, into the slot and right around to the tractors, adjusting the tractors as necessary to match the paper hole spacing.

Open both tractor covers, position the paper holes on the tractor teeth and close the covers. Make sure the paper fits satisfactorily and is held firmly in place.



Feed the paper forward by turning the platen knob.

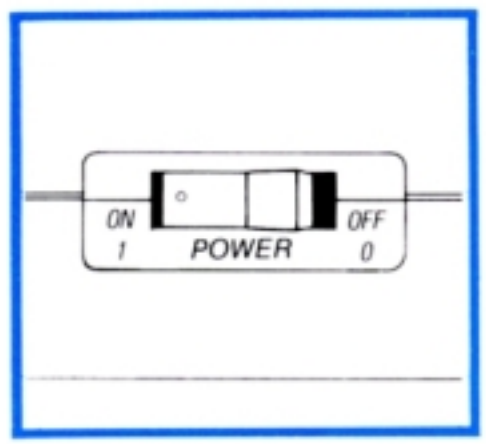


Adjust the paper so that a perforation between sheets is positioned slightly above the top of the ribbon.

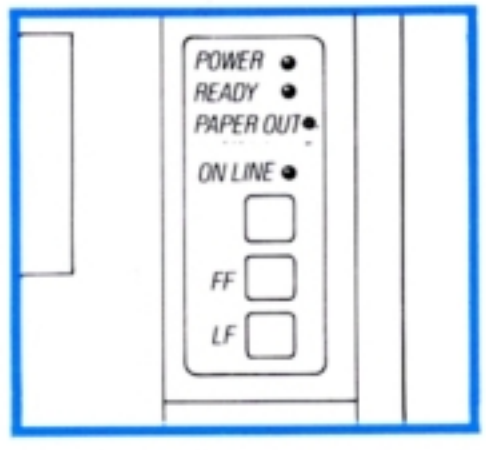
If the paper is fanfold paper, leave the lever in the release (forward) position. If single sheet paper, return the lever to the normal (friction) position.

Close the printer cover, feeding the paper through the tear-off slot.

8 With the paper installed to your satisfaction, the printer can now be tested. Make sure the mains lead is plugged in to the distribution board and switched on, and turn on the power switch on the printer.



9 The POWER, READY, and ON LINE lights will come on. If the PAPER OUT light comes on, check that the paper is properly installed.



10 Press the ON LINE button several times - it should switch on and off both the ON LINE and READY lights.

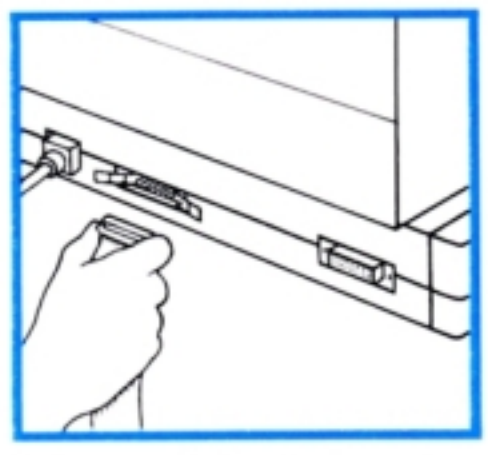
11 With the ON LINE and READY lights out, press the FF (Form Feed) and LF (Line Feed) buttons. These should feed the paper accordingly, but they should not function when the lights are lit.

12 Now turn the power switch off.

Self test

13 Hold down LF button and turn the power switch back on at the same time. The printer will print a complete set of characters and will continue as long as you hold the LF button down. The test print will be made to 80 characters per line width.

14 If the tests are satisfactory, plug in the connecting lead to the keyboard/ memory unit, ensuring that it is plugged in the correct way up. (Some plugs can be connected either way up).



Setting up the keyboard and memory unit

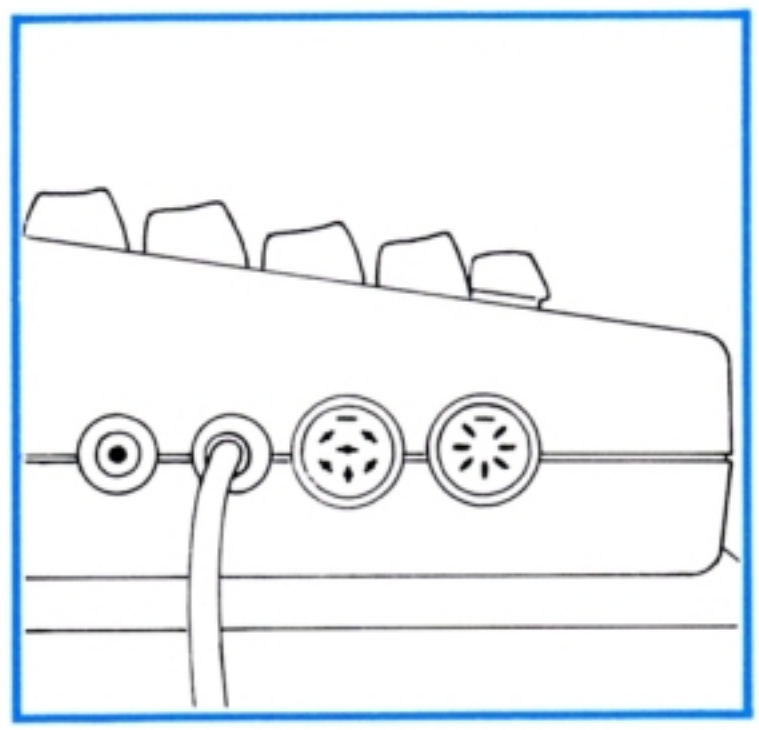
The lead from the mains adapter supplied with the keyboard/ memory unit should be plugged into the socket on the right hand side of the keyboard, which is engraved on the underside '19V AC POWER IN'. The mains lead should be plugged into the distribution board.

Now plug the video lead, supplied with the screen, into the keyboard 'Video' socket (the third socket from the front on the left hand side of the keyboard and memory unit) and into the 'Video In' socket at the rear of the screen.

Plug the mains lead from the screen into the distribution board, and switch on the screen using the red on/off switch on the front panel. A picture will appear on the screen.

If the keyboard bleeps, and the message CHECK PRINTER is displayed on the screen, check that the printer is switched on and that the ON LINE and READY lights are illuminated, and that the paper is properly installed. If this does not rectify the situation, remove the printer lead from the keyboard unit and replace it the other way up.

The terminal will now print out a 'power on' status log.



Setting up the screen

The screen can be positioned on the keyboard/memory unit as shown. Make sure it is not in an excessively hot location, and that the ventilation holes in the bottom and back of the cabinet are unobstructed.

When you are not going to use the screen for a considerable period of time, turn it off using the red switch on the front panel.

Never expose it to rain or moisture.

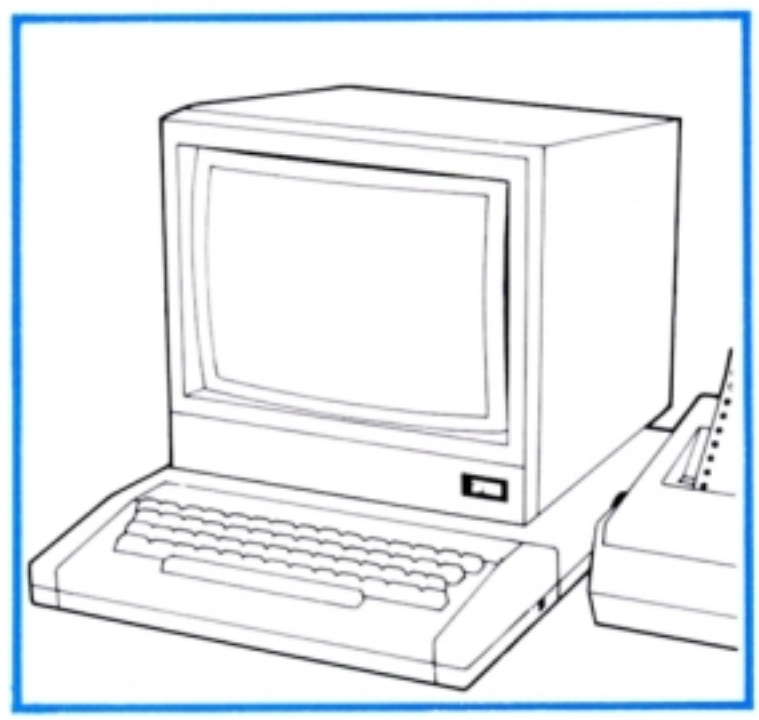
1 Having switched on as described, and with a picture on the screen, set the Graphics/Data switch on the rear of the cabinet to 'Data'.

2 Check that the Termination Switch is set to the 'HIGH' position.

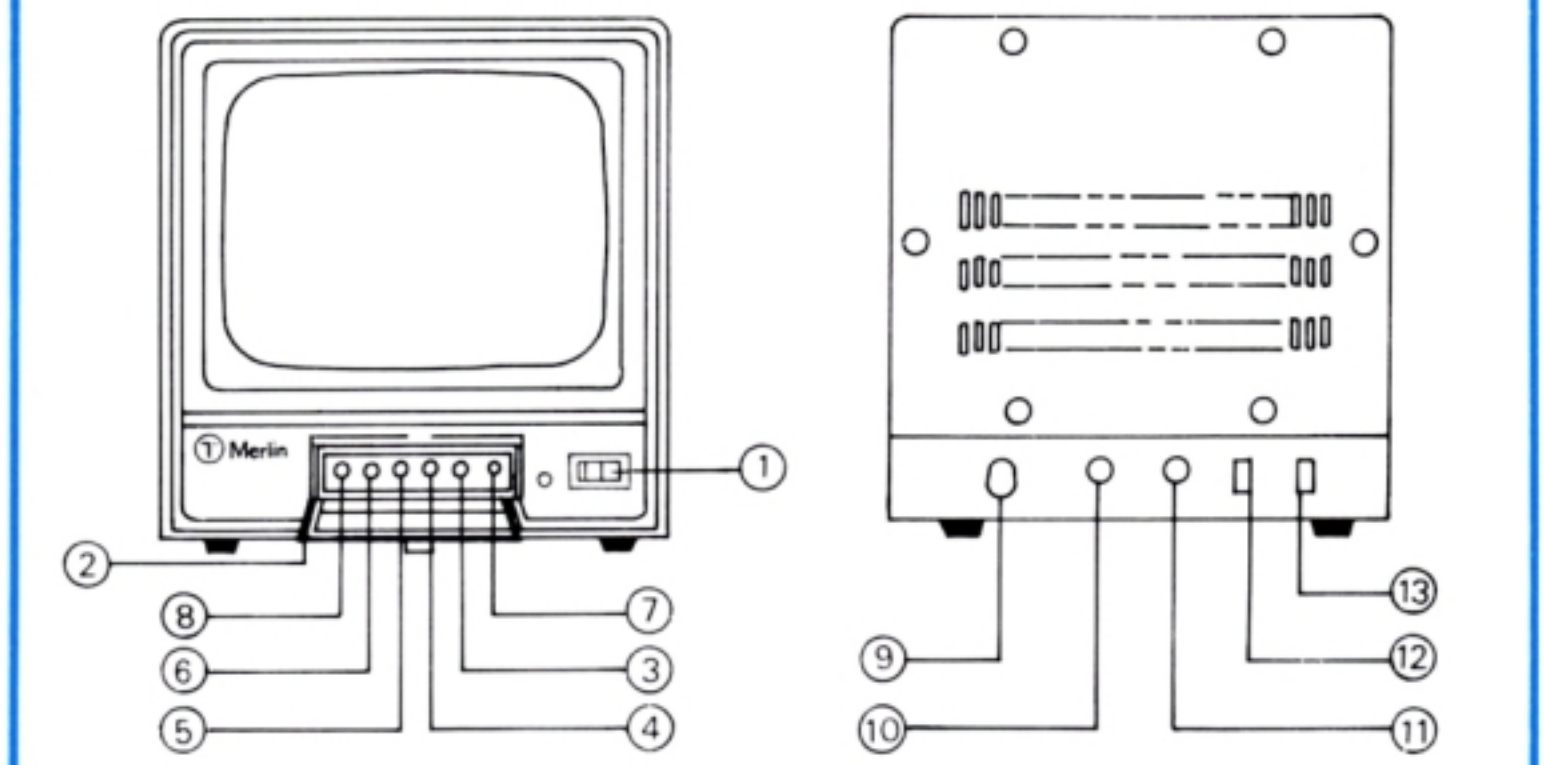
3 Adjust the Brightness, Contrast, and Hold controls as necessary for a clear picture and optimum display quality. If the picture tends to flicker, adjust the vertical hold control.

The terminal is supplied with a standard British Telecom line plug, which must now be plugged into a telephone line via a suitable telephone wall socket before it can send messages to other terminals (see p84).

Once this is done, the terminal is installed and ready for initialising and you should turn to p74.



Screen controls



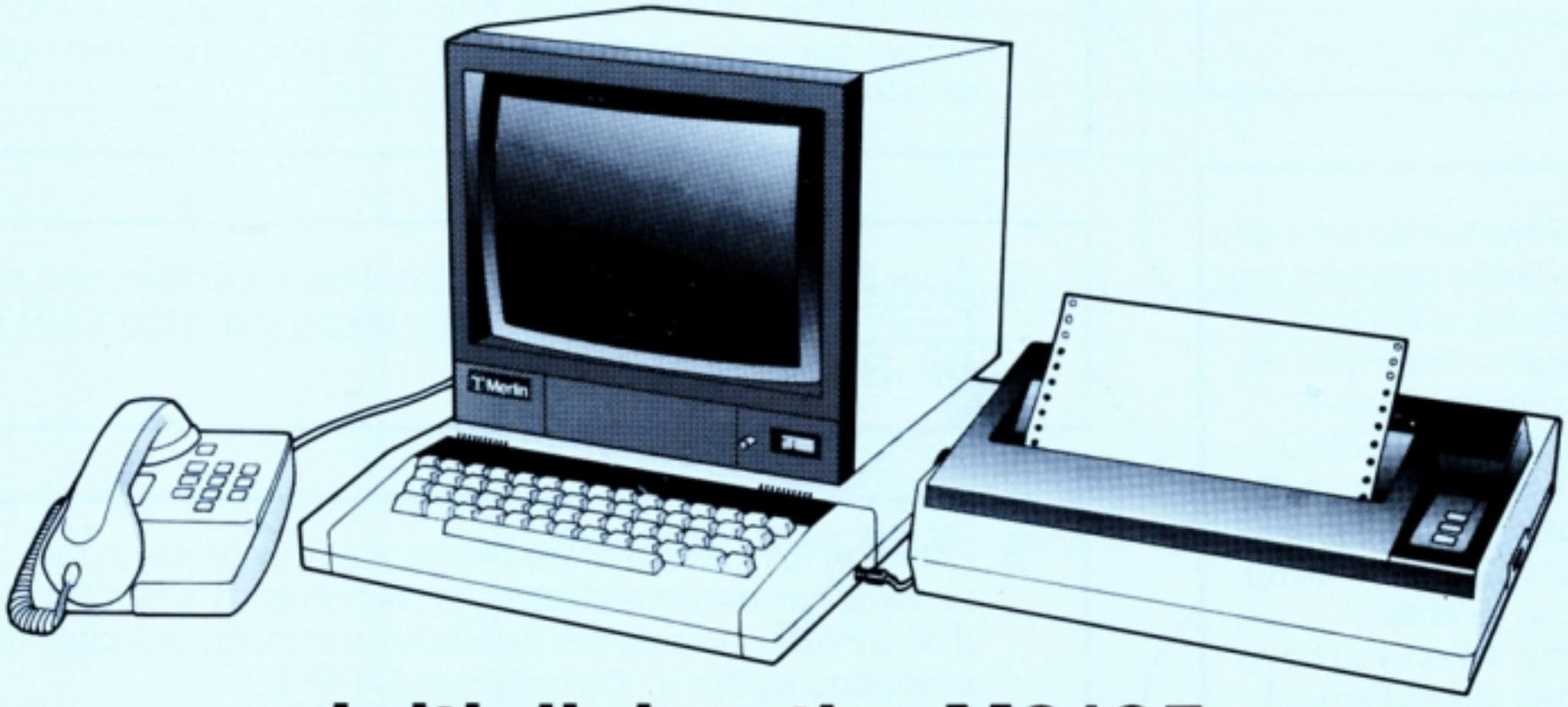
Front panel:

1 Power on/off switch with pilot lamp
2 Control panel door: press to open
3 Contrast control
4 Brightness control
5 Vertical hold control
6 Horizontal hold control
7 Vertical picture size adjustment control
8 Horizontal picture size adjustment control

Note: 7 and 8 are factory adjusted controls, preset for optimum performance, and should not be further adjusted except by qualified service personnel.

Rear panel:

9 AC input
10 Video In
11 Video Out
12 Termination switch
13 Graphics/Data switch



Initialising the M2105

Initialising the terminal

This simply means putting the terminal into a state ready for you to use.

If the terminal bleeps, and the message CHECK PRINTER appears on the screen, check that the printer is properly connected and switched on (see p68).

Should the terminal for any reason find a fault with the data you have entered, a message is displayed on the Command Screen saying 'INVALID FIELD CONTENT' and the cursor is repositioned at the start of the invalid field waiting for you to re-enter it correctly. When you have done this, press RETURN again.

1 Ensure the terminal is switched on. After a moment or two, during which the terminal performs some self tests, the screen will display the System Form, shown opposite, for you to 'fill in'.

2 You will see a small square flashing at the beginning of the 'TODAY'S DATE' field. This is the 'cursor', and the 'field' is the area between the brackets. Enter the day's date, in the format shown opposite, and press the RETURN key. The cursor will skip to the beginning of the 'TIME' field.

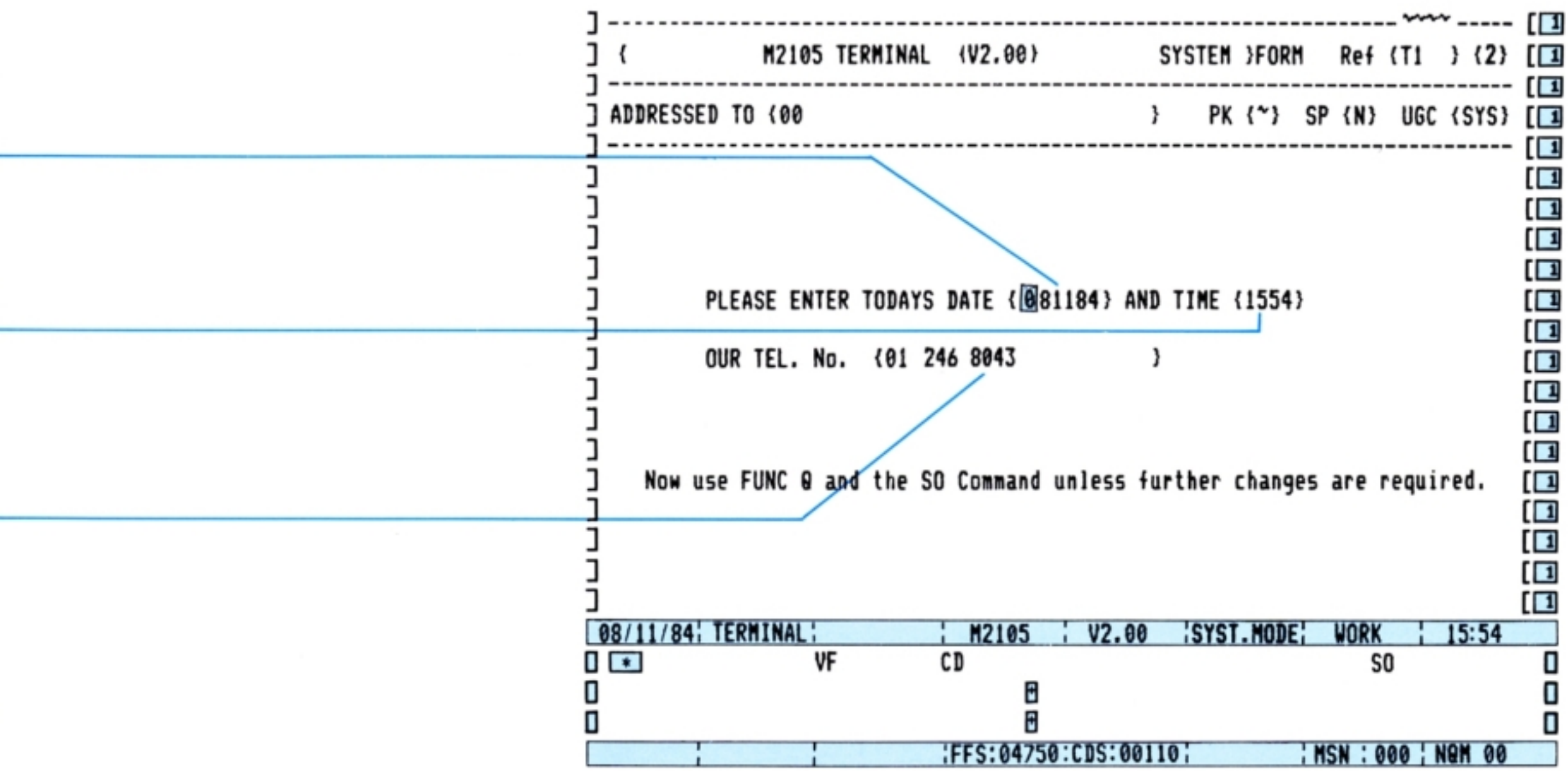
3 Enter the time of day, in the format shown opposite, and press RETURN. The cursor will skip to the beginning of the 'OUR TEL NO.' field.

4 Enter the full number of the telephone point at which the terminal has been connected, in the format 01 579 1234 x 1234. If on a PABX, be sure the extension number is included, and preceded by the 'x'. Do not press RETURN.

5 Hold down the key marked FUNC and press the 'Q' key once. Release the FUNC key and press the 'S' key once. Press RETURN. The Command Screen will ask you 'PLEASE WAIT', while the printer prints out a 'status log'.

The screen will then change to look as the standard User Screen (see p14). The terminal is now ready for you to use, and you should turn back to p8.

If you have any difficulty in going through these operations for the first time or press any wrong keys, you can return directly to the initialisation procedure at any time by pressing FUNC Q and SO. If all else fails, switch off at the mains and start the initialisation procedure once more.



If you wish, you can alter certain other 'pre-set' options within the terminal which are described in the following pages.

Initialisation - resetting options

You might need to confirm that the options within the terminal are in fact the basic 'pre-set' options, or you might need to alter some or all of them.

So there are two further screens containing information about what you can do and how to do it.

To look at the first of these screens, you will need to press [RETURN] after you have entered your telephone number as described on p74. The screen will change to look as on the opposite page.

The first question you are asked is RESET ALL OPTIONS? and the terminal asks you to type in 'Y' (Yes) or 'N'(No) where the cursor is flashing.

If you type in 'N', the effect will be that all the settings in the fields that follow will remain the same as they were before you started using the terminal. These might or might not be different from the 'pre-set' options, but if you know they are the ones you require, simply press [RETURN] and continue as from the beginning of BOX 4 on the previous page.

If you type in 'Y', the effect will be to overwrite all the fields that follow with the basic 'pre-set' options (known as default settings). If all you need to do is to confirm these settings, simply continue as from the beginning of BOX 5 on p74.

It is advisable only to use the 'Y' setting if you wish to completely 'clean out' all the old settings, e.g. if taking over the terminal for the first time.

However, if you require to alter any of the options, you should select the appropriate alternative. Type it into the field and press [RETURN]. Carry on doing this down the screen, which will change to the second of the two screens (headed 'Select voice response') as you progress.

To move more swiftly down through the initialisation screens you may simply keep pressing [RETURN]. Alternatively you can use the TAB function ([FUNC] F or [FUNC] B) as referred to on p42, or [FUNC] W or [FUNC] E for the Next or Previous Screen (p26).

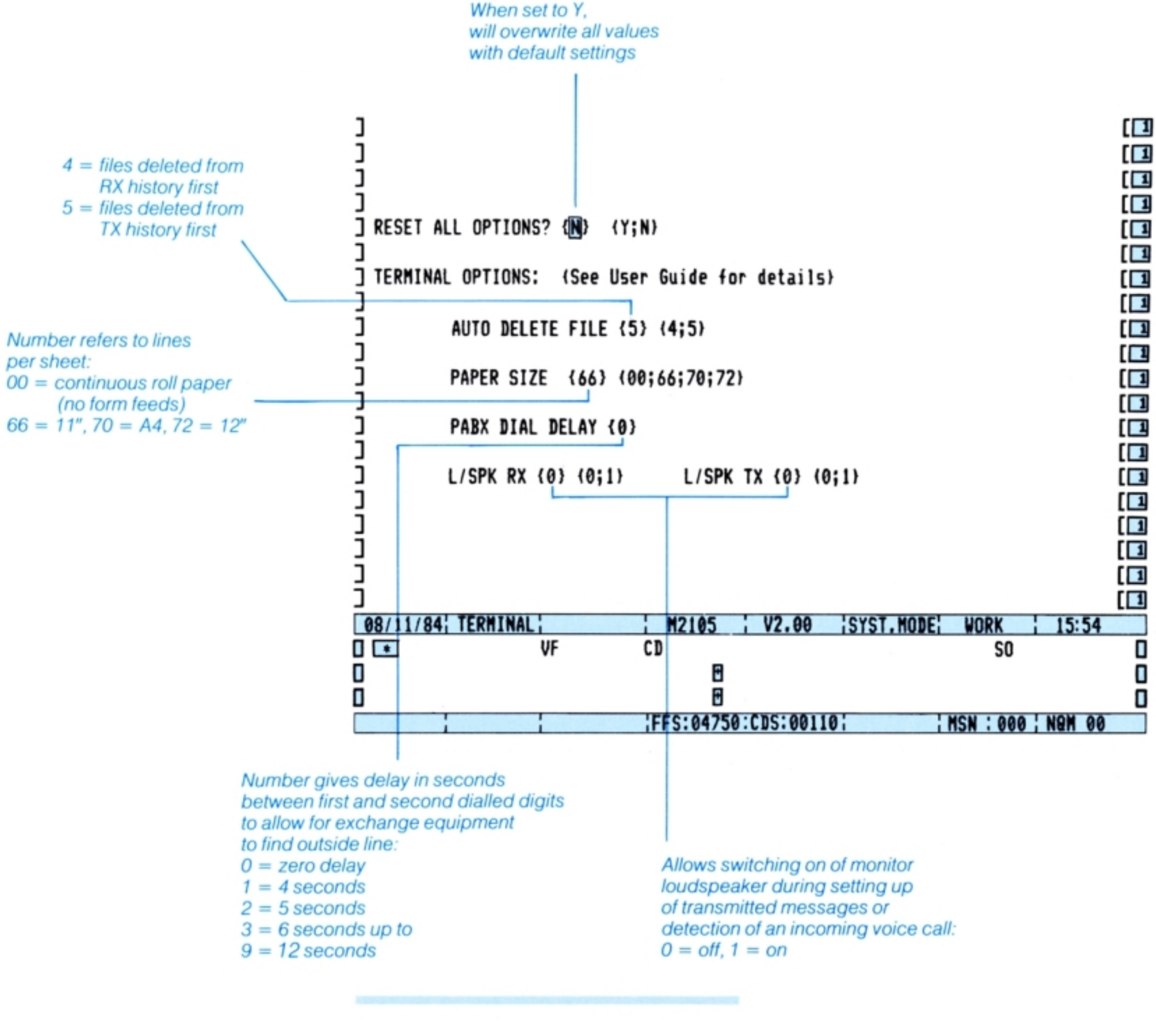
When you have completed entering all the fields, do not press [RETURN], but continue as from the beginning of BOX 4 on the previous page. Pressing [RETURN] will display additional screens of option information which are not relevant at this point.

The implications of the various options are described on the opposite page and overleaf.

Normal operation

To return to normal operation, when all changes are complete, press FUNC Q and select the SO command, then press RETURN. A log will be printed and the terminal screen will be displaying the empty Work File.

Whilst in System Mode the initialisation screens can be copied into the Pending, Forms or Operator Information files by the use of the COPY DOCUMENT command (see p30). This will allow them to be printed or sent to another terminal later if required.



Set voice response as required

Message will be: "This is a computer, please hold on (pause) this is (our telephone number)" then message as specified in 1-4, using time and telephone number information as appropriate

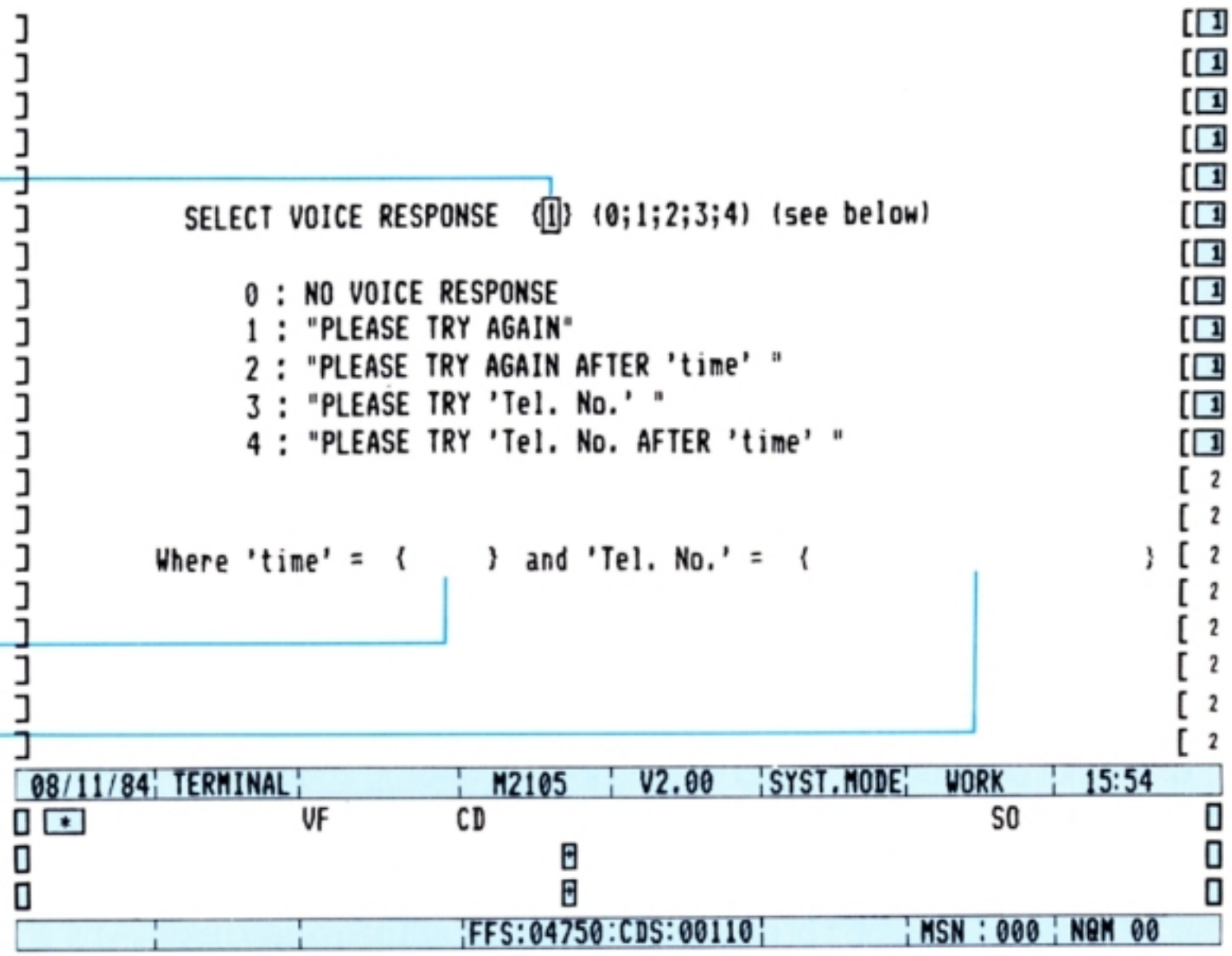
Set time as required

Time can be 24 hour or 12 hour, using 'a' for am, 'p' for pm

Set telephone number as required

Using '—' characters in telephone number field results in short pauses during spoken output.

Use of a ';' character will result in a second number being spoken as an alternative, preceded by a spoken 'OR' eg 2312; 2313 gives "two three one two or two three one three".



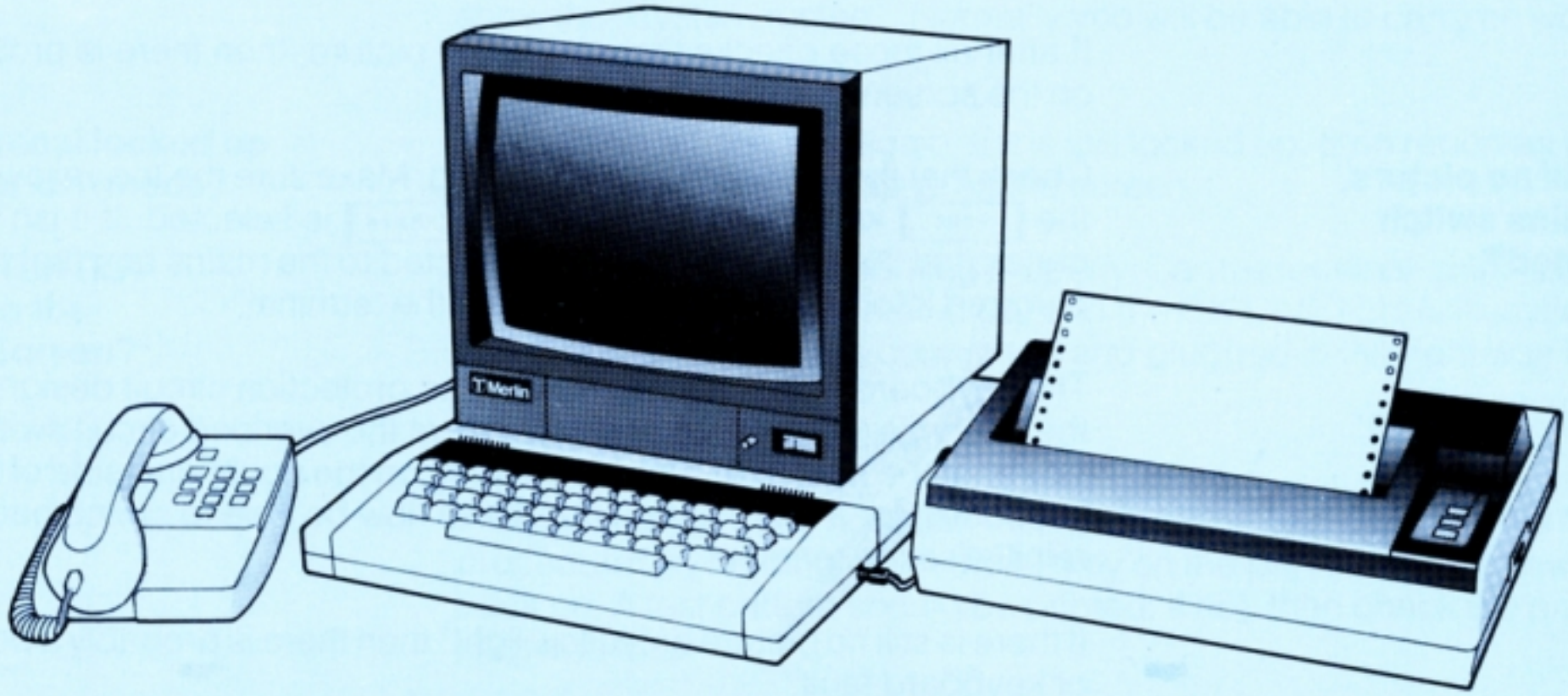
The self-tests

Whenever the terminal is switched on, the first thing it does is to automatically run a series of self-tests, and once these have been completed, it prints out a status log and selects System Mode.

One of the self-tests ensures that the terminal programs have not become corrupted. Another checks whether the Forms File and the Operator Information File, (explained more fully elsewhere in this guide) which might have been previously set to contain important information, are also uncorrupted.

If these two files are corrupt, as they invariably will be if the terminal has never been used before, then a warning message is displayed and the terminal erases this part of its memory and signifies with a printed message that it is ready for re-use.

This ensures that information cannot be retrieved from files which are corrupt. At the same time, the printed message ensures that a printed log is kept of each such occurrence.



Problem solving

Problem solving: check list

If you have a problem with terminal failing to work properly, carry out the following series of checks

Does the screen have a picture on it?

If not, check that the mains indicator (red light) ON switch is illuminated. If this is not on and you cannot switch on the display using the ON switch check that the mains lead is plugged in and the plug fuse is OK.

Check also that the power socket is OK by plugging in some other piece of equipment.

If the mains indicator is illuminated and there is still no picture, then check that the video lead from the screen to the keyboard is connected correctly, and that the Contrast and Brightness controls have not been turned down.

If after all these checks there is still no picture, then there is probably a fault on the screen or the keyboard unit.

Is there still no picture, but the mains switch is illuminated?

Check that the keyboard unit is working. Make sure the the yellow light next to the [FUNC] key is illuminated when [CAPS LK] is selected. If it isn't then check that the power supply is connected to the mains and that the lead is plugged into the right hand socket on the terminal.

The keyboard unit contains an overload protection circuit designed to cut off the power in the event of a fault. To reset the overload circuit switch off the power at the mains (or remove the plug on the right hand side of the keyboard) for a full minute. You should now be able to switch back on and reinitialise the terminal.

If there is still no picture or "yellow light" then there is probably a power supply or keyboard fault.

If there is a picture on the screen, can you use [FUNC] Q and type a message?

If not, then the terminal has possibly experienced a transient fault. There may be a message saying "System Error..." on screen.

If so, note down what it says. Try switching off the mains power and then switch back on again. If you can now reinitialise the terminal and continue then you have experienced a Transient Terminal Error. If, however, you still find that the terminal is "locked up" then this should be reported as a fault.

If you consistently experience "Transient Errors" then there may be a fault in the terminal.

Most errors will not affect the terminal but instead cause a "restart"; this will result in the self checks being carried out and a status log being printed to show the "system restart". Normally you will be able to carry on working after this restart.

Has the terminal locked up in the 'Power On' mode?

If so, switch off, then try again. If it is still locked up, then report as a fault, giving details of the message on the screen.

Is CHECK PRINTER displayed on the Command Screen?

Check that the printer is working properly. Can the terminal "print" a document? If not, then check the printer is ON and the ON LINE light is illuminated. Check the printer lead is connected and plugged in the right way round.

Does the printer have paper?

If the printer still does not print, then switch it off and carry out the "self test procedure" by holding down the LF key on the printer and then switching it back on. A test pattern should be printed: if not, then check the printer mains plug and fuse.

Is the message NO ROOM displayed on the screen?

This means the terminal files are full and documents must be deleted from its files to make more room.

When trying to QS a message that is large it may be necessary to clear space in the Received History, Transmitted History or Pending Files.

Note also that the Forms and Operator Information files compete with one another for space.

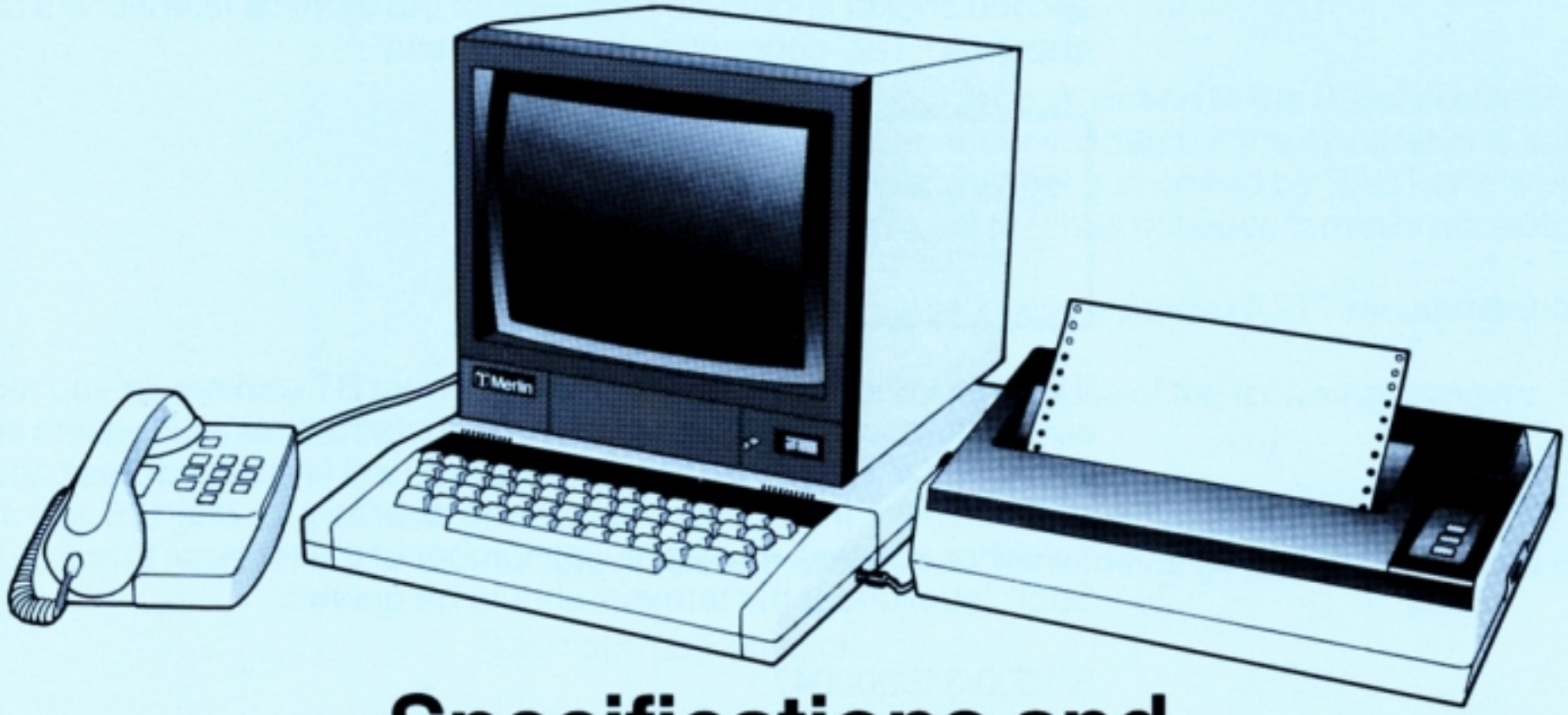
Is the terminal unable to transmit or receive messages?

You may be experiencing continued failure, 'NO RESPONSE' messages, or complaints from other users who cannot send you a message.

It is possible that the telephone line is faulty. Check that your terminal is plugged into the telephone wall socket. Try power off/on to reset your terminal. If possible pick up the associated telephone, or plug in a "spare" telephone from another line to check your telephone socket. Try phoning your terminal from another phone or ask the operator for a 'call back'. The bell should ring.

If the phone socket does not work then report as a telephone fault to the Operator or dial 151 (on another telephone!) and report to the engineers.

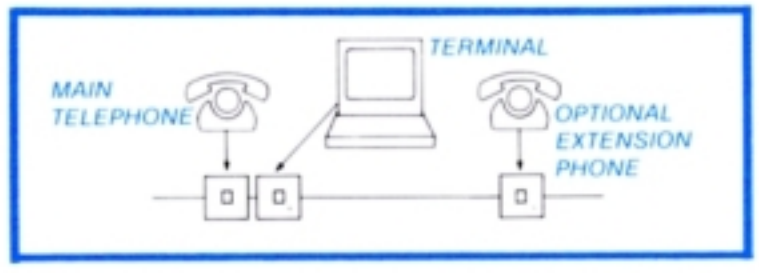
If the telephone is OK and the terminal is plugged in there is probably a fault on the terminal. This should be reported as directed on p100.



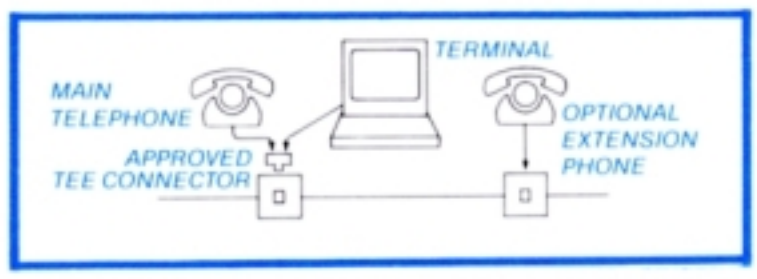
Specifications and reference

Connection of the M2105 terminal to the telephone line

So that the M2105 terminal can send messages to other terminals it must first of all be plugged into a telephone line. The terminal is supplied with a standard British Telecom line plug, and this must be plugged into a suitable telephone wall socket. Note that the terminal must not be connected to the telephone line by any other method.



When the terminal is to be used with a normal telephone handset then either a second socket should be provided for the terminal telephone's use or an approved 'Tee' connector should be used.



If your telephone does not have the correct BT sockets, or you require additional sockets to be installed then contact either your system administrator or your local Telephone Sales Office (you will find the address and telephone number in the front of your Telephone directory, or dial 100 and ask for Telephone Sales). The approval number of the terminal listed on the "Green Spot" label under the terminal should be quoted.

S/1000/3/E/500047

The terminal can be connected to any telephone line (except Shared Service or Coin Box lines) or Private (switchboard) Exchange extension lines which have a suitable line socket. It will only work on "loop disconnect" lines - i.e. standard "dial type" telephones.

If your terminal is to be connected to a Private Exchange with 'MF' signalling (telephones have ★ and # keys and make 'bleeping' sounds when dialling) then ensure that the Private Exchange will respond to 'loop disconnect' dialling. If in doubt contact your System Manager or Merlin equipment supplier.

The terminal will work best if connected into an ordinary telephone or extension line with only a single telephone handset. The terminal can be plugged into multiple telephone installations, but operational problems with the terminal making calls on a busy line may be experienced.

Use with multiple extensions (RENs)

If you decide to use your terminal in conjunction with several extension telephones you should be aware of the concept of 'Ringer Equivalence Numbers' (REN). Every telephone instrument or modem has a REN; the M2105 terminal has a REN of 0.75 or 3/4. To ensure that all telephones connected to a line will ring, the sum of the RENs of all connected telephones should not exceed 4, therefore up to three extension telephones could be used with one M2105 terminal. A normal telephone has a REN of 1.

Note that only one M2105 terminal should be connected to a telephone line, and also that it is not advisable for the terminal to be used in conjunction with any other telephone answering machines or Auto Answer Modems.

The M2105 is fully tested and approved for connection to the British Telecom network.

The approval of this terminal for connection to the British Telecom Public Switched Telephone Network is invalidated if the apparatus is subject to any modification in any material way not authorised by BABT or it is used with or connected to internal software that has not been formally accepted by BABT.

This terminal will auto answer in accordance CCITT recommendation V25.

This apparatus is approved for the use of the following facilities:

Call Progress Monitor

Storage of telephone numbers for retrieval by a pre-determined code

Automatic call initiation

Operation in the absence of proceed initiation

Automatic dialling facilities

Automatic storage of last number dialled

Repeat attempt facilities:

a) Single - last number dialled
b) Multiple (automatic)

Auto clear from the call originating end

Modem

Answering machines

Any other usage will invalidate the approval of the apparatus if, as a result, it then ceases to conform to the standards against which approval was granted.

It cannot be guaranteed that the apparatus will operate correctly under all possible conditions of connection to compatible PBX's. In case of difficulty please refer in the first instance to your system Manager or Merlin equipment supplier.

The apparatus is approved for connection to compatible PABX's, as listed below, which return secondary proceed indications. (Exchange dial tone heard after the first digit has been dialled. Typically a 9 or 8). This list is maintained by the Department of Trade and Industry and your Merlin Service Desk should be consulted for further information.

Approved Private Branch Exchanges

PABXs	PMBXs
PABX1-5 and 7	3 + 10 5 + 20
PABX6	10 + 30 10 + 50 10 + 60
UH 200, 900	
Pentomat P200 Pentomat P1000CT Pentomat P1000T2 IBM 1750, 3750	1A, 1B, 4, 11 12 (Premiere)
ARD 561, 2 AKD 791, 2, 3	
EBX 8000 ITT 4080 PDX 800, 2000 SL-1 IDX (TDX) Monarch Ensign Herald Kinsman (Royale SX 20) Regent (Royale SX 200) Viceroy Minimaster 1, 2 Md 110 OCS 300	

M2105 - brief specifications

Keyboard/memory unit

Microcomputer

Processor	6502 2Mhz
Memory	96 Kbytes ROM 48 Kbytes RAM 16 Kbytes non volatile CMOS RAM
Interfaces	Telephone line V24 connection (RS 423) Printer (Centronics) Composite video RGB colour Modulated UHF(TV) Cassette tape

Integral Modem

Modes	Auto dial Auto answer - V25
Transmission speeds	1200/75 75/1200 } Full Duplex 300/300 1200/1200 Half Duplex

Keyboard

56 key QWERTY layout
2 key roll over
Auto repeat

Power Source

220/240V via 18V adapter

Dimensions

Width 345mm, depth 440mm,
height 55mm

Screen

High resolution	20Mhz±3dB
Screen size (diagonal)	310mm (12″)
Screen colour	Amber, non reflective
Input signal	Composite video
Power source	220/240V AC
Dimensions	Width 300mm, depth 300mm, height 275mm
Weight	8.4kg

Printer

Printing speed	80 characters per second, bi-directional
Maximum characters per line	80 normal or 142 condensed
Paper feed	Adjustable sprocket feed and friction feed
Paper type	Fanfold or single sheet
Paper width	101.6mm to 254mm
Maximum number of copies	Original plus three copies
Ribbon	Cartridge ribbon
Interface	Centronics parallel
Power source	220/240V AC
Dimensions	Width 377mm, depth 295mm, height 125mm
Weight	5.3kg

Message	Meaning
Comms Busy	The terminal is busy sending messages over the telephone line.
Different Doc	Response from FIND ITEM - string found in different document.
Doc End	End of Document.
Doc not Countersigned	As for 'Doc Not Signed'
Doc not Signed	Signature Field on Form not complete (Either delete 'Signed by' field or enter PIN).
Doc Signed	Document is signed - cannot be altered. Must be 'unsigned' to allow change.
Doc Top	Top of Document.
File End	End of File.
File Top	Top of File.
Invalid Field Content	A Field in a Form document has not been filled in correctly by the user.
Check Printer	Warning that printer is not connected or not ON LINE, or may be out of paper.
No Doc	When using SF No document has been previously QUEUED FOR SENDING to this telephone number.
No Marked Section	Attempt to read in marked item which doesn't exist.
No Match	String specified in FIND ITEM cannot be found.
No Open Field	End of Form - no further fields after this point.
No Room	File space is full, use DD to delete unwanted documents.

Printer in Use	The printer is in use for receiving or transmitting messages.
Printer not Ready	Printer is OFF LINE or unplugged, or out of paper.
Sensitive	This Field is 'sensitive' and cannot be 'marked' or have marked text read into it.
Too Many Marks	A block is already marked or 10 fields in a Form are already marked. Use CM to clear marks.

Information Messages

A number of information messages are displayed on the Command Screen when the terminal is transmitting or receiving messages. They are listed below.

Message	Meaning
About to dial	Terminal is about to make call within next 10 seconds. Use [ESCAPE] to abort if necessary.
Call answered	Terminal has answered call.
Dialling XXXX	Terminal is dialling number XXXX.
No Response	Attempt to establish contact with receiving terminal has failed. Terminal will try again.
Operator Intervention	Message aborted by user pressing [ESCAPE]
Possible call	Incoming ringing has been detected.
Receiving	Receiving message.
RX Completed	Terminal has successfully received and printed a message.
RX Failed: Reason	Receipt of message failed for specified reason.
RX Time Out	Message has started to be received but failed due to expiry of internal time period. User need take no action, automatic retry will be effected.
Transmitting	Transmitting message.
Trying to Establish TX session	Terminal is attempting to establish contact with receiving terminal.
TX Completed OK	Message transmitted OK.
TX Failed: Reason	Transmission failed for specified reason.
TX Time Out	Message has started to be transmitted, but failed due to expiry of internal time period. User need take no action, automatic retry will be effected.
Voice call	Incoming call is not from another terminal. May be from a 'human' caller. Pick up telephone handset and press [ESCAPE].

Glossary

answerback — This is the telephone number of the "Receiving Terminal" and is used to check that the message is being sent to the correct number.

asterisk — (*) Character used to allow the Find Item command to find 'similar' strings to those specified in the 'string' field.

attributes — Referred to a Forms document, these describe the types of fields used in a form e.g. Date, Numeric, Mandatory, Preset etc.

auto answer — The automatic answering of an incoming telephone call by the computer.

auto repeat — The action of certain keys on the keyboard automatically continuing their function whilst held pressed down.

BABT — British Approvals Board for Telecommunications apparatus connected to public networks.

by hand — A message has failed to be sent to a destination. It should be sent by alternative means, or to a different telephone number.

CCITT — Consultative Committee for International Telephones and Telegraphs.

character — Single letter or number or punctuation which can be printed or displayed (includes a single 'space').

command screen — Area of display where 'commands' are entered and warning or information prompts are given.

communication information header — This is a title block inserted onto every document that has been 'Transmitted'. It shows Date and Time as well as who the message was From and To.

counter signature — This is a field in a form which is similar to the "signature" field. This acts as a 'double lock' on the form.

cursor — Flashing square '□' character in User Screen showing the position where text can be altered or typed.

document — A group of typed words which form a complete memo, letter or form. May consist of several pages.

editing — The process of typing or inputting a piece of text, also that of amending text shown on the screen.

extent Used in conjunction with the Find Item command to tell the terminal where to 'look' for the specified string. May be the current document (D), the current file under review (F) or the entire system (S) - every file.

field A space within a Form document which can be typed into. It is shown by the { } brackets on either side.

file An area in the terminal's memory which is used for the storing of one or more similar documents. i.e. Forms File.

find item Command for finding the occurrence of a particular word in a document.

form A type of document consisting of 'protected' and 'unprotected' areas, which forces the user to type in the 'unprotected' areas or fields.

forms file A non volatile (safe) file used for storing Form Documents only.

forms header This is an additional title block which appears on the top of every Form document, giving a title, reference code and other details.

handset mode The terminal will answer incoming phone calls after a 20 second delay. When set to Handset Mode the terminal will not dial any calls for 5 minutes.

hash (#) Character used to allow the Find Item command to find 'similar' strings to those specified in the 'string' field.

invalid field This means the terminal has found an error in the validation of a form. The cursor is positioned in the 'Invalid Field'.

loop disconnect Telephone dialling using line disconnections at 10 pulses per second (normal dial).

mail box file An area of memory in which documents or messages are temporarily stored after they have been 'Queued for sending' whilst the terminal is 'posting' them to their destination.

mark A mark is shown on the user screen as a 'highlighted' block of characters. When an item has been 'marked' in a document it can be read back into the Work File document.

message As for Document, but more generally used to refer to a document which has been transmitted or received by the terminal.

MF Multifrequency telephone dialling to specification MF4.

mnemonic Two letter commands which can be selected from the keyboard. These commands are shown as a menu within the 'Command Screen'.

modem Electronic device to enable computers to 'talk' to each other over the telephone line.

operator information file (OPINF) A non volatile (safe) file used for storing Text documents.

PABX Private Automatic Branch Telephone Exchange - i.e. private switch board used in an office.

page This is a 52 line long collection of text. It is the maximum amount of information that the terminal can print on a single 'sheet of paper'. The page number is shown on the right hand margin of the 'User Screen'.

pending file (PENDG) Temporary storage file (not protected if terminal is switched off).

PIN This is the Personal Identification Number which is required to be entered to 'sign' a Form document.

received history file (RXHST) File area which is used by the terminal to store messages after they have been received.

screen This is the screen of the monochrome monitor or display unit.

scrolling Moving a document up or down on the screen.

sensitive This applies to a field in a form for which marking is not allowed.

sheet This can be specified when printing a document, to print only a single sheet, with no title or header blocks.

signature Is the process of signing a Form document using the 'Signed by' field. This 'locks' the Form, preventing any change.

simple message A document which is not a Form, that is, does not contain any protected fields.

STD code The full dialling code needed to 'phone up' the terminal from anywhere in the country.

string A group of 10 characters which can be specified to the 'Find Item' command to tell it what you want to be found.

system Referring (in the 'Find Item' command) to a search through every file in the terminal.

system form

The initialisation screen of the terminal, which is designed as a special type of form.

system mode

The state of the terminal on 'switch on', or after selection of 'SO' command, which enables certain parameters or options to be changed or set.

tab

The function command that allows the user to step the cursor rapidly forwards ([FUNC] F) or backwards ([FUNC] B) in the User Screen.

In Forms, the cursor will step to the next ([FUNC] F) or previous([FUNC] B) unprotected field.

In simple messages, the cursor will move to align itself with the vertical marks in the highlighted band surrounding the Command Screen. This is actually a step of 8, then 10, 10... characters at a time. The user cannot set his own tab stop positions.

terminal

The combination of Printer, Keyboard/Memory unit and Display Screen plugged together to form the M2105 Messaging Terminal.

terminal mode

This means the terminal will answer all incoming calls immediately. It also implies that the 'Terminal' is using the telephone line.

tractors

Part of the printer mechanism which fits into guide holes on the paper.

transmitted history file

(TXHST) File area which is used by the terminal to store messages after they have been transmitted.

user screen

This is a 20 line 'window' on the 'document' currently on display. Three screenfuls of information make up one page.

validation

When filling in a Form document each field is checked to see if it has been completed in accordance with the form designer's specification of the field attributes. Validation on each field takes place whenever [RETURN] is pressed, also on the entering of the VF and QS commands during 'Form Filling' mode.

voice call

Incoming telephone call not recognised as being from another terminal.

wild card

A special character (*#) that allows the Find Item command to find 'similar' strings to those specified in the 'string' field.

wordwrap

The process by which a single word, if it is too large to fit on the current line, is automatically moved down to the next line as it is being typed.

work file

Only file in terminal which can be 'edited', allowing the input or alteration of text.

Summary of commands

Selecting commands	Key or command code	Function	Page reference
	FUNC Q	Change from User to Command Screen or vice versa	13
	→ ←	Move the cursor to command on Command Screen	13
	RETURN	Implement the selected command	13
Document commands (use in Command Screen)	Review file RF	Access filed documents. Options W, P, O, R, F, T or L	25
	Copy document CD	Copy document on screen. Destination files W, P, O or F	31
	Print PR	Print document on screen. Select whole (D)oc or single (S)heet	33
	Delete document DD	Delete document on screen. Confirm (Y)es or (N)o	31
	Queue for sending QS	Document is copied from Work File to mail box to await sending. Enter destination telephone number (use ';' to separate multiple telephone numbers)	49

Additional Form commands (use in Command Screen)	Blank all fields BF	Clears all unprotected fields on a Form	42
	Verify form VF	Check completed Form is correct, that is, that all fields are valid	42
	Queue for sending QS	Form is copied from Work File to mail box. Selecting Normal takes telephone number from Form header. Otherwise enter number, and specify if validation needed	51
General commands (use in Command Screen)	Find item FI	Search for string. Options (D)ocument, (F)ile or (S)ystem	39
	Clear all marks CM	All marks are removed from File	35
	Resume RS	Return to Work File (after reviewing)	25
	Receive RC	Set terminal to take over incoming data during telephone conversation	55
	Send all for SF	Send all the documents in the mail box to this telephone number now after previously dialling telephone number	55
	Dial number DN	Dial telephone number	56
	System SO	Enter or return from System mode	74

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Consumables (paper etc) contact .....

Faults contact .....

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