

Viewdata System

CommuniTel



Reference Manual

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**COMMUNITEL
VIEWDATA
SYSTEM**

**REFERENCE MANUAL
FOR THE
LOCAL SYSTEM PLUS TERMINAL**

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Contents

page

PREFACE	x
CHAPTER 1 GETTING STARTED	1
Backing up the disks supplied	
Starting Up The System	
Disk Users	
Booting The System	
Possible Problems	
Alternative Start-Up	2
Econet Users	
*VBOOT	
Possible Problems	
Alternative Start-Up	3
Other Possible Start-Up Problems	
The System Menu	5
Introduction	
The Facilities Available	
The Core System	
The Communications Software	
The "Housekeeping" Facilities	6
Using The Menu	7
Leaving The Viewdata System	
Re-Configuring The System	8
Introduction	
Changing the Disk Drive Settings	
Changing the I.P. Heading	9
Turning the Screen Flicker On or Off	10
Saving the System Settings	
Personalised System Configuration	12
Creating a Viewdata Base File	14
The Random Access Filing System	
Single Frame per File Mode	15
Econet Users	
Preparing a Database Disk	
Single Drive, Single Sided	
Single Drive, Double Sided	16
Double Drive, Single Sided	17
Double Drive, Double Sided	
Specifying the Type of Database	18
Specifying the Size of Database	19
Maximum Sizes of Database	
Standard Viewdata Base	
Host Intray File	
Host Intray on Single Sided/Single Drive Unit	
Further Intray on Single Sided/Single Drive Unit	
Further Tip for Single Sided/Single Drive Users	20
Entering the Internal Title	
Master/Template Database Disk	22

Calling Up Programs From The Menu
System Disk and Data Disk
Overriding the Default Directory

CHAPTER 2 SEARCHING A DATABASE	25
Selecting the Search Program	
Searching Through a Database	26
Menu Choice	
Continuation Frames	
Stepping Back Through Previous Frames	
Jumping Directly to a Page	
Interrupting the Display	
Refreshing the Screen	27
Special Keys	
Reveal Key	
Search Errors	
Leaving the Search Program	28
CHAPTER 3 USING THE HEY PRESTO EDITOR FOR THE BBC MICRO	29
Introduction	
Starting Up	
The Editor Menu	30
The Red Menu Bar	
Making a Selection	
Frames Per File	
Possible Problem	
Leaving and Returning to the Menu — The Layout of the Sections	31
Escaping from the Program	
Pressing Break by Mistake	
The Menu Options	32
Entering a Title and Frame-ID	33
Entering the Title	
Entering the Frame-ID	
Titles under Single Frame/File Mode	34
Titles under Multiple Frame/File Mode	
A Note on Pages and Frames	
Handling the Current Page	35
SET UP A NEW PAGE	36
RETURN TO CURRENT EDIT	37
ALTER CURRENT PAGE TITLE	38
Copying a Frame	

Setting up Routeing	39
Returning to the Menu	40
Alternative Ways of Routeing	
1. Choice Type: Strict	
2. Choice Type: None	
3. Choice Type: Free	
A Note on Entering Titles	
1. Return to Enter	
2. Cursor Forward	
3. Escape Key	
4. Pressing * to Cancel an Entry	
Setting up a Carousel	41
Network Read Permission	
The Remaining Fields in the Frame Table	
1. CUG	
2. User Access	
3. Frame Type	
4. Price	42
Handling a Single Frame on the Filing System	43
Introduction	
Random Access Filing System	
SAVE THE CURRENT PAGE	44
Error Messages	
LOAD AN EXISTING PAGE	45
DELETE AN EXISTING PAGE	46
The Multiple Frame/File 'Rubbish Bin'	
Error Messages	
Handling the Filing Systems	47
SYSTEM * COMMAND	48
Defining the Function Keys	49
Locking a File	51
Seeing Who is Active on the Network	52
CHANGE THE CURRENT FILER	53
Notes	
CHANGE THE CURRENT * DIR	54
Under the DFS	
Under the NFS	
1. Changing Directories	
2. Getting to another Viewdata Base	55
3. Getting Back to Your Own Database	
Swapping Disks using 'CHANGE THE CURRENT * DIR'	56
Disk Checking	
The Procedure for Swapping Disks in a Drive other than that currently selected	57
DISPLAY CATALOGUE	58
Multiple Frame/File Mode	
Single Frame/File Mode	59
The Screen Editor	60
Overview	
Top Row	
Tab Stop Row	
The Bottom Row	

The Keyboard	61
Cursor Keys	
Shift Lock	
Function Keys	
Function Keys on the BBC Micro	
Auto Indent and Colour Wrap	62
Auto Indent	
Colour Wrap	
Using the TAB Key to Force Indenting and Colour Wrap	
f0 — The Help Key	63
f0 on its own displays the EDIT FUNCTIONS	
SHIFT and f0 displays the Text Colour Codes	
CTRL and f0 displays the Graphic Colour Codes	
SHIFT AND CTRL and f0 displays the Special Viewdata Effects Codes	
Some General Points about the Function Keys	65
First a Warning	
BBC Micro's Default Settings	
Colour Coding in the Displays	
Pairs of Functions	
Edit Functions	66
Function Keys Pressed on their own: — Help, Insert Character, Delete Character, Insert Line, Delete Line, Erase to End of Line, Home Cursor, Tab Stops, Search Mode, Own Function Key Definitions	
Viewdata Control Codes	68
'To the End of the Line' Rule	
Finding Where Codes Are	
Text Colour Codes: — Help, Red, Green, Yellow, Blue, Magenta, Cyan, White, Flash, Steady	69
Graphics Colour Codes: — Help, Red, Green, Yellow, Blue, Magenta, Cyan, White, SetGraphics Pattern, Put Graphics Pattern	70
Special Viewdata Effects: — Help, Double Height, Normal Height, Separate Graphics, Contiguous Graphics, Hold Graphics, Release Graphics, Conceal Display, Black Background, New Background	71
Double Height	72
Characters Preceding Double Height or Following Normal Height	
Knocking Out a Double Height Code	
Editing Functions	
When It Doesn't Work	
Bottom Row	
Graphics Mode	73
Leaving the Graphics Mode	
Setting Up a Graphics Pattern	
Copying the Graphics Pattern to the Cursor Position	
The Keyboard	74
Graphics Colour Codes First	

Special Effects Codes	75
SEPARATE GRAPHICS	
CONTIGUOUS GRAPHICS	
HOLD GRAPHICS	
RELEASE GRAPHICS	
Tutorial Guide	
Search Mode	76
Differences from the SEARCH PROGRAM	
Reveal and Conceal	
Correcting an Error in the Image	
Correcting an Error in a Frame's Routing	
Continuing with the Checking	
CHAPTER 4 CAROUSEL AUTOMATIC DISPLAY	77
Introduction	
Setting the Carousel Going	78
Stopping the Carousel	
Creating a Carousel	79
Entering the Next Frame	
Entering the Time	80
Saving the Frame	
Setting up a Complete Cycle	
Adding a Page to the Cycle	
Removing a Page from a Cycle	
Carousel on the Network	81
Displaying the Same Carousel on Different Machines	
Displaying Different Carousels on Different Machines	
Remotely Starting Carousels	82
Dynamically Modifying a Carousel while it is Running	83
Modifying a Frame	
Adding or Removing a Frame from the Cycle	
Adding or Removing Complete Sections	
CHAPTER 5 USING PRINTERS	85
Configuring for Your Printer	
Choosing the Printer Type	86
Colour Choice on the Integrex Printer	
Using a Screen Dump ROM	87
Selecting the Correct Interface	88
Parallel Interface	
Serial Interface	
User Printer Handler	89
Econet Printer Server	90

Size of Printout	91
To Line Feed or Not to Line Feed?	
Saving the Printer Settings	92
Introduction to the 'Frame Printer' Software	93
The Facilities Available	
Notes on Particular Printers	94
Integrex Colourjet	
Serial Integrex Colourjet	
Epson Programmable Printers	
Epson Non-Programmable Printers	95
Microline Printers With Graphics	96
Typewriter Printers	
ASCII Only/Screen Dump ROMs	
Using an Econet Printer-Server	97
Printing Viewdata Frames	98
Starting Up	
The Frame Printer Menu	99
Using Screen Dump ROMs	
Dealing with Lists of Frames	101
Using the Serial Integrex Printer	102

CHAPTER 6 INSTALLING THE SYSTEM ON AN ECONET

Preparation	
Transferring the Software to the Fileserver	104
Automatic Transfer using the File Copy Utility	
Automatic Transfer using the 'Convert DFS File'	105
Manual File Transfer	106
Preparing the Files	108
Setting up the Menu and Start Up Files	
Accessing the New Files	
Testing the Transfer	109
Setting up a Pseudo User 'VIEWDATA'	
Setting up a Viewdata Base	
Testing the System	
Setting up Users	111
Setting up the Auto Boot Option	
Users with their own Viewdata Bases	
Granting Public Access to a Viewdata Base	
Multiple Editors of a Viewdata Base	112

CHAPTER 7 VIEWDATA AND TELESOFTWARE FUNCTIONS

Introduction	113
Getting Started	
Part 1 Terminal Functions — an Overview	
Housekeeping Functions	117
Help f 0	
Exit SHIFT + f 0	
Operating System Commands f 1	
Configuration Commands SHIFT + f 1	
Keys f 2	
Pause SHIFT + f 2	
Communications Functions	118
Call f 3	
Send SHIFT + f 3	
Leave f 4	
Hold SHIFT + f 4	
Telesoftware Functions	119
Download f 5	
Save File SHIFT + f 5	
Frame Filing Functions	120
Load f 6	
Zip-Send SHIFT + f 6	
Edit Frame f 7	
Swap Viewdata Base SHIFT + f 7	
Save Frame f 8	
Delete Frame SHIFT + f 8	
Print Frame f 9	
Catalogue Frames SHIFT + f 9	
Reveal Function	121
How to Use the Function Keys	122
Part 2 Terminal Functions in Detail	123
Housekeeping Functions	
Help	124
Exit	125
Operating System Commands	126
Configuration Commands	127
Keys	128
Creating Key Definition Frames	
Terminal Functions in Key Definitions	130
Editing Functions in Key Definitions	131
Problems with the Keys Function	132
Options	
Use of *EXEC Files	133
Pause	134
Options	

Communications Functions	135
General Viewdata Functions	
Searching for Information	
Ways of Getting Around in a Viewdata Base	
Frame Tagging	136
Sending Information	137
Filling in Input Frames	
Filling in Prestel Message Frames	138
Communication Function Keys	140
Call Function	
Online/Offline Problems	
Call Using the CommuniTel Intelligent Modem	
Problems with the CommuniTel Modem	141
Call Using a 'Dumb' Modem	142
Problems with a 'Dumb' Modem	
Options	143
Send Function	144
Sending Complete Frames	
Problems	145
Options	
Preparing Message Frames to send to Prestel	146
Sending Message Frames to Prestel	
Problems	147
Options	
Leave Function	148
Hold Function	149
Telesoftware Functions	150
Download Function	
Problems	
Save File Function	152
Problems	
Frame Filing Functions	153
Load Frame Function	
Problems	
Zip-Send Function	154
Edit Frame Function	155
Edit Functions Compared to the Hey Presto Editor	
• Function Key f 0	
• Function Key f 8	
• User Defined Function Key Strings	
• Tab Stops	156
• Graphics Mode	
Concealed Text	
SHIFTed Cursor Keys	
SHIFTed Delete Key	
SHIFTed Copy Key	
• Additional Control Keys	
Using the Edit Function when Offline	157
Using the Edit Function when Online	
Options	
Swap Viewdata Base Function	158
Swapping Disks in the Current Drive	
Changing Between Viewdata Bases in Different Drives	
Switching Between Filling Systems	
Problems	

Save Frame Function	160
Problems	
Options	
Delete Frame Function	161
Problems	
Print frame Function	162
Options	
Catalogue Frames Functions	163

Part 3 Error Messages 164

Data?
No Room
Escape
No Reply
Block Count
Block Seq
Can't Open/Extend
Disconnected
O'flo
?
Modem?
Noise
What?
No Dial Tone
No Answer
DISCONNECTED

Part 4 Configuration Commands 165

Keyboard Interface
Telesoftware and Filing
Communications
Timers
Frame Sending
Error Handling
Remote Input Buffering
Call Characteristics
Miscellaneous Options
Filing Characteristics
Printing Characteristics
Miscellaneous Options
Edit Function Options
Intelligent Modem Options
Miscellaneous Options
Dumb Modem Options

APPENDIX A Requirements for Running the CommuniTel Viewdata System	175
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APPENDIX B Putting Function Keys in Function Keys in the Hey Presto Editor	176
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APPENDIX C CommuniTel Frame Format	177
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INDEX

Preface

Assumptions About the World

The tidal wave of information technology is sweeping in. Massive investment programmes are being implemented. The full social consequences are only dimly foreseen by the instigators of these programmes. But they all seem sure that 'there's bucks at the end of the tunnel'. What's equally clear is that we are facing a change as momentous as the introduction of the printing press into Western culture, and which will rapidly reach into every aspect of our lives.

The key question is the one of control. There does not appear to be any public say in the whole process. It feels as if it's something that is being done to us; there's no way of saying 'Wait a moment, where's this leading, where are the dangers and advantages, how can we reduce the one while making the most of the other, who is benefitting and who is losing out, who is able to use it to say what?'. The process is being so rushed that there's no room left for thought, and so that when the full force of the I.T. tidal wave hits us we are just going to be left to sink or swim as best we can.

Currently, looking at the example of Prestel, we can see a prototype for one direction that can be taken: a large central database, primarily organised to enable a few large information providers make their selection of information available to the many. Its limitation is that there is very little facility for users to put up their own information, other than expensively and restrictively under an existing information provider, or in the limited one-to-one mode of the mailbox.

Another, equally possible direction, is to allow everyone to both 'write' as well as 'read' using this technology. This opens a new possibility: a many-to-many mode over a distributed network.

The CommuniTel system takes the latter direction, allowing the user not only to contact others, both reading and sending information, but also to be phoned up and make information available to callers and receive messages from them.

We feel it is important that everyone should learn to use this technology as creative participant rather than just a passive consumer, and hope that this system allows all its users to gain a feel for this medium, see its dangers and possibilities, and thus be in a better position to take part in its social control and future development.

We also feel it is important that 'everyone' emphatically includes womankind. Although not surprising in view of the macho orientation of much micro software, it is still worrying that women seem to have much less access to the technology. We hope that the communicative and co-operative aspects of CommuniTel make it an approach to the technology that is equally appealing to *both* sexes. Indeed it is encouraging that a class of young women in one of the trial site schools, within a few sessions, were producing a school magazine and using it to express their own concerns and views. The result was also published nationally on Prestel.

To these ends we have done everything within our means to make the system as easy to use and accessible as possible, and we apologise for those parts that still remain awkward.

What we hope to have provided you with is the equivalent of a surfboard with sufficient instruction to enable you to ride the tidal wave as it breaks.

Assumptions About You

This then is the full reference manual to accompany the CommuniTel Viewdata System, Levels 1 and 2, for the BBC microcomputer. It assumes that you are already reasonably familiar with the software and its main features from the 'Tutorial Guide' for the CommuniTel Viewdata System. It is probably best used to amplify the material covered there, and to fill in the technical details.

It also assumes that you are familiar with the use of the BBC microcomputer and its Disk Filing System and/or Network Filing System (as appropriate). If this is NOT the case please make sure you have available for occasional reference:

“BBC Microcomputer System User Guide”

and, if you are a disk user:

“Acorn Disk Filing System User Guide” (or equivalent)

or, if you are a network user:

“Acorn Econet (Level 2 Fileserver) User Guide”

If you are an Econet System user, installing the software on an Econet Level 2 fileserver, make sure you also have:

“Acorn Econet (Level 2 Fileserver) Advanced User Guide”

“Acorn Econet Manager’s Guide”

“Acorn Econet Printserver User Guide”

“Acorn Econet Printserver Manager’s User Guide”

See Appendix A for the minimum requirements for running the CommuniTel Viewdata system.

Acknowledgements and Thanks

CommuniTel Ltd is happy to acknowledge the support and encouragement given by its ‘parent company’, Notting Dale Technology Centre Ltd, and by all those who work there who have helped in innumerable ways. Credit must go to the trainees at the Notting Dale ITeC whose constructive criticisms during the development of the system have improved it in many ways.

Thanks also to SoftMachinery, who supplied the Viewdata Terminal software, the nitty-gritty of the tele-software formatter, and assisted in the development of the random access filing system.

CHAPTER 1 GETTING STARTED

Backing up the Disks Supplied

You are advised, before doing anything else, to make backup copies of the two disks supplied. To do this, follow the procedures given in the disk filing system manual. For day to day work you should then use these copies. Keep the original disks in a safe place and use them ONLY for the purpose of making further backups in the event of your copies getting damaged.

Starting up the System

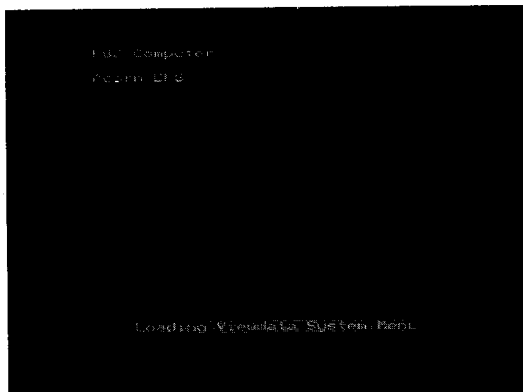
Disk Users

Booting the System

You will have received two disks with this pack, a system disk and a sample database disk. Insert the System Disk into drive 0 of your disk drive unit (or, if you have a single drive unit, into THE drive).

Hold down the **SHIFT** key, and press the **BREAK** key once (the normal disk booting procedure).

After a moment you should see this on the screen: —



and then a few moments later the 'System Menu' should be displayed.

Possible Problems

If at this point you have NOT got the System Menu on your screen, then carry out the following checks:

- Is your disk inserted in the drive unit properly? Check this by reading your disk manual.
- Does your BBC micro default to the Disk Filing System when **BREAK** is pressed? If you have other filing system ROM chips (eg: Econet) installed in your machine, you may need to press **SHIFT + D + BREAK**, and if this applies to your machine then this is how you should 'boot the system' from now on.
- Are you using the correct format System Disk for your disk drive unit? It is issued in either a 40 track version or an 80 track version. See 'Re-Configuring the System'
- A number of other possible error conditions which may arise in exceptional circumstances are described on page 3.

Alternative Start-Up

As an alternative to the booting procedure described in the last section, the system can be started up as follows. With the System Disk inserted correctly as before, and the BASIC prompt > on the screen, type in *!BOOT and then press **RETURN**. This will produce the same message on the screen as before, and then the System Menu.

At this point, the procedure is the same as before. However, as an option, a directory name may be specified in the *!BOOT command, for example by typing *!BOOT followed by **RETURN**. This feature allows you to use an alternative 'system settings' file (see 'Re-Configuring the System') to that used by default during the normal booting procedure.

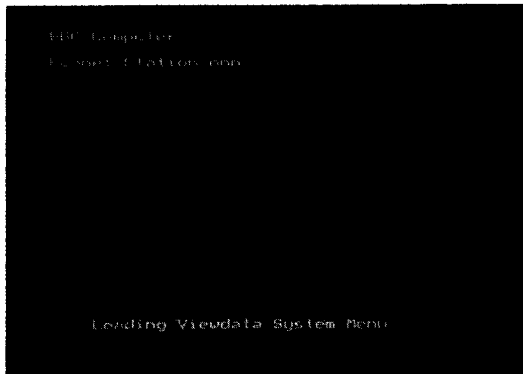
For more information about this facility, see the section entitled 'Personalised System Configuration'. Meanwhile, you could try out the alternative start-up procedure now by typing *!BOOT B then **RETURN**. This will start up the system using the backup copy of the settings file provided on the system disk (B.SETTING).

Econet Users

*VBOOT

This section assumes that the Viewdata System has already been installed on your Econet file-server, and that you have logged on to the Econet with the usual *I AM .. command.

To start up the Viewdata System, simply type in the command *VBOOT and then press **RETURN**. After a moment or two you should see this on the screen: —



..... and then a few moments later the 'System Menu' should be displayed. This is described fully in the next section.

Possible Problems

If at this point you have NOT got the System Menu on the screen, carry out the following checks: —

- Are you logged on to the Econet, with the Network Filing System selected? If not, you should type *NET followed by **RETURN**, log on with the *I AM ... command, and then try again.
- Is your 'currently selected library' set to the correct library directory (normally \$.LIBRARY)? You can find this out by looking at a catalogue of your directory and looking at the LIB setting displayed. Change your library with the *LIB command, if necessary. If in doubt, consult your Econet System Manager.

1. Getting Started

- Did you get an error message like 'Bad Command' or 'Not found'? If so, this almost certainly means that the Viewdata System has not been installed, or not installed correctly, on the Econet. Please consult your Econet System Manager.

NOTE: The Econet System Manager should refer to Chapter 6 entitled 'Installing the System on an Econet' for details of how to resolve or avoid problems of the type described on the last page.

A number of other possible error conditions which may arise in exceptional circumstances are described at the bottom of this page.

Alternative Start-Up

The system can also be started by specifying an optional directory name following the *VBOOT command. For example, if you type in *VBOOT \$.FRED and then press **RETURN**, the system will be started up in the directory \$.FRED.

If the directory is omitted, then the system will start up in the currently selected directory, which will itself be sent to the user's root directory if the *VBOOT command is issued immediately following log-on.

At this point, the procedure is the same as before. The optional directory name feature allows you to use an alternative 'system settings' file (see "Re-Configuring the System") to that used by default during the normal booting procedure.

For more information about this facility, see the section entitled 'Personalised System Configuration'. Econet users who are not familiar with terminology such as 'currently selected directory', 'currently selected library' or 'user's root directory' should consult the Econet documentation referred to in the Preface.

Other Possible Start-Up Problems

This software is designed for use on the BBC micro's Disk Filing System and/or Econet Filing System. If for any reason the System Menu is resident in the computer's memory and is run whilst any OTHER filing system is active, you will be given a message saying that this is illegal, and advising you what to do about it!

There are some other reasons why the System Menu may not start up correctly, all of which will be explicitly reported on the screen. The error messages in question are: —

- "DIM space" or "No room"
- "Bad key"
- "Setting file not found"
- "No menu file"
- "User printer handler file not found"
- "Setting file too big"

Taking "DIM space" and "No room" first, these mean that there is not enough memory to run the System Menu. The most likely cause is that you have a number of paged ROMs claiming workspace, and pushing up BASIC's start page. The system is designed to work with both DFS and NFS installed, ie: with PAGE set at &1B00. Find out the current value of PAGE in hex (by typing PRINT ~PAGE) and if it is greater than &1B00: —

- Make sure that your DFS and/or NFS chip(s) are installed to the RIGHT of any other ROMs claiming workspace:
- Enter PAGE = &1B00
- Restart the system WITHOUT pressing **BREAK** — use the 'alternative startup' as described earlier.

The "Bad key" problem is easily cured by first pressing the **CONTROL** + **BREAK** keys together, followed by the **SHIFT** + **BREAK** to reboot the system in the normal way. This has the effect of first clearing all the function keys before booting the system menu. The error is caused by the function key buffer being already almost full, and overflowing when the system menu attempts to set up a function key.

If any of the other errors occur, it almost certainly means that a file (on the system disk in the case of disk use, or in the system directory in the case of Econet use) has become corrupted, or is missing. (See 'Installing The System On An Econet' in the latter case).

Before it displays the main menu, the program looks for — and must load successfully in order to function — at least two files from the system disk/directory, called **SETTING** and **SYSTEMENU**. The first contains the system's settings, or configuration data. The second contains data which defines the menus to be shown on the screen. A third, **USERPH**, is only expected to be present on the system disk/directory if the user has written her/his own printer handler program (see 'Using Printers').

The third, fourth and fifth of the possible error conditions described above relate to the absence of one of these three disk files, respectively. In the unlikely event of any of these errors occurring, you should first reset your computer and restart. If this does not fix the problem, then check your catalogue for the missing or corrupted file, and copy it back from your backup disk/directory.

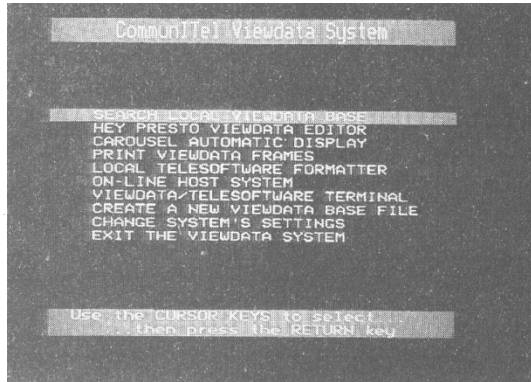
If the last of the error messages occurs, it almost certainly means that there is a file called **SETTING** in the start-up directory that was **NOT** saved by the software in this system. If this is the case, please delete it or move it to another disk: the menu program will not make any sense of it anyway, and its presence will always cause this error if the file is longer than a pre-defined maximum size (currently 256 bytes).

1. Getting Started

The System Menu

Introduction

Having started up the system as described in the last section, the following menu should be displayed on your screen: —



This is known as the System Menu. It must ALWAYS be used as the route into any of the other programs in the suite, by starting up the system as described in the last section and then making a menu selection.

Unpredictable results are likely if a program is run directly, rather than being called up by the System Menu. (This is because the menu program sets up various parameters in the computer's memory, and these parameters must be defined properly for the other programs to function correctly.)

Similarly, all programs in this suite are provided with a 'clean exit' which will pull the menu program back in so that you can choose another program or facility. Unpredictable performance is also likely if these are not used properly to 'get around' the Viewdata System.

The Facilities Available

The Core System

The first four options displayed on the System Menu

```
SEARCH LOCAL VIEWDATA BASE
HEY PRESTO VIEWDATA EDITOR
CAROUSEL AUTOMATIC DISPLAY
PRINT VIEWDATA FRAMES
```

.... are shown in yellow, and form the core of the system. When selected, these options call up programmes which, respectively, allow you to:

- Search/view a database stored locally (on your disk or Econet file-server) in the same manner as if you were connected via the telephone to Prestel or another Viewdata standard Host database system. This program is often referred to simply as "The Search program".
- Create or edit Viewdata pages, frames and indeed complete databases (complete with routing) for local storage and/or for later transmission to Prestel or any other Viewdata standard Host system. This program — commonly referred to simply as 'The Editor' — supports all of the standard Viewdata editing facilities, and also incorporates a Search/View feature.

- Display a preset sequence of frames, each for a preset time, as set up within the Editor. This program — usually known as 'The Carousel' — allows unattended display for public information, shop windows, exhibitions, etc.
- Print copies of Viewdata frames (created locally or downloaded from a distant Host system) on a variety of different printers, with or without routing information, in 'single shot' mode or in a batch. The short title for this program is 'The Frame Printer'.

The Communications Software

The next three options

LOCAL TELESOFTWARE FORMATTER
ON-LINE HOST SYSTEM
VIEWDATA/TELESOFTWARE TERMINAL

..... are shown on the System Menu in white. They are ONLY AVAILABLE IN THE "LEVEL2" VERSION OF THE SYSTEM. They provide communications facilities which enable you to:

- Translate existing programs, text files, or data files into a sequence of local frames in the C.E.T. standard telesoftware format, for use in conjunction with the Host system as an information communication medium.
- Allow a locally created and stored Viewdatabase to be made available, unattended, over the telephone line, to callers dialling up from any standard Viewdata terminal. The program (otherwise known simply as 'The Host') also allows frames to be received from callers, and telesoftware to be transmitted back to them, thus turns your BBC computer into a micro-Prestel system.
- Log on to Prestel or any other standard Viewdata Host system (including another BBC micro running the above Host program), search/view the Viewdatabase, download frames and telesoftware, send pre-prepared 'mail box' frames and edit on line. This program is often known simply as 'The Terminal'.

The availability or otherwise of the three above-mentioned facilities is indicated at the top of the System Menu screen with the message 'Level 1' user and select one of them from the menu, you will see a message informing you that it is not available.

The 'Housekeeping' Facilities

The final three menu options

CREATE A NEW VIEWDATA BASE FILE
CHANGE SYSTEM'S SETTINGS
EXIT THE VIEWDATA SYSTEM

..... are displayed in blue and provide facilities internal to the Viewdata System. In REVERSE order: —

- The 'exit' option is self-evident, and when selected it simply displays a 'goodbye' message then leaves the machine in BASIC with a clear memory, or pulls in a more general menu.
- 'Change System's Settings' allows the system to be set up or reconfigured to suit the user's particular requirements. This facility will be explained more fully in the next section.
- 'Create a New Viewdata Base File' allows Disk Filing System users to set up a frame file which enables up to 95 Viewdata frames to be stored on a 40 track (100k) disk surface, or up to 195 frames on an 80 track (200k) disk surface. This will be explained fully later in this chapter.

Note that these last three features of the system are implemented WITHIN the System Menu program, ie: when selected they don't call in separate programs like all the other menu options do.

1. Getting Started

Using The Menu

If you are using double disk drive units (either single or double sided), the default drive for the database disk is Drive 1. A database disk should therefore be inserted in this drive BEFORE selecting an option from the menu. If you have a single disk drive unit, the default database drive is Drive 0. The software puts up messages on the screen at the appropriate times, prompting you to swap disks.

The UP and DOWN cursor keys are used to move the red selection bar. When it underlies the option you want, press **RETURN** and the relevant program or facility will be called.

In cases where this calls up a program (rather than a facility internal to the System Menu software), this is preceded by a message. In addition, the user has the option of spelling out which directory s/he wishes to work in once the program has loaded. See the section entitled 'Calling Up Programs from the Menu' for details of these features.

The remaining chapters of this manual outline, in turn, how each of the individual programs selectable from the main menu works. But first, the blue 'housekeeping' facilities will be described. It is again convenient to present this description in reverse order.

Leaving the Viewdata System

When the option entitled 'EXIT THE VIEWDATA SYSTEM' is selected, the instructions at the foot of the screen change, and you are prompted to confirm that you really want to leave. If, instead of pressing **RETURN** to confirm this, **ESCAPE** is pressed instead, the menu is re-displayed and you are back where you started.

If exit is confirmed, a 'sign off' message is displayed and you are reminded to back up your data disks. Econet users should simply check with the System Manager that the fileserver disk will be backed up as advised in the Acorn Econet documentation. Disk users should use the normal DFS commands *ENABLE and *BACKUP as appropriate to their particular disk configuration.

After exit, you are normally returned to BASIC and the usual > prompt, and the computer's memory is cleared ready for a NEW program to be entered. The machine is restored to its normal state on power up, in relation to default *FX settings, etc. If leaving the machine, Econet users should, as usual, log off the system at this point (*BYE).

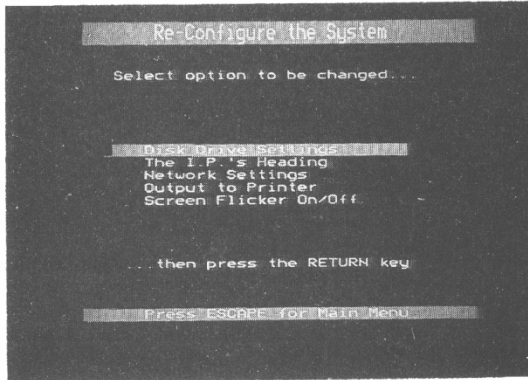
Exit from the System Menu can also be obtained simply by pressing **ESCAPE** instead of selecting a menu option. This has exactly the same effect as selecting the explicit 'EXIT' option, ie: the user can confirm or restart as described above.

An alternative exit procedure occurs automatically if a program called SHWMENU exists in the disk or Econet root directory (\$). This returns the user to the CommuniTel Menu System, causing a generalised menu to be displayed.

Re-Configuring the System

Introduction

When the option "CHANGE THE SYSTEM'S SETTINGS" is selected from the System Menu, the following sub-menu screen appears:—



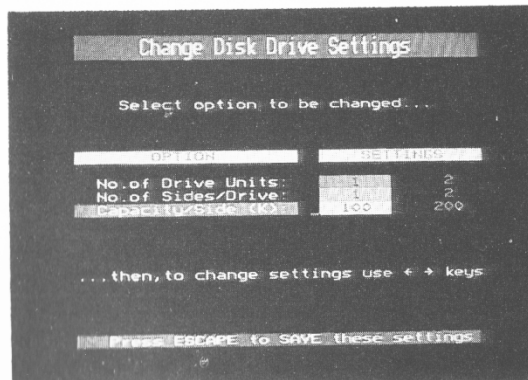
In brief, these respectively enable you to:—

- adapt the software to run on a variety of disk configurations
 - set up your own header at the top left of the screen, for the Search program and — for level 2 users — the HOST system
 - change the default directory names if the software is being installed on an Econet
 - adapt the system to suit various printers, printer interfaces, etc
- AND (!)
- turn off the notorious MODE7 screen flicker, if desired.

At this stage, only the first two and the last will be covered. For information about the remaining options, see the chapters entitled 'Installing the System on an Econet' and 'Using Printers'.

Changing the Disk Drive Settings

When this option is selected from the "Re-Configure the System" menu, the following screen is displayed:—



1. Getting Started

Level 1 users will have been supplied with the software on a 40 track (100k) single sided disk, and the default settings will thus be for 1 drive unit, 1 side per drive, 100k capacity (as shown in the photograph above). Level 2 users will have been supplied with the software on an 80 track (200k) single sided disk, and the default settings will thus be for 1 drive unit, 1 side per drive, 200k capacity.

It is very easy to change these settings. Suppose you have a single drive, double sided, 100k disk drive unit, and you are using Level 1 of the system. The first option is already set for a single drive unit, and the last for 100k disks, but you will want to change the 'No. of sides/drive' setting to 2.

To do this, first press the cursor down key (↓) once, and then press the cursor right key (→) once to switch the setting to 2 And that's it.

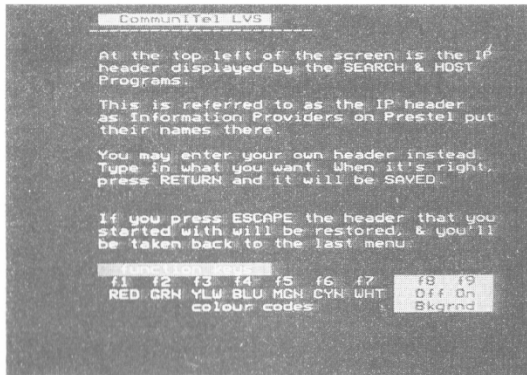
This menu can be used in a similar way to set up your system for any configuration of disk drive. However, if you have a 40 track system disk and an 80 track drive unit, or an 80 track system disk and a 40 track drive unit, you will need to transfer the software to a new disk.

This means that you will need to have, or to have access to, a switchable 40/80 track drive unit, or use a 40 to 80 track copy utility, to copy all the files on your system disk to the new disk (remember the new disk must be formatted correctly first). After transferring the software, you will need to reconfigure for the appropriate drive unit in the manner described above.

Once the disk settings are right, simply press **ESCAPE** and you will be returned to the "Re-Configure the System" menu. If you do not want to change any other system settings, turn to "Saving the System Settings", otherwise, read on

Changing the Information Provider's Heading

This option enables you to enter your own heading which will appear at the top left of the screen when the SEARCH or CAROUSEL programs are running. It is also transmitted to callers screens by the HOST program. When this option is selected from the "Re-Configure the System" menu, the following screen will be displayed: —



The cursor will be at the top of the screen, and you have a one-line editor to enable you to enter any heading you like. You can use the left and right cursor keys, the delete keys and the function keys as shown at the foot of the screen.

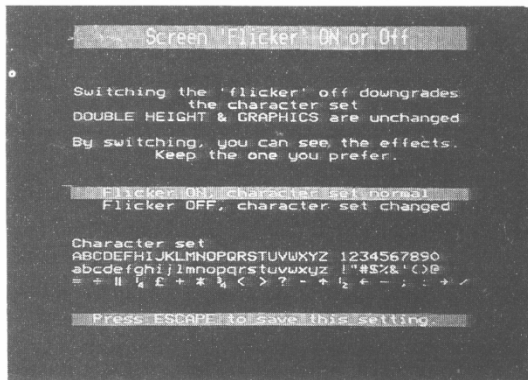
You are referred to the chapter entitled 'The Editor' (or the Tutorial Guide) for details of how to enter the required heading, together with any colour codes, new background codes, etc, you may desire. Note that this facility allows a total of 23 characters in the IP heading, including display codes, and that a 'black background' code is inserted for you after the 23rd character.

Once the heading is what you want, just press **RETURN** and it will be stored (it does not matter where the cursor is when you do this). If it is not right, you can alternatively press **ESCAPE** at any time, and you will be returned to the last menu with the old heading restored.

If you do not want to change any other system settings, turn to "Saving the System Settings", otherwise, read on

Turning the Screen Flicker On or Off

When this option is selected from the "Re-Configure the System" menu, the following screen is displayed: —



By using the up and down cursor keys, you can see the effect that each setting has. The character set is displayed on the screen to help you judge the effect of turning the flicker off. Remember that double height characters (as at the top of the screen) and graphics look the same with either setting.

It seems to be a matter of personal preference as some users are troubled by the flicker more than others who may dislike the slightly downgraded character set that goes with the 'flicker off' setting. Set it to the one you prefer and press **ESCAPE**.

If you do not want to change any other system settings, turn to "Saving the System Settings", otherwise, go back to the appropriate section first.

Saving the System Settings

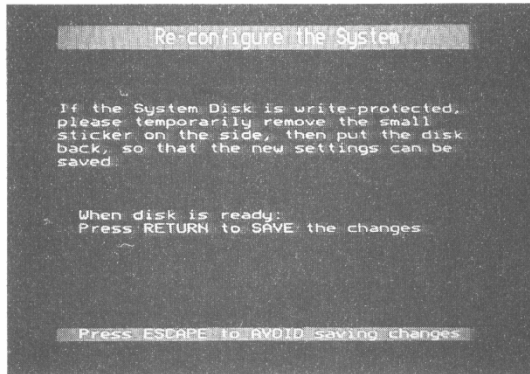
When you have finished inspecting or changing the system's settings, press **ESCAPE** from the "Re-Configure the System" menu, to get back to the Main (System) menu. What happens next depends on whether you have actually changed anything (or merely confirmed all the existing settings), and whether you are using disk or Econet.

The menu software keeps a copy of your original settings (as loaded in to memory from disk or Econet at start-up), and checks against this for any changes before returning you to the main menu from the "Re-Configure" sub-menu.

1. Getting Started

If you are using THE ECONET and have made ANY CHANGES (even to a single character in the IP heading, say) the SETTING file will be (re-)saved automatically for you in the currently selected directory. You will see a message to this effect at the foot of the screen, and then you will be returned to the main menu. Econet users should at this point turn to "Personalised System Configuration", as the next few paragraphs do not apply.

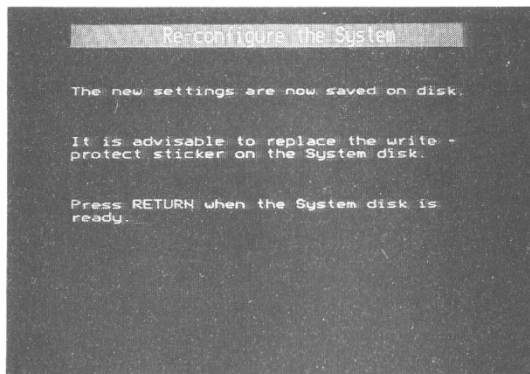
If you are using THE DISK SYSTEM and have made ANY CHANGES, the screen changes to the following: —



(NOTE: If you do NOT get this screen, it is simply because the disk already has your settings on file, so there is no point in re-saving them.)

This gives you the chance to take out the system disk and remove the write-protect sticker on the side before replacing the disk in drive 0. Having done this, press **RETURN** and the revised settings will be stored permanently on disk, in the currently selected directory.

After saving the settings, the screen changes to: —



This is to give you the chance of putting the sticker back and re-protecting your system disk. When you have put it back in drive 0, press **RETURN** and you will be taken back to the main menu.

If you pressed **ESCAPE** to AVOID saving the settings, the message

```
ESCAPE PRESSED
SETTINGS NOT SAVED
```

..... comes up on the screen, and then after a few moments (or if you press any key, including **ESCAPE** again) you go straight back to the main menu. If you do this, your current settings (even though not filed away) will remain in effect for the rest of your session on the machine, until or unless the system is re-configured again.

This facility for having TEMPORARY settings is useful if different people using the system require different settings, as the minority user(s) can have it their way without having to have the disk setting constantly changed (but see the next section).

Personalised System Configuration

If you have re-configured the system and saved the new settings on disk or Econet, they are subsequently picked up by the software whenever the system menu program is loaded, and you won't have to worry about it any further, unless of course you need to change any of the settings again.

However, a more flexible facility is actually built in to the software, which — by controlling the directory to be used for setting file LOADs and SAVEs — permits different users to have their own settings files, and hence personalised system settings.

As described earlier in this chapter (under the heading “Alternative Start-Up”), both disk and Econet users have the option of starting up the Viewdata system in a specified directory. This facility can be used to tell the system which directory to look for the system settings file in.

If a file called SETTING is found in the directory selected before start-up, the system menu program will load it in and read the system configuration settings contained in it. If, however, NO settings file is found in the currently selected directory, the default settings file will be loaded instead. The default file is the copy kept in the directory called :0.\$ on the disk system, and \$ on the Econet system.

No matter which directory contained the settings file successfully loaded on start-up, if/when the settings are changed, they will be put in the CURRENT directory when re-saved. This means that — subject of course to the amount of space left on the disk — if the current directory is not the same as the default directory, a SEPARATE settings file will be created in the current directory. An example or two should clarify this.

If a disk user called Fred starts up the system by typing *!BOOT F, the menu program will try to load the settings file F.SETTING, but if it does not exist then the default file, \$.SETTING, will be loaded instead. If Fred re-configures the system and comes to save the new settings, they will be saved in a new file called F.SETTING. Subsequently, the start-up command *!BOOT F will pick up Fred's 'own' settings, again in F.SETTING.

The advantage of this is that Fred may — for example — like the screen flicker off, and want his own IP heading containing his name, whereas other users — say — prefer the flicker on and a more standard IP heading. Using the facility just described, both Fred and the rest can have their own way!

Now take an Econet user named Jane, who has just logged on and has started up the system in her own directory using the ^VBOOT command with no argument. If she does not yet have her own SETTING file, the copy in the root directory (ie: \$.SETTING) will be loaded by the menu program. But, like Fred, she will automatically create her own setting file in her own directory after reconfiguring the system, which will subsequently be picked up on start-up.

1. Getting Started

The advantage of this is that if Jane prefers printer type X on the Econet to printer Y which is the one used normally, and hates the IP heading that the System Manager has put in the default settings file, she too can have her own way!

Clearly, Jane is at an advantage in terms of the security of the file she has created, given that her directory can be password protected on the Econet, unlike Fred on his DFS machine. Econet users should also note that the normal rules apply in regard to rights of access to files other than those in a non-privileged user's own domain.

It is hoped that, following the above description, the more experienced user will begin to appreciate that this is a powerful facility that can be exploited usefully in a variety of different ways (especially on the Econet), thus helping the user to gain the most from this system and the hardware at her/his disposal.

Creating a Viewdata Base File

The Random Access Filing System

As many users of the Disk Filing System will know, a maximum of only 31 discrete files can be stored on one surface of a disk. Where the DFS is being used for storing Viewdata frames (each of which is exactly 1k bytes long), as would be the case with this suite of software, this limitation means that much of the disk capacity is wasted.

For example, if you have a BBC micro with a single drive, single sided, 40 track disk unit, 69k bytes of the total 100k available is wasted if the disk is used solely for Viewdata frames taking up 1k each. Even worse, double drive, double sided 80 track users disk may waste up to 676k of the total of 800k bytes available — an 84% waste of disk space!

The CommuniTel Viewdata System is designed to get over these limitations by incorporating a 'random access filing system' into the various software components of the suite. Briefly, this uses the DFS to read and write a single large disk file which can be as big as the total capacity of one surface of the disk. This contains internal data structures allowing the system to load and save multiple Viewdata frames within the one file.

The result is that up to 95 Viewdata frames can be stored on a 40 track disk surface, and up to 195 frames on an 80 track surface. The remaining 5k bytes of space per surface is used to store the internal catalogue and other 'housekeeping' data.

We will refer to this single, large, DFS file as simply a 'Viewdata Base File', but it is important to note that — with a few exceptions that will become apparent later — the user of the Viewdata System need not even know of its existence. Using it requires no specialised knowledge as the random access filing system is designed to be transparent at user level.

Single Frame per File Mode

Use of the random access filing system is not compulsory. Each program in this software suite checks the currently selected directory, on initialisation, and configures itself for 'random access' if it finds a correctly set-up Viewdata Base file there. Otherwise it configures itself for the single frame/file mode, storing each frame as a separate DFS file, and the normal 31 files limit applies.

In this mode, the DFS filename for a frame is composed of the frame's page-name + frame-ID, with the usual DFS maximum of seven characters.

This mode is useful for transferring frames to and from other Viewdata/Teletext systems, or for incorporating frames into other programs. (See appendix: Programming with Single Frames).

WARNING

Use of a random access file also means that once a program has been selected and starts running, random access Viewdata base disks can't be swapped in or out. This is because programs always begin by 'opening' a Viewdata base file if they find one, and they only 'close' it when they exit. Thus the DFS will believe that the file starts at a particular place on the disk, and the software will have read in essential information from the file. So, if a disk is pulled out and replaced by another, the information held in the machine will no longer correspond to the disk. At best it will not be able to find frames that are requested. At worst, if it writes to the file, it could corrupt the disk.

Only the EDITOR program has the facility for exchanging disks while the program is running, and its procedure must be strictly adhered to. See the section in the EDITOR chapter on swapping disks.

1. Getting Started

Econet Users:

The filing system just described is not available for use on the Econet as each directory on the network can contain up to 256 files, and therefore wastage of space is not a problem. As with the single frame/file mode under the DFS, frames are stored as single 1K files, but under the NFS, the filename can be up to 10 characters: 9 for the page-name and 1 for the frame-ID. If you have started up the system on the Econet and then select "SET UP A NEW VIEWDATA BASE FILE" you will get a (polite!) message informing you that the facility is not available.

Preparing a Database Disk

Before the random access filing system just described can be used, a Viewdata Base File must be set up.

To do this, select the option entitled "SET UP A NEW VIEWDATA BASE FILE" from the System Menu. The next screen you will see depends on the disk drive configuration you are using. The following four sections correspond to the four different possibilities, ie: —

- Single drive, single sided
- Single drive, double sided
- Double drive, single sided
- Double drive, double sided

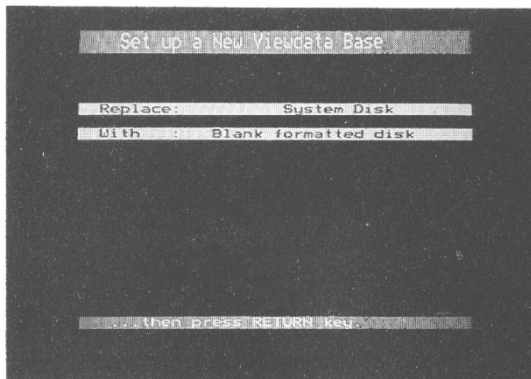
Read the section that is appropriate to your disk drive unit, skip the other sections, then turn to the section entitled "Specifying the Type of Database".

NOTE however that if, in the section you read, the screen photograph does not correspond to what you actually see on your screen, this means that your system has not (yet) been configured to suit your disk drive unit.

If this occurs, please turn back to the section entitled "Changing the Disk Drive Settings" in order to reconfigure the system, and then return to this point. IT IS IMPORTANT TO ENSURE THAT THESE SETTINGS CORRESPOND TO YOUR DRIVE UNIT BEFORE CREATING A VIEWDATA BASE FILE.

Single Drive, Single Sided

You should see the following on your screen: —

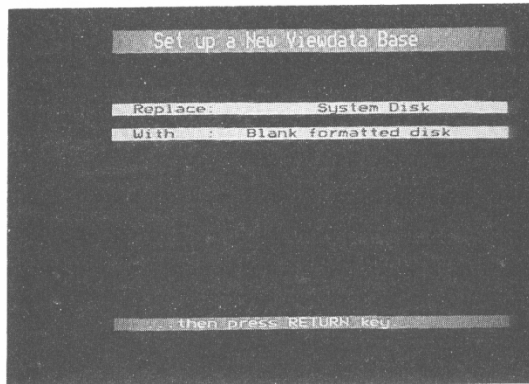


Follow the instructions, taking out the System Disk, putting in a blank formatted disk, and pressing **RETURN**.

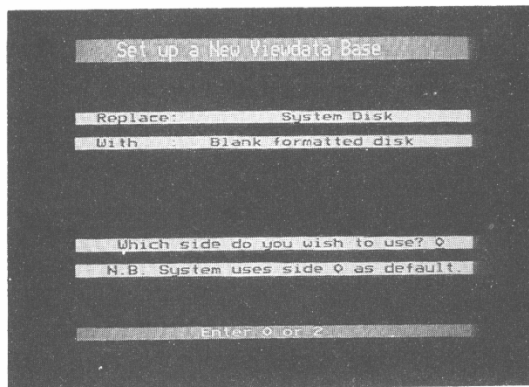
Now skip to the section entitled "Specifying the Type of Database". See the note under "Preparing a Database Disk" if you have this type of drive unit but do NOT have the above screen in front of you.

Single Drive, Double Sided

You should see the following on your screen: —



Follow the instructions, then the screen will change to this: —



The Viewdata system allows double sided disk users to work on either side of the disk whilst running any of the programs in the suite, although side 0 is used by default for single drive users. The section entitled "Calling Up Programs from the System Menu" describes how to override this default setting.

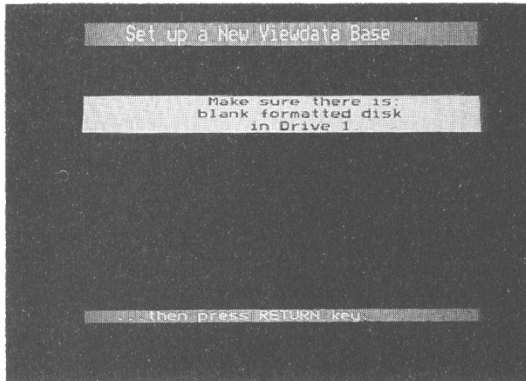
Meanwhile, if you know that you want to make use of side 2 of the disk, press 2 before you press **RETURN**, otherwise press **RETURN** on its own.

When you have made your selection as described above, skip to the section entitled "Specifying the Type of Database". See the note under "Preparing a Database Disk" if you have this type of drive unit but do NOT have the above screen(s) in front of you.

1. Getting Started

Double Drive, Single Sided

You should see the following on your screen: —

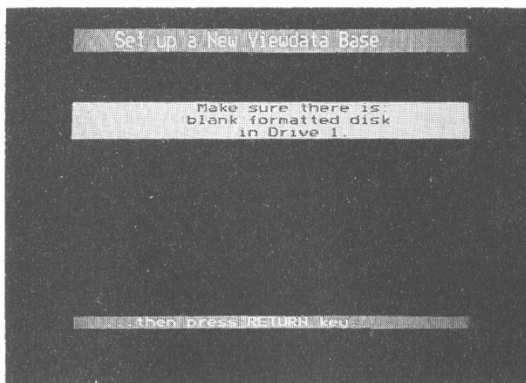


Follow the instruction, taking out the System Disk, putting in a blank formatted disk, and pressing **RETURN**.

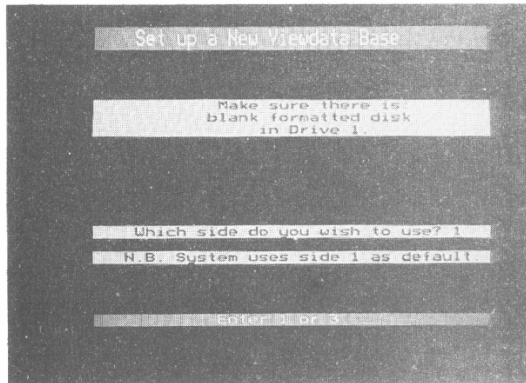
Now skip to the section entitled "Specifying the Type of Database". See the note under "Preparing a Database Disk" if you have this type of drive unit but do NOT have the above screen in front of you.

Double Drive, Double Sided

You should see the following on your screen: —



Follow the instructions, then the screen will change to this: —



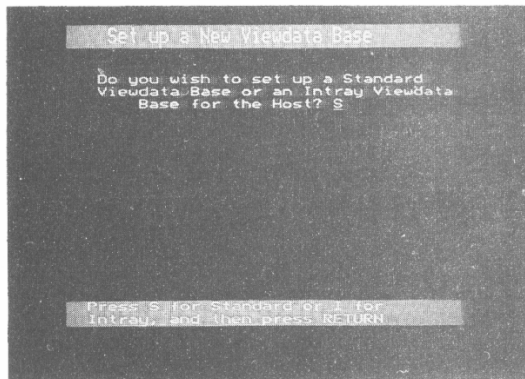
The Viewdata System allows double sided disk users to work on either side of the disk whilst running any of the programs in the suite, although side 1 is used by default for double drive users. The section entitled "Calling Up Programs from the System Menu" describes how to override this default setting.

Meanwhile, if you know that you want to make use of side 3 of the disk, press 3 before you press **RETURN**, otherwise press **RETURN** on its own.

When you have made your selection as described above, skip to the section entitled "Specifying the Type of Database". See the note under "Preparing a Database Disk" if you have this type of drive unit but do NOT have the above screen(s) in front of you.

Specifying the Type of Database

Users of the Level 1 version of this system should IGNORE THIS SECTION — it only applies to Level 2 users. The next screen shows the following: —



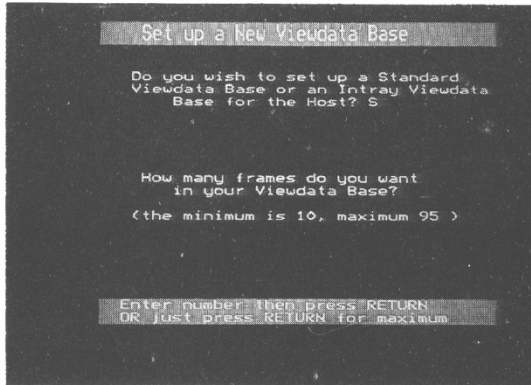
As will be seen in Chapter 9 of this manual, users of the HOST system need to set up a directory to store frames received from incoming callers down the telephone line. This is referred to as the 'Intray', and is set up on the disk as a random access Viewdata Base file.

If you are setting up a file to contain the Host's intray, then press 'I' in response to the question you see on the screen, and then press **RETURN**. Otherwise, just press **RETURN** in order to confirm the default option, i.e. that the file is to hold a 'standard' Viewdata Base.

Alternatively, you can type either 'S' or 'I' before you press **RETURN**. You can also press **ESCAPE** to ABORT the "Set Up a New Viewdata Base" facility and return to the main menu.

Specifying the Size of Database

The next question you are asked is shown on the screen below: —



(except that Level 1 users will only see the BOTTOM part of the screen).

Follow the instructions by entering a number between the minimum and the maximum offered (inclusive) and then press **RETURN**. Alternatively, pressing **RETURN** on its own confirms that you want the maximum.

Any Level 2 user preparing a Viewdata base to run on the Host system should read the section on maximum sizes first, and Chapter 9, the Host System.

Pressing **ESCAPE** allows you to abort the whole "Set Up a New Viewdata Base" operation and takes you back to the main menu.

Maximum Sizes of Database

The maximum size of the file to be created depends on the disk configuration you are using, and on whether you are a Level 2 user setting up an Intray or not.

This section explains the rationale behind the maximum figures.

Standard Viewdata Base

In the case of Standard Viewdata Base files, the maximum is simply the total capacity of a disk surface, less 5K for the space required by the random access filing system's catalogue and housekeeping information.

Host Intray File

In the case of a Viewdata Base file for the Host's Intray, the maximum is less. The main reason for this is that the HOST logs information about the callers, and space must be reserved for the files that hold this information. Normally, this is 20K, allowing up to 250 callers and 75/175 frames received to be logged. The frames received corresponds to the maximum size of Intray file, once 5K has been allowed for its catalogue.

Host Intray on Single Sided/Single Drive Unit

In the special case of the HOST running on a Single Sided/Single Drive disk unit, the Viewdata Base and the Intray have to share the same surface, together with the logging files. The logging files occupy 20K, leaving either 180K or 80K, depending on your disk capacity, to share between the Viewdata base and

the Intray files. The catalogues and associated information for EACH of these occupy 5K, and together take up a further 10K, leaving room for 170 or 70 1K frames. You must then decide how this frame space is to be shared between the two functions. If you are primarily interested in providing information, you will want to make the Viewdata base larger at the expense of the Intray, while if the main function is electronic mail, you will bias it the other way round.

Further Tip for Single Sided/Single Drive Users

If you are setting up a Host system and you decide to make one of the section hold less than 30 frames, you should only create a random access file for the larger of the two. Catering for the other function using single frames per file mode allows up to 38 frames to be stored and at the same time, releases 5K that would have been catalogue space, to be added to the major function. Thus in an extreme case, a Viewdata base can be set up with 75 frames on a 100K disk, but this would only leave room for the logging files and NO ROOM for Intray frames. (Callers trying to send you frames would simply get the message 'Intray stuffed full'.) But equally note that at the other extreme, the maximum size of Intray is 70 frames as space has to be left for the minimal essential four frames required for a Host Viewdata base. (See Chapter 8 for more on this.)

The following table summarises the maximum sizes for all the combinations of type of database and disk configuration: —

Type of Database	Type of Disk Unit	Disk Capacity	Max. Frames	Size of File (hex)
Standard	Any	100k	95	&18D00
Standard	Any	200k	195	&31D00
Intray	SSSD	100k	70	&12900
Intray	SSSD	200k	170	&2B900
Intray	nSSSD	100k	75	&13D00
Intray	nSSSD	200k	175	&2CD00

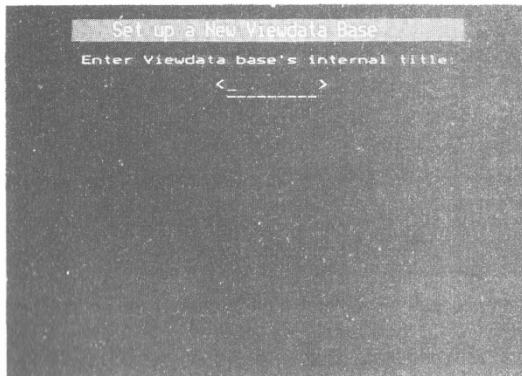
NOTES

In this context, the abbreviation 'SSSD' means 'single sided, single drive'.

In this context, the abbreviation 'nSSSD' means 'NON-single sided, single drive', ie: any drive unit other than 'SSSD'.

Entering the Internal Title

Next, you will be asked to enter an 'internal title' for the Viewdata Base file: —



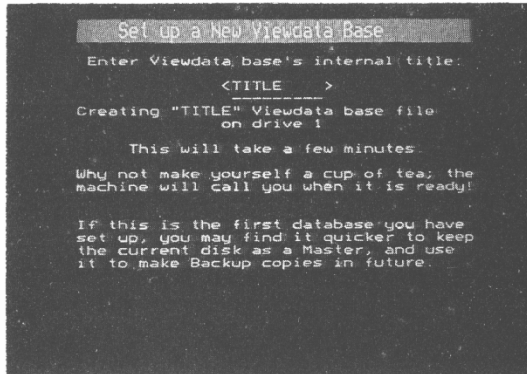
1. Getting Started

Decide on a title of not more than 9 characters, type it in and press **RETURN**. This is NOT the name the file will have on the disk — that will ALWAYS be 'VWDB', or 'I.VWDB' in the case of a Host Intray file. The 'internal title' appears when displaying the file catalogue in other programs in this suite.

Note that a BLANK title is allowed. Also, pressing **ESCAPE** whilst viewing the screen aborts the whole "Set Up a Viewdata Base" operation and returns you to the main menu.

Write the title you have entered on a disk label (using a soft tipped pen if the label is already stuck on the disk), as this will be the only way you have of recognising the disk whilst NOT using the software in this system to get a catalogue displayed.

The screen now changes to this: —



This takes SEVERAL MINUTES — the software is mainly writing zeroes over the whole disk surface. At the end, if you have specified the maximum number of frames allowed, the whole disk will be occupied by this one file and there will be no room for any more files.

If all goes well, when finished, the machine plays a few notes, a message saying 'Viewdata Base file now set up' appears briefly, and you are returned to the main menu. The disk is ready for you to create your own Viewdata masterpieces.

If a file called 'VWDB' already exists on the disk, however, you are told about this before the file is overwritten, and you are given the chance to abort the operation. But if you are asked 'Overwrite?' and answer 'Y' for YES, your old file will be destroyed for good and a blank new file created on top of it.

If during the 'cup of tea period' the software reports the error 'Can't extend', this almost certainly means that you have not followed the instructions on the screen, or earlier in this manual, properly! Essentially, what has happened to cause this error is that there is not enough room on the disk to create the size of file required.

The disk may have a lower capacity than you told the system it has (ie: 100k instead of 200k), or there may be another file already taking up some of the space. If this error occurs, unfortunately there is no alternative but to delete the file partially created, check the settings and the disk catalogue, and start again. This is one of the reasons that you are advised to keep a master copy

Master/Template Database Disk

Once a new Viewdata base file has been created, it can be useful to keep one as a 'template' or master disk before anything else is put on it. When a new Viewdata base file is needed, this can then be created by making a backup of the master using the normal DFS procedures. The main advantage of this is speed, being far quicker than creating a new file under the DFS. A slight disadvantage is that the internal title also gets copied, so it may be preferable to leave the master's internal name blank when it is created. It is then however more important to label the Viewdata base disks.

Calling up Programs from the System Menu System Disk & Data Disk

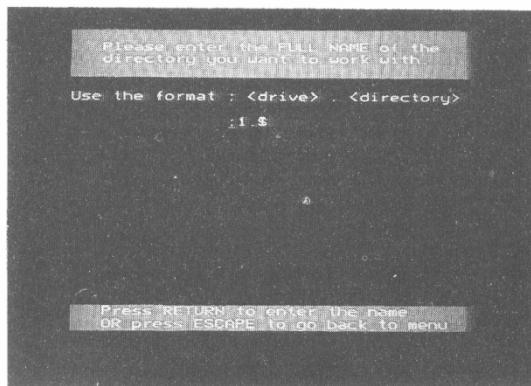
The procedure for calling up other programs in the suite from the main menu has already been outlined. Immediately after making a selection, you will see a message on the screen telling you what is happening.

If you are disk user with a single drive unit, you will be prompted to replace the system disk with your database disk when the drive has stopped turning. DO NOT DO THIS BEFORE THE DRIVE STOPS, as the relevant piece of software is still loading from the system disk.

Overriding the Default Directory

For the more experienced user, an alternative method of calling up programs in the suite is available from within the System Menu. Such a user may need to work in a directory (on the disk or Econet) different from the one the system sets up by default.

The default working directory may be overwritten by holding down the **SHIFT** key whilst pressing **RETURN** to select the required program. The result is a screen like this: —



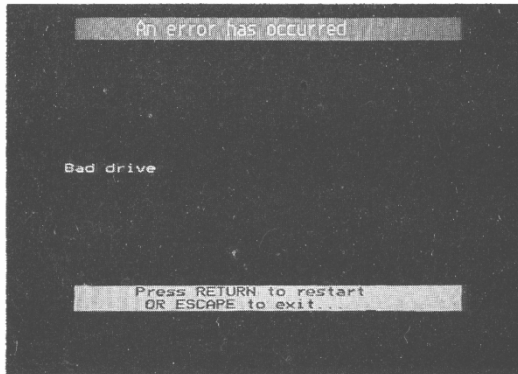
The default working directory is shown in yellow (or MAY be blank if you are using the Econet, depending on how you have configured the system). If you wish to work with the default directory, just press **RETURN** and proceed as before. If you change your mind completely, press **ESCAPE** instead and you will be taken straight back to the main menu.

Otherwise, the default directory may be overwritten (the cursor keys, the delete key, and the ordinary keys may all be used) before pressing **RETURN**. Any spaces entered (or created by using the delete key) will be stripped.

1. Getting Started

Take care to enter the directory name correctly, in the format shown on the screen, or you may get a 'bad drive' or 'bad directory' error and have to restart. On the Econet, incorrectly specified directory names can give 'Bad file name' or 'Not found' errors.

Any errors of this nature are not fatal. They will be reported on a new screen like this: —



..... and all you need to do is to press **RETURN**, and you will be returned to the menu screen ready to have another try.

Disk users can enter a directory name of up to 4 characters, econet users up to 16 characters. Note that on the econet the name need not include the disk name, and may include sub-directories, so that for example the following are all legal names: —

```
:FS-MASTER.JANE
$.FRED.Frames
VWDB.PICS.art
```

..... providing of course that such directories exist on the fileserver. See the econet documentation for the rules about forming directory pathnames.

Disk users should consult their DFS manual if in doubt about legal directory names.

Once the directory has been chosen, and the relevant program is called in, you will remain in that directory until that program exits back to the system menu. The exception to this is the Editor, WITHIN WHICH you can change directory and/or filing system.

CHAPTER 2 SEARCHING A DATA BASE

This facility enables you to search through a database created using the Editor, in exactly the same way as you would search through pages on Prestel.

When running on a Level 2 Eiconet system, several users may search the same or different databases at the same time.

Selecting the Search Program

If you are using double disk drives, you must make sure that a database disk is ready in Drive 1 before selecting the option off the main System Menu. If you are using a single disk drive unit, you will be prompted to insert the disk at the appropriate time.

When the main System Menu is entered, the red selection bar underlies the SEARCH A LOCAL DATABASE option, in which case it is only necessary to press the **RETURN** key to start the search.

Single drive users will be prompted to take out the system disk and replace it with the disk holding the database. It is necessary to wait until the disk drive has stopped before doing this as it is loading in the Search program at this point. After exchanging the disks, press **RETURN** again and the program proceeds.

The Search program begins by looking for a random access database file on the database disk. If it finds one, the message:

Please wait a moment

appears in green at the foot of the screen. It then loads in the entire 4K catalogue for the random access file which speeds up all the subsequent frame searches. At this point, (or directly if it didn't find a random access database file and has set itself to single frame per file mode, or if you are using a network which also uses single frame per file mode), it searches for the 'root page', **0a**, and the message:

Searching for 0a

appears at the foot of the screen.

If it finds it, it loads and displays it, otherwise, the screen is left blank and a further message appears:

PAGE/FRAME DOES NOT EXIST

If the database starts at any frame OTHER than **0a**, it is then necessary to type in:

*** < page name > #**

After the frame has been loaded, you may proceed to search through it in the normal way.

Searching Through a Database

There are 4 ways of searching a database.

Menu Choice

Pressing any of the number keys 1-9 or 0, will take you to another page if the database editor has routed the choice number. Usually the editor should say in the text of the frame where a choice will take you.

Continuation Frames

If there is more than one frame to a page, subsequent frames can be called by pressing # (**SHIFT** + **3**) or, more simply, pressing **RETURN** has the same effect. A page can consist of up to 26 frames, indicated by the lower case suffix, a-z. Pages always begin with the 'a' frame.

Stepping Back Through Previous Frames

The sequence * # enables you to step back through previous frames that you have been looking at, in reverse order. Unlike Prestel, the CommuniTel system enables you to step back through the last 10 frames rather than only three.

Each frame looked at gets added to a list of 10 frames. Each time you step back, after being displayed, the frame gets removed from the list. If you step back through 3 frames, and then start searching again, the new frames will be added to the earlier 7 that were left in the list.

Jumping Directly to a Page

If you know the name of a page and you wish to go straight to it rather than work through the menus, it is possible to jump directly to the page from anywhere in the database by entering:

* page-name #

This will always be to the 'a' frame, so the frame-ID is omitted. A quick way of getting back to the root page is to enter:

* 0 #

which takes you directly to 0a.

When entering a page name in this off-line system, the **DELETE** key and the back and forward cursor keys can be used to correct mistakes. (Note: this is NOT possible when on-line to Prestel.) When the visible page name is correct, press # or **RETURN** keys.

As on Prestel, the * option can be cancelled at any time by entering two stars in sequence:

* *

Interrupting the Display

As on Prestel, it is possible, at any point when the page is being displayed to press a choice number. The display is interrupted, and the choice immediately acted on. This enables 'double digit' menus to be used, and, if both keys are pressed, the intermediate frame is not displayed except for the header line.

Refreshing the Screen

If two keys are pressed quickly by mistake, this can lead to a blank screen and, if the second key is not routed, an error message at the foot of the screen saying:

PAGE/FRAME DOES NOT EXIST

It is possible to refresh this screen by entering:

* 0 0 #

This is the same sequence that is used on Prestel to refresh a screen (without charge) if line noise has spoilt the transmission.

The sequence

* 0 9 #

can also be used for the same purpose, but note that on Prestel, this sequence is used to call for an update of information, and if there is a charge on the frame, you will be charged again for it. It is therefore only used to get at rapidly changing information, usually of value to the caller.

Special Keys

To facilitate database searching, the cursor keys and the copy key have been assigned the following functions:

Cursor forward	(→)	#	Next Frame
Cursor backward	(←)	* #	Last Frame
Cursor up	(↑)	* 0 #	Root Page
Cursor down	(↓)	*	Initiate Page Jump
COPY key		* 0 0 #	Refresh Frame

These functions are also all implemented on the On-line Terminal.

Reveal Key

One final facility is the Reveal function, which displays information concealed on the screen.

This is accomplished by pressing the **R** key.

If more than one lot of information has been concealed, it is revealed by pressing the **R** key several times.

Search Errors

There are a number of cases when a frame cannot be retrieved:

If the choice number has not been routed to a page.

If the choice number has been incorrectly routed to a page not found in the database.

If you try to jump directly to a page not found in the database.

If you try to step back through more than 10 frames.

Or, if you have looked at less than 10 frames and try to step back through more frames than you have looked at.

Then the message:

PAGE/FRAME DOES NOT EXIST

appears at the foot of the screen.

Leaving the Search Program

There are two ways of leaving the Search program. As on Prestel, you can enter:

* 9 0 #

or, you can simply press the **ESCAPE** key.

If you have a double disk drive, or are using on a network, the message:

Reloading System Menu

appears at the foot of the screen, and after a few moments, this will be re-displayed on the screen.

If you have a single disk drive, you will be prompted to take out the database disk and replace it with the system disk. You must then press the **RETURN** key to let the system know when this has been done and it then proceeds to load the System Menu.

CHAPTER 3 USING THE HEY PRESTO EDITOR FOR THE BBC MICRO

Introduction

In many ways The Editor is the heart of the Viewdata System. It enables you to create Viewdata type screens, using text, graphics colours and all the other Viewdata features. These screens are called Frames, and you can link them together to form a database. It enables you to store them on network or disk filing systems, call them back, change them, resave them and change the links to other pages. It also incorporates the user's search mode so you can search through and check the links that you have created and correct or modify them.

As far as possible, the system is self-documenting in the form of on-screen reminders and prompts.

Starting Up

In order to get into the Editor system, boot the main system menu.

If you are operating under the Econet system, enter:

***VMENU** and press **RETURN** key.

See Chapter 1 for more on starting under Econet.

If you are using a disk drive system, this must be done from the system disk in Drive 0. Hold down **SHIFT** and press **BREAK**.

If you are using *twin* disk drives, you must make sure that there is a Viewdata base disk in Drive 1. This is the standard default drive for this configuration.

If you are using a single drive unit, follow the screen instructions with regard to inserting the database disk as they come up on the screen.

From the main system menu, use the DOWN cursor key to bring the red selection bar to the option:

HEY PRESTO VIEWDATA EDITOR

then press the **RETURN** key.

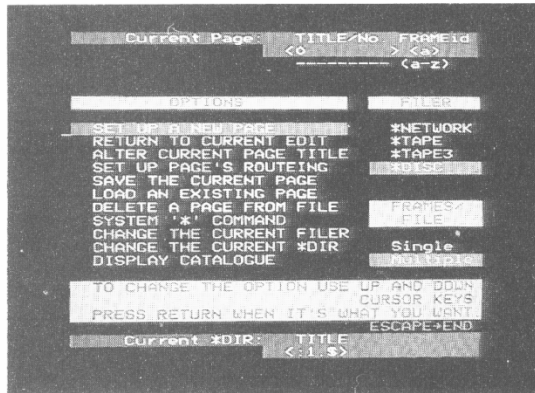
The CommuniTel logo appears on the screen.

Wait while the HEY PRESTO Editor is loaded. If you have a single drive unit, you will be prompted to replace the system disk with the database disk when the program has finished loading, and press **RETURN** when you are ready.

The Editor's Main Menu then appears on the screen.

The Editor Menu

The Menu will then appear on the screen:



The Red Menu Bar

When you first start the program, the cursor is to the left of a RED BAR which underlies the first option:

SET UP A NEW PAGE

Making a Selection

As with the main system menu, the red bar can be moved up and down with the cursor up and down keys.

It 'wraps around' from top to bottom and bottom to top. When it underlies the option you want, press the **RETURN** key, and that option is then carried out.

Frames Per File

When the program starts, if it is operating under the disk filing system, it checks to see whether the database disk holds a random access database file. If it does, it indicates this in the lower right quarter of the screen by placing a red bar under 'multiple'. If not, it will operate under the single frame per file mode, placing the red bar under 'single'. In this case, the red bar is acting as an indicator rather than as a menu option.

Possible Problem

On starting, you may find an error message above the options:

INVALID DATABASE FILE

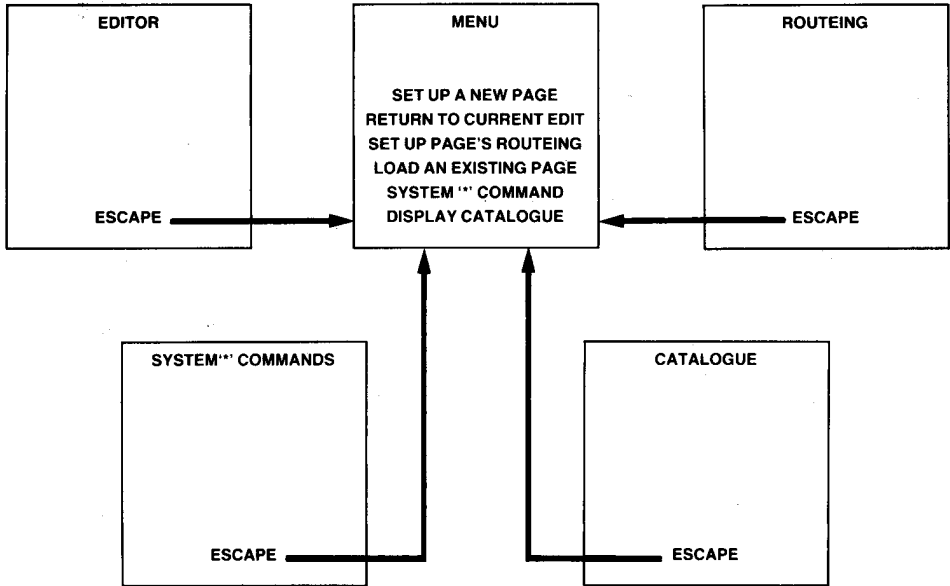
This means that the system has found a file entitled VWDB, but that it is not a valid database file. So either there is a file which happens to have the title VWDB but is not a database, or, which is worse, it is a database file, but it has become corrupted. Hopefully you will never see this message!

(See the section on Creating a New Database File in the first chapter for more on both the last two points.)

3. The Hey Presto Editor

Leaving and Returning to the Menu — The Layout of the Sections

In general, there are four other displays that you can get to from the menu. Each has a section later itself.



From all four, you return to the menu by pressing the **ESCAPE** key.

Escaping from the Program

To escape from the program altogether, from the menu, press **ESCAPE** followed by the **RETURN** key.

There is a reason for adding the **RETURN** key. If you hold any key down on the BBC micro, it 'auto repeats'. When leaving one of the other four areas, it would be possible to accidentally leave the program as well by holding the **ESCAPE** key down for too long. To avoid this, when **ESCAPE** is pressed from the menu, a prompt appears:

PRESS RETURN KEY TO CONFIRM ESCAPE TO END

Pressing any other key, including **ESCAPE**, returns you to the red option bar. This also happens after several seconds if NO keys are pressed.

If you do press **RETURN**, under DFS you are asked to make sure that the System Disk is in Drive 0 and press **RETURN** again. After that, or directly under the NFS, you are returned to the main System Menu.

Pressing Break by Mistake

If you come out of the program by accidentally hitting **BREAK**, the program will restart itself.

You will then be back at the main menu. The program will remember, and restore, the filing system you were in, what directory you were in, what your current page was called and last but not least, everything you were currently working on.

The Menu Options

Next to be considered are the main options presented by the editor's menu.

OPTIONS

SET UP A NEW PAGE
 RETURN TO CURRENT EDIT
 ALTER CURRENT PAGE TITLE
 SET UP PAGE'S ROUTEING

SAVE THE CURRENT PAGE
 LOAD AN EXISTING PAGE
 DELETE A PAGE FROM FILE

SYSTEM '*' COMMAND
 CHANGE THE CURRENT FILER
 CHANGE THE CURRENT *DIR
 DISPLAY CATALOGUE

You can think of the options as divided into three sections, marked by their colours:

1. (Yellow) Handling the current page being edited.
2. (White) Handling a single frame on the filing system.
3. (Blue) Handling the filing system, or FILER for short.

There are three sections dealing with all of the options in turn.

But first, as the following options:

SET UP A NEW PAGE
 ALTER CURRENT PAGE TITLE
 LOAD A NEW PAGE
 DELETE A PAGE FROM FILE

all prompt you to enter a Title and frame-ID, there is a general section on this first.

3. The Hey Presto Editor

Entering a Title and Frame-ID

When selecting any of the above options, you are first prompted to enter a title:

Current Page:	TITLE/NO.	FRAMEid
ENTER	< 0 >	<a>
	-----	(a-z)

The cursor goes up to the top section of the screen, moving to the first letter of the existing title, which by default is set to 0.

Entering the title

A strict Viewdata page title must consist of numbers only. However *this* system permits letters in the title as well, on the assumption that local users will have full keyboards. If you are preparing pages for public access via PRESTEL or via this system's telephone Host program (if you think you may be phoned up by callers with the old style Viewdata numeric keypads), you should stick strictly to numbers. The system leaves the choice, and the responsibility, to you.

To enter a title, you simply type in the title you want to give your page, overtyping what is there and using the **SPACE** bar to delete any further unwanted characters from the previous title. You can use the **DELETE** key to delete previous characters. The backward and forward cursor keys work within the permitted title space.

After the cursor reaches the last character space, any further characters entered overtype the last character. To get rid of the last character, use the **SPACE** bar.

When the title in the title space looks right, press **RETURN**. Whatever is displayed will be accepted as the title.

Pressing **RETURN** without typing anything accepts whatever is displayed as the page title.

Any leading spaces will be removed. Also, as titles are not permitted to have internal spaces, these are removed. The title is redisplayed in its 'space-stripped form'.

Pressing the **ESCAPE** key (or, for consistency with PRESTEL standards, * as an alternative) cancels the current title entry. In this editor, doing this also restores the previous title, and the cursor is returned to the menu.

These rules also apply to entering a new directory title, entering routeing, and also to entering a * < page name > # command in the SEARCH MODE.

Entering the frame-ID

After pressing **RETURN** to confirm the title, the cursor moves onto the FRAMEid section

Current page:	TITLE/No.	FRAMEid
	< 512 >	<a>
		(a-z)

This has to be a letter in the range a to z. Whatever letter you press overtypes the existing one, leaving the cursor in the same place. Pressing **RETURN** accepts whatever is displayed. Pressing **ESCAPE** (or *) restores whatever frame-ID was there already and also the previous title, escapes the option and returns you to the menu.

Pressing **RETURN** confirms the displayed frame-ID.

Titles under Single Frame/File Mode

It must be remembered that the single frame/file mode limits the number of characters to 6 letters + the frame-id, under the DFS, as 7 is the maximum number of characters permitted in a filename by the Acorn DFS.

Care must be taken over frame names if preparing frames under one of the other modes, with a view to transferring them to the DFS single frame/file mode. If it is too long, the system truncates the current frame's title when switching to this mode. However, it does NOT truncate the routing set up in the frame's Choice Table (See SETTING UP A PAGE'S ROUTEING). Long names in a frame's Choice Table will cause errors in the Search Mode when using single frame/file.

Titles under Multiple Frame/File Mode

A major difference in this mode compared with the Single frame/file mode, is that it is 'case-sensitive'.

Under the Acorn filing systems, a file entitled 'VSYSTEM' can be recalled using 'VSystem' or 'Vsystem' or 'VsYsTeM' — ie it is not 'case-sensitive' as it makes no difference whether you use upper or lower case letters.

Thus frames saved in the single frame/file mode which uses the Acorn filing systems directly, are not case-sensitive.

The multiple frame/file mode IS case-sensitive. If you attempted to load a frame that had been saved as 'VIEWa' using 'Viewa' it would generate the error message:

Frame not found in database

In general, you are advised to keep to upper case letters and numbers for the title, and leave lower case for the frame-ID.

A Note on 'Pages' and 'Frames'

A 'FRAME' is the videotex jargon for one 'screenful' of information. A screenful is only 40 columns wide (about half the width of a normal typed sheet). Its length is only 22 rows which is a bit over a third of a normal typed sheet. So all together a screenful or 'FRAME' displays only about 1/5th of an A4 sheet closely typed. To get around this limitation, a screenful or frame is considered to be only a part of a PAGE, which can consist of *up to 26 FRAMES*. The FRAMES are marked by the small letter (a-z). A PAGE always starts with the 'a' FRAME. It continues with the 'b' FRAME which is followed by the 'c' FRAME and so on. The main advantage of this is that when searching a viewdata base, a continuation FRAME is reached by simply pressing # (or on this system, RETURN can be pressed instead). When editing, each FRAME of a PAGE is a complete unit. After completing the 'a' FRAME, IT MUST BE SAVED, the 'b' FRAME then created and saved and so on. For each of these, the PAGE'S TITLE remains unchanged.

Handling the Current Page

SET UP A NEW PAGE and RETURN TO CURRENT EDIT both take you to the Editor's workspace. The first gives you a clean sheet, deleting anything that may have been there before, while the second returns you to whatever you were working on when you last left the Editor's, if anything.

ALTER THE CURRENT PAGE TITLE simply enables you to change the title assigned to the current contents of the workspace.

SET UP PAGE'S ROUTEING enables you to create or modify the links or routes between the current frame in the workspace and others in the database, these links and some other information are held in what is called the 'frame table'.

Thus every frame has two parts which always go together. The 'frame image' is the screenful that the users see and is created in the edit mode. The second part is the 'frame table' which you set up under the SET UP PAGE'S ROUTEING option. You may find it helpful to think of the frame-table as being 'on the back of' the frame image.

If you wish to keep the frame permanently, it must be 'SAVED' onto a filing system. It can then be 'LOADED' back in or recalled in the SEARCH mode.

When you SAVE or LOAD a frame to and from the workspace, both the image part and the frame table part are always transferred as a single unit.

In this system, you can create or modify either part separately, while on Prestel for instance, you have to go through the routeing section every time you want to modify the image.

After re-loading and modifying *either* of these parts, the frame must be re-saved to the filing system, where it will overwrite the old version.

SET UP A NEW PAGE

When selecting this option, before placing you in the Edit mode, with a blank screen, you are first prompted to enter a title for the page you are about to create.

Current Page:	TITLE/NO.	FRAMEid
ENTER	< <u>0</u> >	< a >
	-----	(a-z)

The cursor goes up to the top section of the screen, moving to the first letter of the existing title and ENTER flashes prompting you to enter in a title and frame-id for the frame you are about to create.

After entering them, pressing **RETURN** after each, you will be placed in the Edit Mode with a blank 'image' space, clearing any previously in the Edit workspace frame that was. It also clears the 'frame table' setting all the routeings to '*'.

3. The Hey Presto Editor

RETURN TO CURRENT EDIT

Selecting this option takes you directly to the editor's workspace, preserving whatever contents are currently stored there. This is useful if you have come out of the editor to the menu to perform one of the other options, such as (re)defining the text on the function keys using the SYSTEM* COMMAND option, or SETTING UP (THE CURRENT) PAGE'S ROUTEING, and wish to return to editing.

It can also be useful if you have SAVED a frame and want to create another that preserves the heading an footing or other section of the frame just saved. In this case:

1. After SAVING THE CURRENT PAGE,
2. Select ALTER CURRENT PAGE TITLE and give the new frame a title and frame-ID.
3. Select RETURN TO CURRENT EDIT, and change the text, keeping the relevant parts.
4. After that, press **ESCAPE** to return to the menu.
5. SAVE THE CURRENT PAGE.

NB: It is important not to forget step 2, otherwise the new frame will overwrite the old one when saved to the filing system.

ALTER CURRENT PAGE TITLE

This option simply lets you alter the title you want to give the current contents of the workspace. On pressing **RETURN**, this option puts the cursor in the top section of the screen and prompts you to ENTER a new title.

Current Page:	TITLE/NO.	FRAMEid
ENTER	< 0 >	<a>
	-----	(a-z)

Exactly the same rules apply when entering the title as in the option **SETTING UP A NEW PAGE** (see last section).

If you wish to set up a Continuation Frame, press **RETURN** to accept the existing TITLE. The cursor then moves on to the FRAMEid. Press the letter for the follow-on frame (which would be 'b' if the last frame was 'a', 'e' if the last frame was 'd', etc) and then press **RETURN**.

The cursor returns to the menu options.

Copying a Frame

The **ALTER CURRENT PAGE TITLE** option can be used to make a copy of an existing frame under a new title. The steps would be to:

1. **LOAD AN EXISTING FRAME.** Once you have entered the title and Frame-ID, the frame is displayed in the edit mode.
2. Press **ESCAPE** to return to the menu options.
3. Select **ALTER CURRENT PAGE TITLE** option and make the appropriate changes.
4. Then select **SAVE THE CURRENT PAGE** and the frame image will be stored under the new title.

The original still remains on the filing system unless you take the further step of deleting it.

Setting Up Routing

In creating a frame for the database, you may well have indicated to the user that by pressing certain number keys they can choose to be taken to certain other pages in the database. Every frame has a 'choice table' associated with it. This consists of the numbers 0-9 with an entry against each which holds the name of the page that must be fetched and displayed when a user presses that particular number. In this way, a frame can have up to 10 links or 'routes' to any other pages in the database. If no link has been set for a choice number, a "*" will be displayed against it.

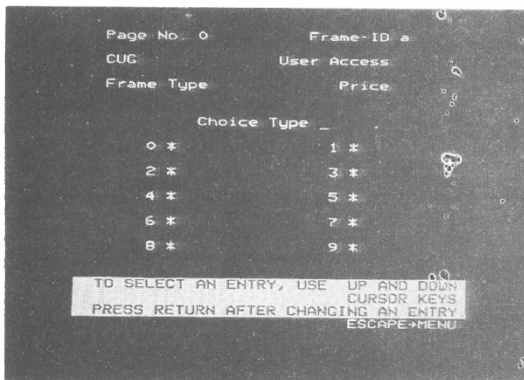
It is up to you to ensure that the 'frame image' informs the user as to what they can expect by pressing a number, and that this is correct! There is no internal link between the text content of a frame and the frame's routing table.

It is therefore also up to you to create the links between each number and the page to which you want users to be taken when they press that number.

To do this, you must select the menu option:

SET UP (THE CURRENT) PAGE'S ROUTEING

When you do so, the following will be displayed on the screen:



You may find it helpful to think of this as being 'on the back of' the current frame being edited. This table of information always gets SAVED and LOADED with the frame image. This means that the frame must be saved (or resaved) from the editor menu after any information has been entered or changed on this screen.

The cursor will be at Choice Type. It can be moved back and forth between entries using the up and down cursor keys. To begin with, you need only be concerned with the numbers below the Choice Type.

Creating the link between the number that the image prompts the user to press, and the page you want the user to be taken to, is very simple. When the cursor is against the number in the choice table:

1. Type in the title of the page.
2. Press the **RETURN** key.

Do NOT type in the frame-ID part with the title. You can only ever route the user to the 'a' frame of a page, never to 'b', 'c', or subsequent frames. Viewdata type systems therefore always supply an 'a' frame-ID part automatically, so you don't need to bother entering it in.

After pressing **RETURN**, the cursor moves onto the next entry. Repeat this for each 'Choice Number' that you want to enter, pressing **RETURN** after each one.

Returning to the Menu

After entering the routings, you return to the menu by pressing the **ESCAPE** key. (But see the note on the **ESCAPE** key below.)

Alternative Ways of Routing

When the cursor is at CHOICE TYPE, there are ways of automatically setting or cancelling the routing. These options are referred to as the Choice Type

1. Choice Type: Strict

Pressing **S** and **RETURN** for choice type means that you want to set up 'STRICT' routing. It will automatically set up against each choice number (0-9), a new title composed of the existing title with the choice number added to the end of it. In the above example, where 0 is the title, you would get:

Choice type <u>S</u>	
0 00	1 01
2 02	3 03
4 04	5 05
6 06	7 07
8 08	9 09

2. Choice Type: None

Entering **N**, and **RETURN**, for choice type means 'NO' routing and every choice is set to a '*' automatically. However, it is in general, bad practice to set up a frame with no routing to take the user out of it! It can be useful if you want to clear existing entries if you are re-routing a frame.

3. Choice Type: Free

Pressing **F**, **RETURN** for choice type means that you want to set up 'FREE' routing. It is then up to you to decide what page will be selected by each choice number. The cursor simply moves to choice 0. The 'f' choice is kept mainly for consistency with the PRESTEL on-line editor. However, in this editor pressing **RETURN** or the DOWN cursor key has the same effect.

A Note on Entering Titles

1. Return to Enter

Once you have typed in a title you must press **RETURN** to enter it and move the cursor on to the next field.

2. Cursor Forward

You can use the cursor forward key if you only want to change the last part of a title. Once you have moved the cursor into a title, you must press **RETURN** to go on to the next title.

3. Escape Key

If you have started typing in the wrong thing, pressing **ESCAPE** restores the title that was there before and puts the cursor at the start of the entry. This causes confusion if you forget to press **RETURN** after typing in a title and then press **ESCAPE** expecting to return to the main menu. You would then have to retype the title. Press **RETURN** after your last entry, and *then* press **ESCAPE** to return to the menu.

4. Pressing '*' to Cancel an Entry

Pressing '*' in the Routing Section has the effect of cancelling whatever entry is already there, and going on to the next entry. Against a Choice Number it leaves a '*', while against the others it leaves a blank. This is the one major difference between entering a title in the Routing Section and entering one in the main menu.

3. The Hey Presto Editor

Setting up a Carousel

To set up a frame for a 'Carousel' type rolling display, it is necessary to provide two items of information:

1. The title of the follow-on frame (which must be an 'a' frame).
2. The length of time that this frame must be displayed before the next one is called up.

To do this, Choice Number 9 is used to hold the follow on titles and the CUG at the top is used to hold the time delay in 1/100ths of a second.

Use the down cursor key to bring the cursor down to choice No 9.

Enter in the title of the next frame to be displayed, and press **RETURN**.

The cursor then 'wraps' around and up to the CUG position. Enter the time in hundredths of a second for the display of the current frame, and press **RETURN**.

Press **ESCAPE** to return to the menu.

Network Read Permission

When operating under the network filing system, the USER ACCESS field is used to set read permission to other (public) users. The default is owner Read/Write access only. This is set if the field is blank or has an 'n' entered. If a 'y' is entered, this additionally sets Read access to other users on the network. In this way, frames can be exchanged between network users, and access given to the whole or part of a user's database.

The Remaining Fields in the Frame Table

Although not all used by this system, these fields are retained to allow for a future bulk update program so that frames can be sent to Prestel and other similar systems.

It also allows frame compatibility with any future releases which may support these facilities.

1. CUG

This is short for Closed User Group. CUGs are not supported in this system. In this system (see above), it is borrowed by the Carousel, on the assumption that frames being used for a public Carousel are unlikely to overlap with frames destined for a CUG on Prestel.

The field is 5 alpha-numeric characters long. For Prestel, and use with the Carousel, only numeric characters should be used.

2. User Access

This field is used on Prestel by Information Providers who have entered a frame onto the Update Computer, but are not yet ready to release them to the public, perhaps waiting for a whole section to be finished. In this system (see above) it is used the Econet to allow public access to frames.

The field is a single character, and must be either 'y' or 'n'. Upper case 'Y' and 'N' are accepted and converted to lower case. Any other characters are rejected on pressing **RETURN**, and the cursor stays at this field.

3. Frame Type

Frame type is not used on this system. On Prestel the chief use is to indicate whether a frame is an ordinary 'Information' frame, or a 'Response' frame.

The field is also a single character, and must be either 'i' or 'r'. Upper case 'I' and 'R' are accepted and converted to lower case. Any other characters are rejected on pressing **RETURN**, and the cursor stays at this field.

4. Price

Again, prices are not supported by this system. IPs on Prestel use this field to enter the frame charge that appears at the top right of the frame.

When entering data for this field, it must be numeric. Any alpha characters are stripped and the cursor stays at the start of this field. Otherwise the cursor moves on to the next field.

Handling a Single Frame on the Filing System

Introduction

As can be seen in the next main section, Handling the Filing Systems, it is possible to switch between disk, cassette and network filing systems. Within the network and disk filing systems, it is possible to switch between directories. All the commands in this section, SAVE, LOAD and DELETE, work on whatever is the Currently Selected Filing System and whichever is the Currently Selected Directory.

Within the disk filing system, as explained in the first chapter, it is possible to work in two different filing modes. The random access file mode enables multiple frames to be stored in a single file under the DFS, maximising the use of available disk space, whilst the single frame per file stores each frame as a separate file under the DFS.

Which file mode is being used depends entirely on the disk being used to hold the database. If a disk holding a valid database file entitled 'VWDB' is found, it automatically opens it and switches itself into 'multiple' mode, otherwise it adopts the 'single' frame per file mode. The mode being currently used is displayed at the lower right of the Editor's Menu screen.

Apart from this, the disk mode is transparent, all filing operations being carried out in exactly the same way. The minor exception is the way in which the catalogue is displayed when that option is selected.

Random Access Filing System Errors

The random access filing system can generate the following errors:

Not a valid database

Error No: 45

This indicates that there is a file entitled 'VWDB' in the currently selected disk drive/directory, but that it is not a (valid) database file.

Database full

Error No: 46

This means that an attempt has been made to save a frame and there is no further room in the file in which to save it. Some other frame would have to be deleted to make room for a new one.

No such frame in database

Error No: 47

This means the system has been asked to find a frame in the database which is not there.

CATALOGUE FULL

Untrappable error

This is a fatal error which should not occur. It almost certainly means that your database is corrupted, or that an illegal disk swap may have taken place. If it occurs, it is necessary to reboot the system from scratch.

SAVE THE CURRENT PAGE

Selecting this option saves the current contents of the editor, together with the 'back page' information, (CUG, routing etc) under a framename made up of whatever title is currently displayed with the FRAME-id attached to the end of it. If there is NO title, you will be prompted to enter it first.

Normally the frame is saved, and the cursor returns to the menu options.

If however, a frame of the same name already exists, the message:

Press COPY key to overwrite (old frame)

appears at the top of the screen. This is to prevent accidental overwriting of a frame of the same name.

If you press the **COPY** key (below **RETURN** on the keyboard), it resaves the frame and displays the message:

Frame 0a overwritten

Pressing any other key stops any further action, and the message:

Frame 0a NOT overwritten

comes up. The cursor returns to the menu.

Error Messages

Error messages, such as FILE LOCKED or DISK FULL are displayed at the top left of the menu page, in the form:

**ERROR MESSAGE :
DISK FULL
ERROR NUMBER : 215**

The error number is also displayed so that you can look it up in the appropriate manual (User Guide, Disk Manual or Econet Manual), if you need more detailed information.

Any Error messages will disappear as soon as you press **RETURN** to reselect the option, or use the up or down cursor keys to change it.

LOAD AN EXISTING PAGE

This option enables you to load a page in from the file-store. As with SET UP A NEW PAGE, the cursor moves to the top 'Title' part of the screen, and you are prompted to enter the title of the page you want to load in. Then you are prompted to enter the Frame-ID. Press **RETURN** after each to accept what is displayed. See the SET UP A NEW PAGE section for details on entering a title and frame-id.

The requested page will be loaded and displayed in the Edit mode.

If the page could not be found an error message to that effect is displayed.

ERROR MESSAGE :
NOT FOUND or No such frame in database
ERROR NUMBER :

in the top left of the screen.

There are several reasons why a frame you thought was there might not be found.

1. You may have made a mistake typing in the title, or the frame-ID.
2. You may be in a different drive-directory to the one it is saved in.
3. You may be in the wrong filing system.

A simple way to check on these is to select the DISPLAY CATALOGUE option. This will display the contents of the current directory.

DELETE AN EXISTING PAGE

This option enables you to delete an existing page on the filing system. Like LOAD AN EXISTING PAGE and SET UP A NEW PAGE, the cursor moves to the top 'title' part of the screen and prompts you to enter the title of the page and frame to be deleted. See SET UP A NEW PAGE for more details on this. When you have entered the title and frame-ID, the message:

PRESS DELETE KEY TO CONFIRM DELETION

comes up on the screen.

If you press any key *other* than the **DELETE** key (lower right of the keyboard), the option is cancelled and the cursor returns to the menu, leaving the message:

< filename > **NOT DELETED**

If you DO press the **DELETE** Key, the specified frame will be removed from the filing system and the message:

< filename > **DELETED**

up on the screen.

These messages are removed when you change the option with the cursor keys or press **RETURN**. Also, when you leave the option, the title of the current frame in your workspace is redisplayed.

The Multiple Frame/File 'RUBBISH BIN'

When using the multiple frame/file mode under the DFS, deleted frames are put in a notional 'rubbish bin'. This effectively keeps deleted frames until there is no longer any space left in the database (ie when the No. of frames in the database + the No. of frames deleted = Maximum No. of frames allocated). At this point, deleted frames are considered 'up for grabs', and any frame in the 'rubbish bin' may be permanently removed to make space for a new one being saved.

Up until that point, with regards to any frames held in the rubbish bin:

1. They can be reclaimed if necessary, using the LOAD frame option. If it is then SAVED, it gets reinstated in the database and is removed from the rubbish bin.
2. They CANNOT be loaded in the Search Mode.
3. If a frame of the same name is being saved, there will NOT be a prompt saying PRESS COPY KEY TO OVERWRITE, and the frame in the rubbish bin will be overwritten and put back into circulation.

Error Messages

Again the error message NOT FOUND may come up instead, for the same reasons in the LOAD AN EXISTING PAGE option.

You may also get the error message:

FILE LOCKED

See the option SYSTEM '*' COMMAND on how to LOCK and UNLOCK files.

Handling the Filing Systems

The BBC micro has excellent facilities for switching between filing systems and much of its (hitherto untapped) power derives from this. This system has been designed to fully support both disk and network operating systems simultaneously.

Thus, individual work stations can have the advantage of a personal floppy disk, while at the same time, make use of the information sharing and communication available through a local area network.

Facilities are therefore provided to enable both switching between filing systems and switching between directories (and disks) within a filing system. When switching between NFS and DFS, the currently selected directory in *both* is maintained.

This allows operations such as loading a frame from one filing system, switching to the other, and saving under that one, making it simple to transfer frames.

Both filing systems have numerous useful '* commands', and access to these is provided, as is the facility to display, and print, a catalogue of the currently selected directory/database file.

SYSTEM '*' COMMAND

This option is very powerful and makes available a whole range of system commands which vary according to which version of the operating system you have, which filing systems you have available and are currently operating in, what extra ROMs you have in place etc.

These commands should be used with CAUTION, and if you get them *wrong* they can cause the program to crash, or subsequently behave in a strange way.

For instance, certain commands, such as the DFS commands

***COPY *COMPACT & *BACKUP**

use the computer's program memory space. Such commands should NOT be used. They will corrupt the Editor program and you will lose what you are working on, as the only way to get back to the Editor is by re-booting the system menu.

That said, they can be very useful and you are referred to the specific documentation for their use.

Selecting this option causes the display to turn to:



When entering a command, the star is already there so it is not necessary to enter it again (although your command is still accepted if you do). A maximum of 80 characters can be entered as a *COMMAND.

NOTE THAT YOU SHOULD NOT CHANGE THE DIRECTORY OR FILING SYSTEM USING THE * COMMAND. BUT USE THE FACILITIES PROVIDED IN THE EDITOR MENU. This is because *Commands are handed straight over to the BBC's operating system and the editor program will not be informed of the change. It therefore does not take appropriate action.

If the screen 'freezes' when the cursor reaches the bottom of the window, it is because the display is in paged mode. Pressing the **SHIFT** key scrolls it on.

Pressing the **ESCAPE** key takes you back to the editor menu.

Three examples of its use are given, drawn from the machine, disk and network operating systems respectively.

3. The Hey Presto Editor

Defining the Function Keys

If you know you are going to use a word several times, it is useful to be able to define a function key to produce it. (See the CommuniTel Tutorial Guide, p 66. See also the BBC Micro's User Guide, Chapter 25, p 141, for detailed information about defining the function keys).

The function keys can be used to produce text for entering frame titles or directory titles in the main menu, where it is useful when changing the titles of sequences of frames or moving them between directories. They can also be used in the Editor section by pressing **f9**. This makes your own definitions available instead of the editing functions. The editing functions are restored after a function key has been pressed.

Graphics patterns have to be entered using the table using the appendix 'Key Presses and Viewdata Screen Output'. The one that cannot be entered because it maps onto the **DELETE** key (all pixels on **II**) can be entered by pressing **f9** which is set up with this pattern as a default.

Another situation when it can be very useful to define a function key is when you have a number of repetitive operations to perform, such as moving frames from one disk to another, or from disk to network filing system. (See the CommuniTel Tutorial Guide, p 70, for details on how to do this).

When preparing keys for use in the edit mode, all the Viewdata special effects codes can be entered by using the same key presses as used when editing. Colour codes can be entered using **SHIFT** for Text, or **CTRL** for Graphics, and the function keys 1-7. Flash and Steady can be entered using **SHIFT** + **f8** or **f9**. Similarly, **SHIFT** + **CTRL** + a function key are used to embed any of the remaining codes. NOTE that these will not all appear in the function key definition as you type them in, and other letters or codes may appear instead. They will however take effect when the function key is used in the frame edit mode.

Some of the function keys when entered in a definition, produce codes which alter the way the rest of the definition appears. Graphics colour codes are entered directly so that you can see the patterns created. But some others, particularly selecting the graphics mode (**CTRL** + **f8**) when entered in a definition, puts up a conceal code which hides the rest of the line and Release Graphics (**SHIFT** + **CTRL** + **f3**) puts up a new background code which also hides the rest of the line. In such cases, you may prefer to use the control sequences given in the Appendix 'Putting Function Keys in Function Keys'.

It is also possible to encode the basic edit functions in a function key definition for use within the edit mode. This is done by entering the double vertical bar (**II**) followed by a letter, according to the following table:

Edit Function	Function Key	Definition Code
Help Window	f0	II P
Insert Char.	f1	II Q
Delete Char.	f2	II R
Insert Line	f3	II S
Delete Line	f4	II T
Erase to End	f5	II U
Home Cursor	f6	II V
Set/Unset Tab	f7	II W
Search Mode	f8	II X
Own Definition	f9	II Y

This might be used for instance to consistently alter the banner that heads a number of frames, where the sequence after loading each frame, might be: Move the cursor forward 9 places, insert character 6 times, enter GREAT, **ESCAPE** to the menu, move the cursor up to the SAVE option, press **RETURN**, followed by **COPY** to overwrite the original version, bring the cursor down again to the LOAD option, and finally press **RETURN** again to put the cursor back to the top of the screen ready for you to enter the title of the next frame. To define this sequence, you would enter:

```
KEY 0 " →→→→→→→→→→ || Q || Q || Q || Q || Q || Q || Q G R E A T
|| C ↑ || M COPY || || M "
```

and press **RETURN**.

After loading each frame, you would then press **f9**, followed by **f0**, thus updating the frame, saving it, and reselecting the load option.

Cursor keys do *not* work in this context. Instead, they are coded and appear when typed in as blank spaces. They come into effect when the function key is used later.

If you want to generate a **RETURN** (eg for use in the Menu), you must enter it using the double vertical bar key (**||**), followed by upper case **M**. **ESCAPE** is generated by using the double vertical bar followed by the open-square-bracket key (**[**). Note that this produced a back arrow on the screen in the teletext mode.

A point worth noting is that when in the edit mode, the editor normally flushes the key board buffer so that keys do not continue auto repeating after you take your finger off them. The exception is that when using your own definitions after pressing **f9** in the edit mode. The consequences of this is that from the *menu*, if you press a function key that takes you into the editor, any remaining actions will be cleared after the first character, even if that is the escape code taking you back to the main menu. On the other hand, from within the *edit* mode, it *is* possible to press **f9** followed by function key that escapes to the menu and then performs some action such as save the frame and reselect the load option.

If you wish to save the function key definitions for later use, while still in the O.S. * Command, enter:

```
*SAVE funkey B00 BFF
```

or, if using a second processor,

```
*SAVE funkey FFFF0B000 FFFF0BFF
```

To load them back in again, enter:

```
*LOAD funkey
```

where 'funkey' stands for whatever name you want to give this set of functionkey definitions.

If you are using a maximum size database file you may have to use a different surface to save the definitions onto, or swap disks (using the correct procedure!) if you are using a single sided single drive unit.

Note also that the total space allocated by the BBC Micro to hold *all* the function key definitions is only 256 characters. If you want to have several long function key definitions, then you may find it better to save them as several files, *SAVEing and *LOADing them as needed.

If you simply wish to clear existing function key definitions so that you can enter new ones, type:

```
*FX18 RETURN
```

3. The Hey Presto Editor

'Locking' a File

In the disk operating system, it is often useful to 'LOCK' a Viewdata base file which prevents it from being changed or overwritten by accident.

In order to LOCK a file from the SYSTEM '*' COMMAND, when the prompt:

ENTER COMMAND : * _

appears, enter

ACCESS VWDB L

and press **RETURN**.

In single frame per file mode, individual frames can be locked in the same way:

ACCESS < filename > L RETURN

where < filenames > is replaced by the whole of the frame's filename which consists of *both* the frame title *and* the frame-ID (eg 1056a or 0a or 5lb)

If you then display the catalogue (this can be done within the SYSTEM '*' COMMAND by entering CAT and pressing **RETURN**) you will see the file name has an L after it, indicating that it is locked. If each file is to be individually locked, it is useful to define one of the keys to produce 'ACCESS' if you are going to lock several.

To UNLOCK a file, when the prompt

ENTER COMMAND : * _

appears, enter

**ACCESS < filename >
and press RETURN**

Leaving the L out removes the LOCKED attribute and the Viewdata base or individual frame can then be amended, updated, overwritten or deleted.

There are a large number of commands available in the disk filing system which can be used in a similar way. You are referred to the disk manual for full information on these commands. But again, note the warning given at the beginning of this 'System * Command' section.

Seeing Who is Active on the Network

Similarly there are numerous commands available when you are using the network operating system. An example is the command *USERS which displays on the screen the active station numbers with the name of the user that is currently logged on to each. When the prompt:

ENTER COMMAND: *_

appears, enter

USERS and press **RETURN** key

An example display might be

```

OPERATING SYSTEM '* ' COMMAND
ENTER COMMAND: * : * USERS
101 JOHN
102 MARY
105 SUE
136 NIKE
173 GLADYS           S
ENTER COMMAND: *
PRESS SHIFT TO SCROLL SCREEN DR...
...ESCAPE TO RETURN TO MENU.

```

Under Econet Level 2, the 'S' after GLADYS would indicate that GLADYS is a 'System User' with special access to commands for controlling the filing system.

3. The Hey Presto Editor

Change the Current Filer

The BBC micro is able to support several different filing systems. The tape cassette, disk and network filing systems are the most common. The disk and network operating systems both require additions to the standard BBC micro. If one or both of these are fitted, it is possible to switch between the available filing systems by selecting the option:

CHANGE THE CURRENT FILER

and press **RETURN**

The cursor then moves from the OPTIONS menu to the FILER menu.

```
FILER
*NETWORK
*TAPE
*TAPE3
*DISK
```

As with the option menu, the red selection bar can be moved using the up and down cursor keys until it underlies the filing system wanted. That filing system is then selected by pressing **RETURN**. The cursor will then return to the main options menu.

All subsequent SAVES, LOADS, DELETES, DIRECTORY CHANGES AND CATALOGUES will be done using the currently selected filing system.

When switching from Disk filing system, any random access Viewdata base file gets closed. It is therefore possible to swap disks in a local disk drive at any time that *DISK is *not* selected as the current file. On switching to the disk filing system the disk in the currently selected drive is checked, and, if a random access Viewdata Base File is found, it is opened, in which case, the Frames/File indicator switches from 'single' to 'multiple'.

Notes

However, the following points should be noted.

1. Unless the filing system has been fitted in the machine, an error message will be displayed if you attempt to select it and the filing system reverts back to the one you were already in.
2. The BBC micro has 2 cassette speeds at which it can operate: a fast speed at 1200 bits per second which is the default, and a slow speed at 300 bits per second. While slower, this can be more reliable. The first is selected by *TAPE while the slower, at 300 bits per second, is selected by *TAPE 3.
3. When in either cassette filing system two options are NOT available:

DELETE AND EXISTING PAGE and CHANGE THE CURRENT DIRECTORY

If an attempt is made to select one, nothing happens. Deleting a file on a cassette is done by simply overwriting it. When a cassette tape filing system is selected, a message 'Not Available' is displayed under Current Directory title at the foot of the screen.

4. When selecting the Disk Filing System the maximum size for the page title has to be reduced to 6 letters when in single frame per file mode, while the directory size under the DFS is reduced to 4 characters in both modes.
5. The page title size goes upto 9 characters when the network, the DFS multiple frame per file mode, or either of the cassette filing systems are selected.
6. The size of the Current Directory title is increased to 16 characters when the Network Filing System is selected.

Change the Current *DIR

This function serves the following purposes:

1. To display a remainder of the Current Directory.
2. To make it easy to change it.
3. If you are changing between the disk and other filing systems, it re-asserts your current disk directory when you change the filing system back to the DFS, as normally this gets set to :0.\$.

For basic information about both the Acorn Disk and Econet filing systems, you are referred to the respective manuals. Both filing systems allow multiple directories which the user can move between. All LOADS, SAVES and DELETES are performed in what is referred to as The Currently Selected Directory.

Under the DFS

Whenever the selection bar underlies this option, the message:

To swap disks press SHIFT + RETURN keys

appears at the foot of the options. This acts as a permanent reminder as to the correct procedure for physically swapping disks (See next section). You do not need to hold down the **SHIFT** key if you simply wish to work on a different surface of one of the disks already in the drive unit.

This option enables you to change the currently selected directory (and also disk surface) that you are working with. On choosing this option the cursor moves down to the foot of the screen:

Current *DIR: TITLE
< : 1.\$ >

This example assumes that you are in the DISK filing system, and that the current directory is on Drive 1, and is the 'root' directory, \$. If you wished to change to the root directory on Drive 0, you would:

1. Use the Cursor Right key to move the cursor under the 1,
2. Overtyping it with **0**,
3. Press **RETURN**.

If instead you wanted to change to directory I (in order to work with the Host's Inray), on Drive 3, you would:

1. Use the Cursor Right key to move the cursor to the 1,
2. Overtyping it with **3**,
3. Move the cursor under the \$,
4. Overtyping it with **I**,
5. and press **RETURN**.

In both cases, the cursor goes back to the main options after you press **RETURN**. Selecting the DISPLAY CATALOGUE option will show the contents of the Currently Selected Directory, or of the View-data base file under DFS.

Under the NFS

1. Changing Directories

Under the Network Filing System, the space available for the directory is increased to 16 characters, as the network allows up to 10 characters in a directory name and these can also have subdirectory suffixes. See the Econet Users Guide for full information about moving between network directories.

When the Editor is entered from the Network filing system, the current directory is shown as a blank. This is usually your User Root Directory which varies according to who the user is. In the network context, changing directories is mainly useful for picking up frames from other directories and incorporating them in your own.

3. The Hey Presto Editor

2. Getting to another Viewdata base

Given the Search facility within the Editor, it can also be used to select and search different databases on the Network. Normally, after selecting the database's directory, load the 0a frame and then press f8 to put you into the Search mode.

In all the network uses, you will only be able to look at frames in directories that are not yours if their owners have granted public Read Access of the frames (see the section on Network Read Permission under SETTING UP ROUTING).

To get to another user's directory, you normally select the CHANGE CURRENT *DIR option, and type in the full directory specification, beginning with the root:

```
$.< user-root-directory > ( < sub-directory > )
```

where the part in angle brackets <> is replaced by the appropriate name, and the part in round brackets () is optional and also may be repeated several times. If there is not enough room to type the full directory specification within the 16 character field, it must be broken into more steps, entering the first part, pressing **RETURN**, then reselecting the option, typing in the next part and pressing **RETURN** again, and so on.

3. Getting Back to Your Own Database

If, on the Network, you have been changing directories, and want to return to your User Root Directory, you would normally enter the command *DIR on its own, with no further specification. To do this from this option, when the cursor gets to the foot of the screen, simply use the **SPACE** bar to blank out any directory name that may be there already, and then press **RETURN**.

If your database is in a sub-directory, reselect this option and enter the sub-directory title.

Swapping Disks using 'CHANGE THE CURRENT *DIR'

When using the Disk Filing System, if you want to physically remove a disk, and put another in its place, it is essential to follow these steps:

1. Bring the selection bar down to the option:

CHANGE THE CURRENT *DIR

The message:

To swap disks press SHIFT + RETURN keys

appears beneath the options.

2. Hold down the **SHIFT** key, and press **RETURN**.
3. The message is replaced by another:

Swap Disks

flashing in green.

4. It is now safe to take out the current disk and replace it by another.
5. When the new disk is ready, press **RETURN** again. The disk will whirr as it checks the new disk.
6. The cursor will go back to the menu options and you are ready to work with the new disk.

The reason that this is important is twofold.

1. When working in the random access filing/multiple frames per file mode, this file is held OPEN and key information from it is read in the computer by the system. So, for the system to work correctly with the new disk, the first file must be closed and the new one opened. For this to happen, you must signal to the system your intention to swap disks BEFORE actually doing so.
2. Given that there are two filing modes, single and multiple frames per file, the system must check which mode to use with the new disk. Again it will only do this if you TELL it that you are changing disks.

You may however change disks at any time if you are under any of the filing systems *other* than disk, as it closes the file when you switch out of disk mode and reopens if you switch back in.

Disk Checking

There is *inbuilt* checking that takes place before every file transaction when in the multiple frame per file mode. If the system finds that the information on the disk does not correspond with the information it holds about the database, it puts up an error message:

Illegal disk swap?

closes the old file, and then the system rechecks and sets itself for the (new) file. If it is successful it puts up the further message:

Recovered. Please reselect option.

You can then proceed as normal. The knowledgeable need not worry about the previous disk file not being closed before removal, risking corruption, as the system ensures that the media is up to date after every transaction.

Although this checking generally prevents your Viewdata base from being corrupted if you fail to follow the correct disk swapping procedure, there are conceivable, but unlikely, circumstances in which it might not catch the change, causing corruption in your file.

3. The Hey Presto Editor

It also does no checking, if you were in single frame per file mode and illegally swapped in another disk with a random access database file. In this case, it would try to save a frame as a single file in which case it would either succeed, but it would appear within your database file, or if the file occupied the whole of the disk surface, you would get the error message:

disk full

If this happens, select the option:

CHANGE THE CURRENT *DIR

hold down the **SHIFT** key and press **RETURN**. When the message 'swap disks' flashes, simply press **RETURN** again, and the system will reset itself to the new disk.

The Procedure for Swapping Disks in a Drive Other than that Currently Selected

The knowledgeable will also want to know if it is necessary to go through this procedure if the disks being swapped are in a drive unit other than one holding the currently selected drive/directory (ie would it be possible to simply swap the disk in Drive 0, if he currently selected database disk is in Drive 1)?

Well the answer is: No, it is not strictly necessary to follow the procedure as the other disk with the file open is still in place where the system expects it to be. But there is a danger, if the procedure is sometimes used and sometimes not, that sooner or later a problem might occur. If a lot of effort has gone into your viewdata base, it is worth taking steps to protect it.

Following the correct procedure certainly does no harm if the swapped disk is not the currently selected one.

The correct procedure becomes essential if, after swapping disks in the other drive, you want to switch o that drive and change the drive number of the current directory, before finally pressing **RETURN**.

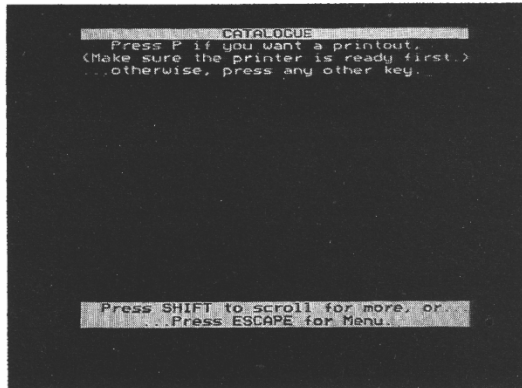
So the best advice is always follow the procedure when swapping disks.

Display Catalogue

This option enables you to display the catalogue of the currently selected directory of Viewdata base file.

It automatically puts you into 'paged display' mode, so that if the catalogue is a long one, it pauses after one screenful so that you can read it. To display more, press the **SHIFT** key and another screen's worth is shown.

On selecting this option, the following appears:

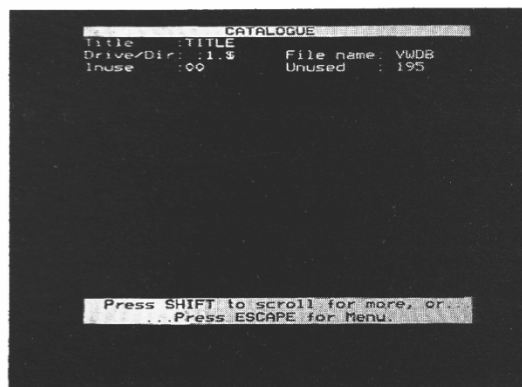


Pressing **P** will produce a listing of the catalogue as it is displayed. But it is necessary:

1. To have correctly configured your printer at some stage prior to this. This is done from the main system menu. (See Chapter 1 for details.)
2. To make sure that the printer is currently set up ready to be used. If you are using an Econet printer server, you are advised to make sure that the printer server is both set up and free first, as printer spooling is not currently supported.

Multiple Frame/File Mode

If you are in this mode, you will typically get a display such as:



3. The Hey Presto Editor

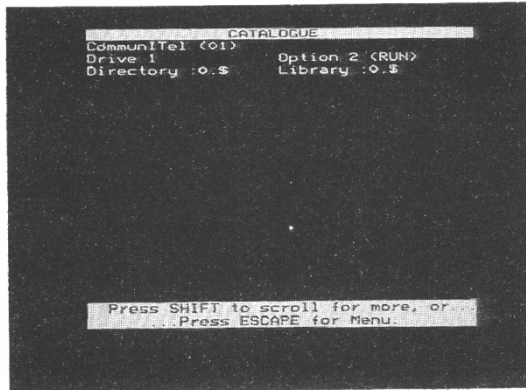
If there are any deleted frames in the 'rubbish bin', (see section DELETE AN EXISTING FRAME) the message;

Press R for frames still Retrievable

appears under the catalogue. Pressing **R** causes the system to display those frames that have been deleted but can still be 'Retrieved' from the 'rubbish bin' using the LOAD A NEW FRAME option.

Single Frame/File Modes

In other modes, the following would be a typical display:



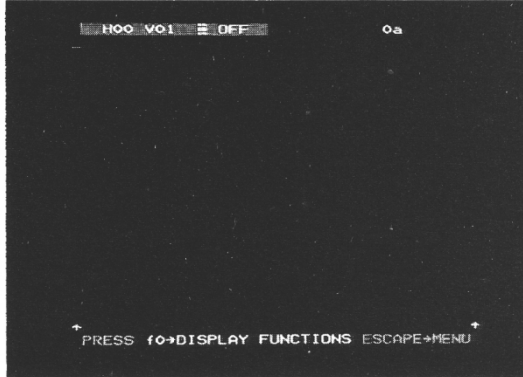
Note that it is possible in this mode for you to have files other than Viewdata files in the catalogue. It is usually possible to distinguish the Viewdata frames by the lower case frame-id used for the last character of the filename.

You press **ESCAPE** to return to the Editor's menu.

The Screen Editor

Overview

When you enter the Editor, the following appears on the screen:



The three rows are the Top, Header Row, the TAB STOP Row with up arrows marking the TABs, and the Bottom, Message Row.

The top line and bottom two lines display information. The rest of the screen is blank text space. The underline cursor is at the top left of the text space.

Top Row

The 'H00 V01' above the cursor marks its HORIZONTAL and VERTICAL POSITION. They get updated whenever the cursor moves.

The next part of the Top Row, 'OFF', relates to the teletext Graphics mode, the 'OFF' indicating that the graphics mode is currently set to off. (See Graphics Mode for more on this.)

The last part of row 0 displays the current page title and frame identity. The default is '0' and 'a' respectively.

Tab Stop Row

The two up-arrows in the second row from the top of the screen mark preset TAB STOPS. Pressing the **TAB** key jumps the cursor back and forth between set TAB STOPS. (See the section on setting and upsetting TABS for more). These default TABs make it easier to jump to the beginning or end of a line.

The Bottom Row

PRESS f0 → DISPLAY FUNCTIONS ESCAPE → MENU

This row displays two reminders. The first is a reminder that the left hand red function key, **f0** can be used to display the setting of the rest of the function keys. When you first start using the Editor, **f0** is the most useful key. It is effectively a HELP key, and can be used to display a reminder of what the red function keys do at the foot of the display. This is called a function key window. See the section on FUNCTION KEYS for more on this.

The second is a reminder that pressing the **ESCAPE** key takes you back to the menu.

The Keyboard

With a few minor exceptions, all the keys behave normally. **CAPS LOCK**, **SHIFT**, **RETURN** and **DELETE** keys behave as usual.

Cursor Keys

1. The cursor keys are used to move the cursor around the screen, with 'wrap around' in all directions.
2. Text is put up wherever the cursor is on the screen.
3. This is rather different from its normal use on the BBC, where the cursor keys move a second 'COPY' cursor around the screen.
4. Because the cursor keys move the text cursor, rather than a 'copy cursor', the copy key is disabled — though, as we shall see later, it comes into its own in the graphic mode.

Shift Lock

Because it alters the use of the function keys, which can cause confusion and unwanted effects, the **SHIFT LOCK** key when pressed, only sets the **CAPS LOCK** on. It does not toggle (ie also switch off, if it is on) the **CAPS LOCK**.

Function Keys

A full VIEWDATA editing keyboard has a large number of extra keys on it to make available all the special colour and effects codes that this kind of display uses. While it would not be impossible to make a special version of this editor available for use with a viewdata keyboard, this would be relatively expensive, and rather defeats the purpose of the program which is to make creation and exchange of viewdata information available to as many people as cheaply as possible. Because of this, a great deal of care has gone into the way in which these codes can be entered using the function keys.

Function Keys on the BBC Micro

Although there are 10 red function keys (**f0-f9**) available on the BBC micro, it has been so designed that:

1. If a **SHIFT** key is held down and function keys pressed, a further ten functions can be made available.
2. Similarly, if the **CONTROL** key is held down and the function keys pressed yet another set of 10 functions can be produced, and
3. Finally the same thing happens *if both* the **SHIFT** and **CONTROL** keys are held down. Altogether this makes a total of 40 functions available. At first sight, this seems a lot to remember, so a reminder, sometimes called a soft window, for each set of functions can be displayed at the foot of the screen. (See section on **f0** — the HELP key).

Auto Indent and 'Colour Wrap'

Auto Indent

If, when you are typing, the cursor goes over the end of the line, as usual, it goes to the next line. But it does not necessarily go to the first column of the new line. If the next line is blank, when *the cursor goes over the end of the current line*, it will automatically be placed directly underneath the first character of the line it has just come from. Thus it always follows the indentation of the line above. You can of course use the cursor keys to then move it backwards or forwards from that point. You can also press **RETURN** to place it at the start of the next line, and avoid the auto-indent.

WHEN IT DOESN'T HAPPEN

If the line below has already got characters on it, the cursor will be placed under the first character that appears on the new line.

DOUBLE HEIGHT

If the line you have just come off is a Double Height line then the auto indent **DOES NOT WORK**. The cursor goes to the start of the next line.

NB You get strange effects if you start typing in the last column of a line. The indent is also to the last column, so what you enter appears as a vertical column down the right edge of the screen!

Colour Wrap

In addition to the auto indent, if the line below is blank, any colour codes and/or special effects code that occur before the start of the text on the line are **COPIED** automatically to the start of the new line. This means that you do not have to stop thinking about what you are typing to put in colour codes at the start of every new line.

It does **NOT** happen if there are other codes already on that line, if the line has text on it, or the line you are leaving is a double height line.

Auto indent and colour wrap are really parts of the same thing. All spaces and colour codes at the start of a line get copied on to the start of the next (blank) line.

Using the **TAB** Key to Force Indenting and Colour Wrap

For the auto indent and colour wrap to happen, the cursor **MUST** go over the **END OF THE LINE**. The last whole word that you can fit on a line usually stops short of the end of the line. There is a default **TAB STOP** at the beginning and end of each line, marked by the up arrows at the foot of the screen. Pressing the **TAB** key will take you to the end of the line if no other **TABs** are set in between.

When finishing a line, pressing **TAB** key, then **SPACE** or cursor forward key will set up the next line.

f0 — The Help Key

The left hand red function key, **f0** can be used to display a 'window' for each of the 4 layers of the function keys. The opposite page shows the 4 windows and spells out in full the rather compressed reminders that are displayed on the screen. They are explained in detail in the following pages.

f0 On Its Own Displays the EDIT FUNCTIONS

If the following is displayed:

PRESS f0 → DISPLAY FUNCTIONS ESCAPE → MENU

then pressing **f0** will display the window opposite.

This shows the editing functions which can be obtained by pressing the appropriate function key on its own. If any window is ALREADY displayed, pressing **f0** will switch it off, and restore the original footing shown above.

SHIFT and **f0** Displays the TEXT COLOUR CODES

Holding the **SHIFT** key down and pressing **f0** displays the window opposite.

This shows what codes are obtained by holding down the **SHIFT** key and pressing the function keys.

CTRL and **f0** Displays the GRAPHIC COLOUR CODES

Similarly, holding down the **CTRL** key and pressing **f0** shows the graphics window.

These are obtained this time by holding down the **CTRL** key and pressing one of the function keys. The one to remember is **CTRL** + **f8** which switches on the GRAPHIC MODE.

SHIFT and **CTRL** and **f0** Displays the SPECIAL VIEWDATA EFFECTS CODES

This window is displayed only after holding down both **SHIFT** and **CTRL** keys, pressing **f0** and then releasing the **SHIFT** and **CTRL** keys.

This applies to all these codes. Holding down **SHIFT** and **CTRL** freezes the display so their effects can be seen only AFTER finally releasing the **SHIFT** and **CTRL** keys.

Edit Functions

f0	f1	f2	f3	f4	f5	f6	f7	f8	f9
ON/ OFF	INS CHR	DEL CHR	INS LIN	DEL LIN	ERS LIN	HME CSR	SET TAB	SCH /VW	OWN FN
Edit function help window off or on	Insert character	Delete character	Insert line	Delete line	Erase to end of line	Home cursor	set/ clear tab	search Viewdata Base mode	your own function key definition

Text Colours

SHIFT + f0	f1	f2	f3	f4	f5	f6	f7	f8	f9
SHFT FNS	RED	GRN	YLW	BLU TEXT	MGN	CYN	WHT	FLA SH	STE DY
Shift function help window	Red	Green	Yellow	Blue	Magenta	Cyan	White	Flash code	Steady code

Text colour codes

Graphics Colours

CTRL + f0	f1	f2	f3	f4	f5	f6	f7	f8	f9
CTRL FNS	RED	GRN	YLW	BLU GRAPHICS	MGN	CYN	WHT	SET GR	PUT GR
CTRL function help window	Red	Green	Yellow	Blue	Magenta	Cyan	White	Set graphics mode	Put graphics pattern

Viewdata Special Effects

SHIFT + CTRL + f0	f1	f2	f3	f4	f5	f6	f7	f8	f9
SHIFT CTRL	DBL HT	NML HT	SEP GR	CNT GR	HLN GR	RLS GR	cnc DSP	BLK BG	NEW BG
SHIFT + CTRL help window	Double Height	Normal Height	Separate	Contiguous	Hold Graphics	Release	Conceal Display	Black Background	New

Some General Points about the Function Keys

Before going into detail, it is worth making some general points.

First A Warning

When using **SHIFT** and/or **CTRL** keys with the function keys, it is important to:

1. Hold the **SHIFT** (and/or **CTRL**) key down FIRST;
2. then blip the function key;
3. and then release the **SHIFT** (and/or **CTRL**) key.

This is because if you DON'T, it is very easy to have the function key down for a fraction of a second on its own, BEFORE the **SHIFT/CTRL** key makes contact in which case you will get one of the EDIT functions with *unwanted* results! Remember also that the function keys, like all others, have auto repeat on them. A short 'blip' of the key prevents this happening.

BBC Micro's DEFAULT SETTINGS

When the BBC micro is switched on, it comes up by default in MODE 7, the TELETEXT mode. The function keys are also present by default, so that pressing **SHIFT** and a function key, produces *mode 7 text* colour codes plus flash and steady. Pressing **CTRL** and a function key, produces *graphics* colour codes. A major decision in programming the function keys was to stay with these default settings. The EDIT functions and the SPECIAL EFFECTS codes fitted quite naturally around these.

Colour Coding in the Displays

The next thing to note is that in each function key window, function keys **f1** to **f7** are always displayed in the same colours. These colour codings *correspond* to both the **SHIFT**ed text colours and the **CTRL** graphics colours. This means that if you have the edit function key window displayed, and you know that **SHIFT** and a function key produces a text colour code, then you will be able to read off from the colour of the display, which function key to press with the shift key to put the colour code you want.

Knowing this you should find that very soon you can dispense with displaying the TEXT and GRAPHICS function key windows, and work mainly from the EDIT and SPECIAL EFFECTS windows.

Pairs of Functions

One last point to help familiarise you with the layout of the function keys: the keys, as far as possible have been set out in pairs: INSERTS next to DELETES, FLASH next to its switch off STEADY, DOUBLE HEIGHT next to its switch off NORMAL HEIGHT etc.

Next follows a description of the 4 'layers' of function keys with notes on each function key.

Edit Functions

Function Keys Pressed on Their Own

- f0** - ON/OFF This key displays the edit functions. If any window is displayed, **f0** switches it off.
- f1** - INS CHR INSERT CHARACTER. This inserts a space at the cursor position by pushing the rest of the line along to the right. It auto-repeats if held down.
WARNING: Characters going off the end of the line are LOST. They are NOT 'wrapped around' to the next line.
- f2** - DEL CHR DELETE CHARACTER. This 'undoes' INSERT CHARACTER. It pulls the rest of the line back, deleting the Character above the cursor. The cursor does not move.
(NB the **DELETE** key differs in that it moves the cursor backwards, deleting as it goes.)
- f3** - INS LIN INSERT LINE. This inserts a blank line by pushing the line the cursor is on and all others below it down one line. Unlike INSERT CHARACTER, lines pushed down off the bottom of the screen are NOT LOST. Indeed there is a 'pocket' down into which a whole frame or screenful can be pushed.
- f4** - DEL LIN DELETE LINE. This 'undoes' INSERT LINE by deleting the whole of the line that the cursor is on, and pulling all lines, including those in the pocket, up a line.
- f5** - ERS LIN ERASE TO END OF LINE. This erases from wherever the cursor is to the end of the line. If the cursor is placed at the beginning of a line, it can be used to delete a line WITHOUT pulling up the rest of the screen.
- f6** - HME CSR HOME CURSOR. This simply puts the cursor at the top left corner of the text space.
- f7** - SET TAB SET AND UNSET TAB STOPS. By moving the cursor to any position in a line and pressing **f7** a TAB STOP CAN BE SET. This marked by an up arrow in the TAB STOP row. If any window is displayed, it is switched off so that the new stop can be seen. If there is already a TAB STOP at the current cursor position, then it is removed or UNSET. Pressing the **TAB** key jumps the cursor to the next TAB STOP or, if there are no more, to the first TAB STOP from the left. There are default TAB STOPS at the beginning and end of the line. TAB STOPS are carried over from one edit to the next within the same session.
- f8** - SCH VW SEARCH/VIEW MODE. This takes you out of the edit mode and into the local VIEWDATA base mode, and behaves like PRESTEL does to a user. 'Search Mode' flashes at the top of the screen to show that you are no longer in EDIT mode and a prompt appears at the foot of the screen:

f0 → EDIT # → NXT FRAME * # → GO BACK ESCAPE → MENU

1. Getting Back to the Editor
Pressing **f0** will take you out of the SEARCH/VIEW 'user' mode and put you back in the Editor, with whatever frame is currently displayed.
2. Getting Straight Back to the Menu
Pressing **ESCAPE** will return you directly to the Menu. This mode is extremely useful if you have edited a number of pages and want to check their routing. If any mistakes are found, they can be corrected straightaway and the frame re-saved. It is also very useful to be able to switch back and forth if the system is being used as a personal notebook or 'Note-base'.

WARNING: Remember to SAVE your current work *before* going into the SEARCH/VIEW mode as it will be lost when a new page is pulled in.

f9 - **OWN DF** OWN FUNCTION KEY DEFINITIONS. When you press **f9**, all the Edit functions are temporarily lost. The following messages come up at the foot of the screen:

f0 f1 f2 f3 f4 f5 f6 f7 f8 f9
YOUR OWN PRESENT FUNCTION KEY DEFINITIONS
PRESS A FUNCTION KEY YOU HAVE DEFINED

Any text that you may have assigned to the function keys will now be available. This is useful if there are words or phrases that you know are going to occur several times during an edit session. See page 141 of the User Guide on how to set up definitions for the keys or the section on SYSTEM '*' COMMANDS. After the text has been entered, the edit functions are restored.

- WARNINGS**
1. Be careful **NOT** to hold down a function key too long. They auto-repeat much quicker than it takes to get the text in and several may get started up before you realise it. Once they start, there is no way of stopping them and they just keep rolling in.
 2. You are also advised to keep a note of what keys have what definitions and a count of the letters in each as they may not fit in the space available.

Viewdata Control Codes

Before going on to the next three 'layers' it is worth making some points about the way the viewdata control codes work. All the codes, colour codes, flash, background, double height etc, all occupy a single space on the screen. When you enter them the cursor moves forward one space. They are 'invisible characters'. Like any other characters they can be deleted, overwritten or otherwise edited. Whenever you enter them, make sure there is a space for them which has no other codes or letters in it.

But because you cannot see them, it is quite easy to forget where they are and overwrite them by mistake — with sometimes bizarre effects. The worst is when your carefully set up graphics suddenly becomes a jumble of characters. (If this happens, DON'T PANIC. Delete the last character and re-enter the graphics colour code, which is what you have just overwritten, but see the section on Graphics.)

'To the End of the Line' Rule

To understand why this should happen, it is necessary to know the other general feature of these codes, that is that they influence from wherever they are TO THE END OF THE LINE that they are on.

If for instance, you put a red text code in the middle of a line of white text, from there on will turn red. If you move further along the same line and put in a green text code, then from that point onward will be turned green.

Similarly, if you put a flash code (**SHIFT** + **f 8**) in a line, the rest of the line will flash on and off. If you move further down the line and put in a steady code (**SHIFT** + **f 9**), then, for the rest of the line, the flashing is turned off.

So more precisely, codes influence from where they are to the end of the line UNLESS they are switched off by another code. Colour codes switch off earlier colours by taking over, and as we shall see later, like FLASH and STEADY, all the special effects codes have their 'switch off codes'.

The GRAPHICS codes have the effect of redisplaying most of the character set, other than upper-case letters, as graphic or 'mosaic' patterns. (Compare BBC User Guide pages 486 and 488 to see which letters are turned into which patterns).

So, when a graphics code gets knocked out, the result, if there are no other graphic codes earlier in the line, is that the 'mosaic' patterns revert to their default character display.

Finding Where Codes Are

To help in finding hidden codes and make it easy to change them, whenever the cursor underlies one, an indication of the code appears on the top line of the screen.

If it is a text or graphics code, the word **TEXT** or **GRAPHIC** as appropriate appears *in the same colour as the hidden code*.

Other codes appear in yellow, using the same text as appears in the function key windows.

You may also find it worth adopting the following rules of thumb to speed up the process of finding and changing codes.

1. As far as possible put your codes at the beginning of the line.
2. When putting codes elsewhere, put them immediately to the left of the visible characters they are acting on.
3. If you are putting several codes together, try to keep them in some order, such as: special effects before colour codes (except for New Background which must have a colour first).

Text Colour Codes — **SHIFT** Plus Function Keys

- SHIFT** + **f 0** - **SHFT** - **FNS** This displays the text colour code window. The message is to remind you that these are obtained by pressing **SHIFT** and the FUNCTION keys.
- SHIFT** + **f 1** - **RED** This enters the RED text code at the current cursor position.
- SHIFT** + **f 2** - **GRN** This enters the GREEN text code at the current cursor position.
- SHIFT** + **f 3** - **YLW** This enters the YELLOW text code at the current cursor position.
- SHIFT** + **f 4** - **BLUE** This enters the BLUE text code at the current cursor position.
- SHIFT** + **f 5** - **MGN** This enters the MAGENTA (PURPLISH) text code at the current cursor position.
- SHIFT** + **f 6** - **CYN** This enters the CYAN (PALE BLUE) text code at the current cursor position.
- SHIFT** + **f 7** - **WHT** This enters the WHITE text code at the cursor position.
- SHIFT** + **f 8** - **FLASH** This enters the FLASH code and causes succeeding characters to flash.
- SHIFT** + **f 9** - **STEADY** STEADY code which turns off the FLASH code, making the rest of the line STEADY.

As explained before, because of the colour coding of the keys in the other displays, once you have learned that **SHIFT** plus **f 8** and **f 9** also produce FLASH and STEADY, it should be no longer necessary to have to display this window.

Graphics Colour Codes — **CTRL** plus Function Keys

- CTRL + f0 - CTRL FNS** This displays the GRAPHICS COLOUR WINDOW. Its message reminds you that these are obtained by holding down **CTRL** and pressing one of the function keys.
- CTRL + f1 - RED** This enters the RED GRAPHICS code at the current cursor position.
- CTRL + f2 - GRN** This enters the GREEN GRAPHICS code at the current cursor position.
- CTRL + f3 - YLW** This enters the YELLOW GRAPHICS code at the current cursor position.
- CTRL + f4 - BLU** This enters the BLUE GRAPHICS code at the current cursor position.
- CTRL + f5 - MGN** This enters the MAGENTA GRAPHICS code at the current cursor position.
- CTRL + f6 - CYN** This enters the CYAN GRAPHICS code at the current cursor position.
- CTRL + f7 - WHT** This enters the WHITE GRAPHICS code at the current cursor position.
- CTRL + f8 - SET GR** SET GRAPHICS MODE ON. This takes you out of Text and into GRAPHICS mode which has a section to itself, once pressed the TOP LINE shows **ON** with the **ON** flashing to show this mode is set. It is necessary to press the **ESCAPE** key to restore normal text entry mode.
- CTRL + f9 - PUT GR** PUT GRAPHICS pattern at current cursor position. This copies the graphics pattern displayed on the top line to the cursor position. It must be preceded by a graphics colour code to be displayed. This function, **CTRL + f9**, is not often used as the **COPY** key is more convenient when in the GRAPHICS MODE. However this key is useful if you want to copy the current graphics pattern directly from the text mode. An example might be to underline blocks of text. If the pattern has previously been set to **▬** then by putting in a graphics colour code at the beginning of a line and holding down **CTRL** plus **f9** will effectively produce a line across the screen from text mode.

Once again when you have got the hang of graphics colour codes, and you know that **CTRL** plus **f8** sets the GRAPHICS mode on, you will not often find it necessary to display this function key window.

Special Viewdata Effects — **SHIFT** Plus **CTRL** Plus Function Keys

Again, it must be stressed that because of the design of the BBC micro, holding down **SHIFT** and **CTRL** together 'freeze' the screen, so the full effects of these codes is not visible until AFTER you release the **SHIFT** and **CTRL** keys.

- SHIFT** + **f0** - **SHFT** This displays the SPECIAL EFFECTS WINDOW
+ **CTRL** **CTRL** This message reminds you that both **SHIFT** and **CTRL** must be held down to obtain these effects from the function keys.
- SHIFT** + **f1** - **DBL** DOUBLE HEIGHT. This is one of the most popular special effects, hence its
+ **CTRL** position on **f1**. After entering this code, all succeeding characters are doubled onto the line below. Whatever is on the line *beneath* is LOST. See the section on DOUBLE HEIGHT codes for more details on this code.
- SHIFT** + **f2** - **NML** NORMAL HEIGHT. This switches off the effect of DOUBLE HEIGHT. All suc-
+ **CTRL** **HT.** ceeding characters appear in normal height in the *top half* of the double height line.
- SHIFT** + **f3** - **SEP** SEPARATE GRAPHICS. This has the effect of making individual 'cells' of the
+ **CTRL** **GR.** patterns appear separated from each other. (The six cells of the graphics unit of the top line are broken up by a SEPARATE GRAPHICS code.)
- SHIFT** + **f4** - **CON** CONTIGUOUS GRAPHICS. This is used to 'switch off' the Separate Graphics
+ **CTRL** **GR.** effect and make the character cells appear joined up again.
- SHIFT** + **f5** - **HLD** HOLD GRAPHICS. When codes are entered, they cause a blank space to+
CTRL **GR.** appear on the screen which can break up a graphic display. HOLD graphics has the effect of making colour and special effects codes take on the appearance of whatever graphic pattern that *immediately precedes them* (if any).
- SHIFT** + **f6** - **RLS** RELEASE GRAPHICS. This is used to 'switch off' the effect of HOLD
+ **CTRL** **GR.** GRAPHICS. Special effects codes again appear as a blank space.
- SHIFT** + **f7** - **CNC** CONCEAL DISPLAY. This code has the effect of making the rest of the line
+ **CTRL** **DSP** invisible or 'concealed'. It is used mainly for setting up Question and Answer sessions or for hiding technical data (sometimes). In the User Search mode, a Reveal key, **R** in this system, 'Reveals' concealed text.
- SHIFT** + **f8** - **BLK** BLACK BACKGROUND. This code is used to 'switch off' the NEW
+ **CTRL** **BG** BACKGROUND code, and thus limits the new background colour to a limited part of the line.
- SHIFT** + **f9** - **NEW** NEW BACKGROUND. This code is used to set a background colour for the
+ **CTRL** **BG** line. It **MUST** be preceded by a colour code to set the colour of the new background, and **MUST** be followed by another colour code to set the foreground colour. **NOTE** that this means that having a coloured background takes up 3 columns at the start of a line before any text begins.

Double Height (**SHIFT** + **CTRL** + **f 1**)

When a double height code is entered, it has the effect of extending the current line *downwards*, making every character that follows it in the current row, twice as deep. Anything in the row below is lost, so you should make sure that it is blank.

All subsequent characters that get typed in will also be double height. If the cursor is in the top half, they will be doubled downward, while if the cursor is in the bottom half, they are doubled upwards.

Characters Preceding Double Height or Following Normal Height

Any characters preceding the double height code will be in normal height, and can only be in the TOP HALF of the line. This is just a function of the way the Viewdata chip works and just has to be accepted. If the cursor is in the bottom half of a double height line prior to the code, characters typed in will only appear in the top half. The same is true of characters following a normal height code.

Knocking Out a Double Height Code

Deleting or overwriting a double height code causes the line to revert to normal height, leaving the bottom half as a blank row.

Editing Functions

Insert and Delete Character (**f 1** and **f 2**) perform their normal functions from either the top or bottom half of a double height line.

Insert Line (**f 3**) acts normally if it is in the top half of a double height line pushing the double height and all subsequent rows down. If it is in the bottom half, it must not split the double height line, and rather than insert two new lines, it creates a new blank line *beneath* the double height line.

Delete Line (**f 4**) deletes the whole of the double height row, pulling all subsequent rows up 2 lines.

When moving text up and down using insert and delete line functions, if the bottom line of the image space happens to hold the TOP half of a double height line, it causes the TAB STOP row or the top of a function key window to disappear. This again is a function of the way the Viewdata chip works.

When it DOESN'T Work

If the cursor is in the row immediately above an existing double height row, trying to enter a double height code has no effect. This is a safety measure as it would otherwise knock out the double height row below. Thus it is necessary to insert a new blank line between the current row and the double height row first.

Bottom Row

On Prestel, it is not possible to enter a double height code on the bottom row as there is no further space for the lower half. On this system, as it has a buffer to hold rows pushed down by the insert line function, this *is* permitted.

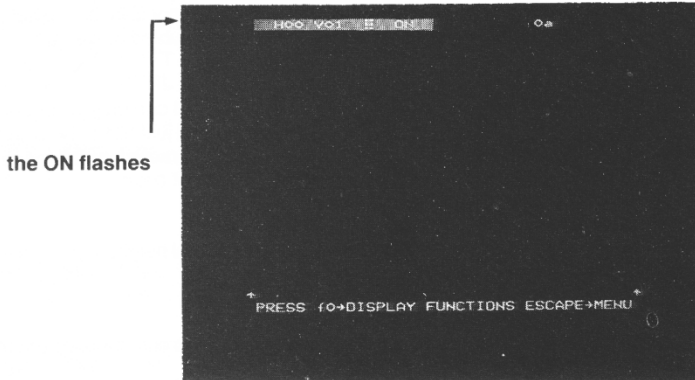
If you attempt to save a frame with the top half of a double height row in the bottom line, the system converts it back to a single height row.

Graphics Mode

TO ENTER GRAPHICS MODE: Hold down **CTRL**, press **f 8**, release **CTRL**.

TO LEAVE GRAPHICS MODE: Press **ESCAPE**.

When you enter this mode, the top and bottom lines change to:



The bottom line is a reminder of three things:

Leaving the Graphics Mode

You must press **ESCAPE** to leave the graphics mode and get back to the ordinary text entry mode.

Copying the Graphics Pattern to the Cursor Position

If you press the **COPY** key when you are in the graphics mode, whatever pattern is displayed in the top line will be PUT at the current cursor position. Holding it down causes the pattern to be auto-repeated.

Setting Up a Graphics Pattern

A graphics character, which occupies the same space as a letter or a number on the screen, is a rectangular unit made up of 6 cells.



There is an image of this pattern on the top line. Each of these cells can be switched on or off to compose (64) different basic patterns.

The left hand six keys on the keyboard:

QW
AS
ZX

each correspond to one of the cells. Pressing **Q** will switch off the top left hand cell — or switch it on, if it is off. Repeatedly pressing **Q** will alternately SET and UNSET the cell. The same applies to the other five.

The Keyboard

The rest of the numbers and letter keys are disabled in this mode.

The cursor keys, **DELETE** and **RETURN** keys, the function keys, with or without **SHIFT** and **CTRL**, the **TAB** key and the **SPACE BAR** all still work normally. The space bar is often found useful as a 'forward delete' key in the graphics mode.

It is quite easy, using the left hand for the QW, AS, ZX keys, and the right hand for the cursors, **RETURN**, and **COPY** keys, to learn to 'touch type' in this mode, making it a quick and convenient way of entering graphics.

Graphics Colour Codes First

Before entering any graphics patterns, it is absolutely essential to put in a graphics colour code (**CTRL + f1 - f7**) FIRST, and to the LEFT of where the Graphics patterns are going to go.

If you do not, either nothing will be displayed, or if a TEXT colour code has been pressed or is present earlier in the line, it will be displayed as a character instead of a graphics pattern. So, when working in graphics mode, to start with:

1. Display the graphics function key window:

CTRL + f0

2. Select the colour you want then press

CTRL + selected function key.

3. Set up the graphics pattern you want using

QW
AS
ZX

4. Position the cursor IN THE SAME LINE AS THE COLOUR CODE
5. Press the **COPY** key.

You can repeat steps 3 to 5 as often as necessary.

You can change the colour in a line by pressing

CTRL + selected function key.

All subsequent graphics patterns will be displayed in the new colour. Notice also that the colour code creates a gap in the display. (See how to hide this gap under the HOLD GRAPHICS code.)

A pattern has to be built up line by line. Each new line will need a colour code put in before the first graphics pattern is entered.

3. The Hey Presto Editor

Special Effects Codes

Four of the special effects codes relate specifically to graphics.

These are the two pairs:

SEPARATE GRAPHICS	SHIFT + CTRL + f 3
CONTINGUOUS GRAPHICS	SHIFT + CTRL + f 4
and	
HOLD GRAPHICS	SHIFT + CTRL + f 5
RELEASE GRAPHICS	SHIFT + CTRL + f 6

The second of each pair switches off the effect of the first.

SEPARATE GRAPHICS

When this code is entered, the individual cells of the graphics patterns are displayed separately (as in the pattern on the top line).

CONTIGUOUS GRAPHICS

is used to switch off the SEPARATE GRAPHICS effect and make the patterns following it appear with the individual cells joined up.

HOLD GRAPHICS

When you enter colour codes or special effects codes, they occupy a space on the screen. This breaks up the appearance of the display and the HOLD GRAPHICS code is used to overcome this. It does so in a special way. When the HOLD GRAPHICS code is entered on a line any *colour codes or special codes* following it instead of being blank, take on whatever graphic pattern is in the character space, IMMEDIATELY TO THEIR LEFT IN THE LINE.

The HOLD GRAPHICS code itself, when entered also takes on the pattern of whatever is displayed immediately to the left of it.

RELEASE GRAPHICS

Entering the RELEASE GRAPHICS code has the effect of switching off the HOLD GRAPHICS CODE for the rest of the line. The colour codes and special effects codes thereafter appear again as blank spaces.

Tutorial Guide

The Tutorial Guide covers the use of Viewdata mosaic graphics in detail and should be referred to in order to make full use of these facilities.

Search Mode

This is a particularly useful facility for 'proof-reading' a Viewdata base once the frames have been created. It enables you to use the routing that has been created to rapidly step through the frames, and at the same time check the integrity of the database (ie that the routeings take you to where the frame says it should, that the frames are there, etc).

On pressing **f 8**, the top of the screen changes to:

Search Mode 0a

To start with, 'Search Mode' is flashing to remind you if **f 8** was hit by mistake. It stops flashing after the first frame has been called in.

f0 → edit # → nxt frame * # → go back ESCAPE → MENU

appears at the foot of the screen.

At this point you can no longer enter text or modify the frame, but instead, you are able to search through the database in the normal manner.

Differences from the SEARCH program

1. It is slower retrieving frames,
2. but faster displaying them.
3. Frames are not 'interrupted' by pressing a second key.
4. The cursor and copy key alternatives are not supported.

Reveal and Conceal

R acts as the Reveal key, revealing text hidden by the conceal code. If there is more than one conceal code they have to be revealed by repeated pressing of the reveal key.

It is important to note that it works by replacing the Conceal code with a Space code. On returning to the edit mode to make any changes to the frame or its routing, care must be taken to put any conceal codes back in BEFORE the frame is re-saved on the filing system.

Correcting an Error in the Image

If an error is spotted, or a modification is to be made to the image, pressing **f 0** puts you immediately back into the Edit Mode, and you can make alterations to the current frame displayed. The frame must then be re-saved from the menu.

Correcting an Error in a Frame's Routing

If, while checking a database, you find that a choice takes you to the WRONG page,

1. Enter *** #** to take you back to the frame with the incorrect routing.
2. Press **ESCAPE** to take you directly to the menu.
3. Select **SET UP PAGES ROUTEING**
4. Make the correction, and press **RETURN**
5. Press **ESCAPE** to return to the menu.
6. Select **SAVE THE CURRENT PAGE**, pressing **COPY** to overwrite.

Continuing with the Checking

After making any corrections and saving the frame, to continue:

1. Select **RETURN TO CURRENT EDIT**
2. Press **f 8** to return to the Search Mode.
3. Continue checking from the current, corrected frame.

CHAPTER 4 CAROUSEL AUTOMATIC DISPLAY

Introduction

The Carousel provides for automatic display of a sequence of Viewdata Pages. It takes its name from the circular slide projector, and displays its frames in a cycle.

Its use is mainly for providing information in public places such as shop windows, exhibitions, foyers, waiting rooms, stations etc.

Setting the Carousel Going

First, boot the system menu (see Chapter 1). Double disk drive users must then place the Viewdatabase disk holding the Carousel frames in drive 1.

Select the option AUTOMATIC CAROUSEL DISPLAY and press **RETURN**.

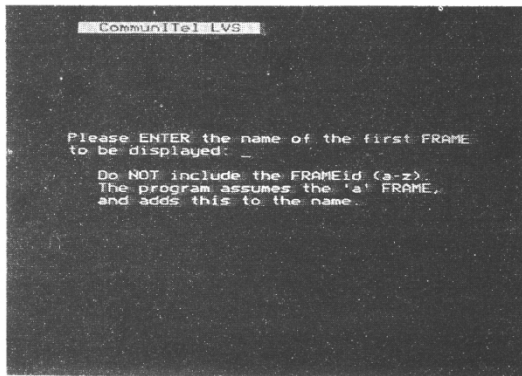
Single disk drive users will now be prompted to replace the System disk with the Viewdatabase disk, and press **RETURN** again.

As with the SEARCH program, the system checks for a random access Viewdatabase file, and if it finds one, the message:

Please wait a moment

comes up on the screen. It then loads the entire 4k catalogue for the file to speed up all subsequent searches.

When ready, the screen then changes to:



The Carousel will now start loading in the pages and displaying them for their preset time lengths.

Pressing the **SPACE** bar causes the time delay to be overridden, and the next Page displayed.

Stopping the Carousel

If the Carousel has been set up correctly, it will carry on displaying indefinitely. To stop it, and recall the System Menu, make sure the System disk is in Drive 0, and press the **ESCAPE** key.

Then press **RETURN** to reboot the System Menu.

Single disk drive users will be prompted to replace the Viewdata base disk with the System disk and press **RETURN**.

Creating a Carousel

Creating the Carousel displays is done using the Viewdata Editor, and you are referred to that section on how to use this.

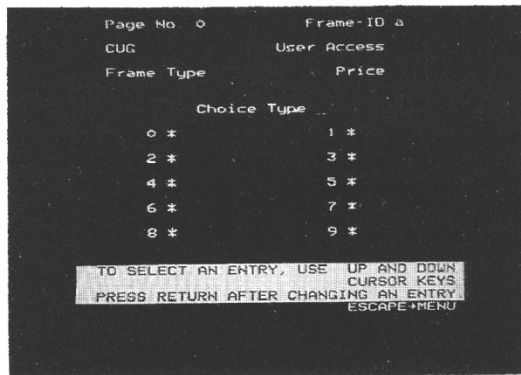
The Carousel works by automatically 'pressing 9' after the current Frame's time is up. It then fetches in the page that the current one has been set to call up when 9 is pressed. Telling a Frame what Page to go to when a number is pressed is called 'Routeing'. this too is done in the Viewdata Editor, and the method of setting up the links or 'Routeing' from one Frame to up to 10 other Pages is explained in the section SETTING UP ROUTEING in the Editor chapter.

The method of using this to set up a Carousel is outlined here.

After creating the display for the Frame in the Editor, it is necessary to tell it the name of the Page that is to follow it, which is the same as telling it where to go when 9 is pressed. To do this, return to the Editor's Main Menu by pressing **ESCAPE**, and select the option:

SET UP PAGE'S ROUTEING

The following is then displayed on the screen:



This holds, and allows you to alter various pieces of information that are always stored with every Frame. You may find it helpful to think of it as the back of the displayed Frame.

For the purposes of setting up a Carousel, you need to enter only two pieces of information, the name of the Page that is to follow on from the present one, and the Time the present Frame is to be displayed for.

Entering the Next Frame

To enter the next frame, use the DOWN CURSOR key until the cursor gets to the bottom right hand entry point, 9. (If you go past it, and it wraps around to the top of the screen, use the UP CURSOR key to step back and it will wrap back down.)

You then type in against the 9, the name of the Page which is to follow on from the present one, and press **RETURN**.

DON'T type in the Frame-ID (a-z), as you can only ever jump directly to the first Frame of a Page and the Viewdata system always adds the 'a' on for you. See the section on Pages and Frames in the SEARCHING A VIEWDATA BASE chapter if you are not sure of the difference. If you typed in 513a, the system would go looking for a page 513aa and fail to find it. So only type in the Page.name part, which in this example would be 513.

Entering the Time

After pressing **RETURN**, the cursor wraps around to the CUG field at the top left of the screen. CUG stands for Closed User Group, and is only used by Information Providers who are using the system to prepare Pages for PRESTEL. The Carousel has therefore 'borrowed' this space to hold the TIME that the current Page is to be displayed for. It is stored in 1/100ths of a second, so if it is to be displayed for 8 seconds enter 800, for 15 seconds, enter 1500 etc. After pressing **RETURN**, you have finished. The cursor moves on to the User Access field, and at this point, press the **ESCAPE** key to return to the Editor main menu.

Saving the Frame

It is then necessary to SAVE the Frame, using the option:

SAVE THE CURRENT PAGE

Note that both the display and the 'Routeing' information are stored together, so that if you need to change either of them, the whole Frame must be RESAVED to update the copy on the disk.

Setting up a Complete Cycle

The steps of setting up the follow on Page and the timing, is repeated for each of the Pages to be used in the Carousel. When you get to the last Page however, you must set the link up so that it follows on to the first page. In this way, the Pages and their routeings form a circle, and you can start it up from any point in the cycle.

Adding a Page to the Cycle

Supposing a part of the cycle consists of the Pages: → 511a → 513a → 517a → etc and that a new Page, 515a has been created and needs to be added between 513a and 517a. At the moment, 513a's Choice 9 route points to 517a.

The first step would be to set the new Page 515a's Choice 9 to point to 517a. Assuming that 515a is already in the Editor, then from the Editor's menu, select the option:

SET UP PAGE'S ROUTEING

When the routeing section is displayed, go down to Choice 9, enter 517 and press **RETURN**. Enter 515a's timing, press **RETURN** and then press **ESCAPE** to return to the Editor's main menu. Then SAVE the Page.

The next step is to LOAD 513a, go into the Routeing option, and move down to Choice 9 which is displaying 517. This is now changed to 515 and **RETURN** pressed. You then **ESCAPE** back to the Editor's menu, and then reSAVE 513a.

Removing a Page from a Cycle

This is even simpler. To cut out 513a, LOAD the one before it, 511a in the example, go into the Routeing section, down to Choice 9, and change it from 513 to 515, (or to 517 if you want to cut out both 513a AND 515a). You then reSAVE 511a. As far as the Carousel is concerned it is now ready to go, but you may wish to remove 513a (and 515a). This can be done either by copying it to another disk first and then deleting it, or simply deleting it if it is no longer needed.

Carousel on the Network

When run on the Econet level 2 system, the Carousel becomes a very flexible public information tool. It is possible to have a large number of different machines displaying either the same Carousel in different locations, and/or more completely different Carousels.

Displaying the Same Carousel on Different Machines

Assume the Viewdata system has been installed on the network (see Chapter 9), and that a Carousel has been created in the directory of a user called, for the sake of illustration, DISPLAY1. Then, on each machine that is to display the Carousel, take the following steps:

1. Log the machine onto the network:

```
*I AM DISPLAY1
```

More than one station can be logged on using the same ID

2. Boot the Viewdata system menu:

```
*VMENU
```

(This may be followed by an optional name, see Chapter 1.)

3. Select the option

```
CAROUSEL AUTOMATIC DISPLAY
```

and press **RETURN**.

4. Start off the Carousel by entering the first frame.

In theory, up to 250 machines could all be displaying the same carousel. However there may be delays in frame fetching — particularly if the display duration for each frame is short. For large numbers of machines, a Winchester file server, which locates and dispatches information far more quickly, is definitely recommended!

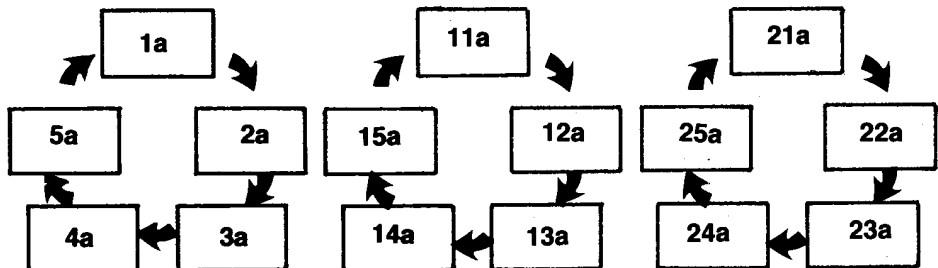
Displaying Different Carousels on Different Machines

There are several ways of doing this. The simplest would be to create each Carousel under a different User-ID (eg DISPLAY1, DISPLAY2, DISPLAY3, etc). Each machine would then be set up as above, except that they would log on in step 1 with:

```
*I AM DISPLAY1  
*I AM DISPLAY2  
*I AM DISPLAY3
```

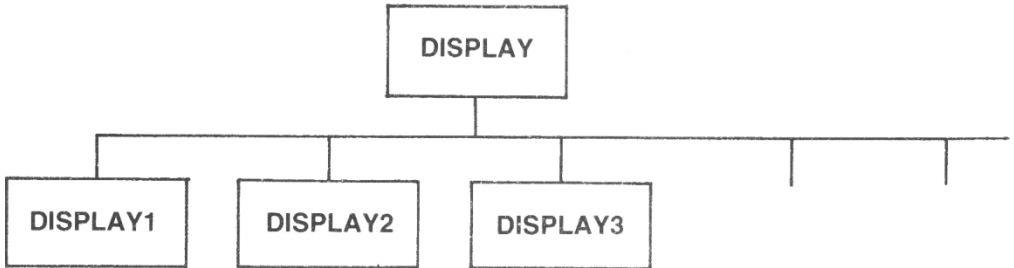
as appropriate.

A second way would be to have several cycles of frames, each cycle being completely separate, in the same User Directory:



Each machine would then be logged on as for displaying the same carousel, but when prompted to enter the first frame, as in step 4 above, the first frame of each separate cycle would be entered. Thus in the example above, the first machine might start with frame 1(a), the second machine with page 11, and the third with 21.

Yet another way would be to have the carousels created in sub-directories belonging to a single user. Thus if there is a user called 'DISPLAY', each Carousel would be held in a separate sub-directory under DISPLAY.

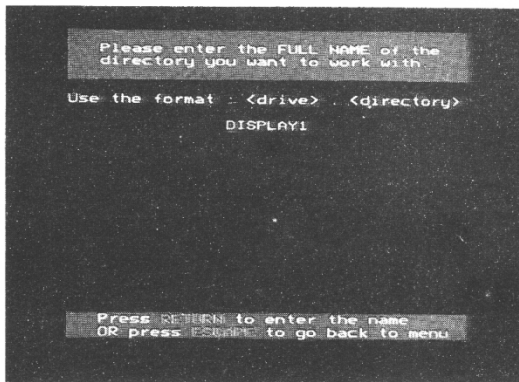


Each machine would then be logged on using:

```
*I AM DISPLAY
```

When selecting the CAROUSEL option off the main system menu, as in step 3 above, to select the appropriate sub-directory, under DISPLAY, hold down **SHIFT** and press **RETURN**.

If the default directory is set as DISPLAY, then the following screen will appear:



Use the cursor forward key to bring the cursor to the end of DISPLAY and the '1', '2', or '3' as appropriate.

You will then be set into that sub-directory when the Carousel program starts. Then type in the first frame for each.

Remotely starting Carousels

If the machines that are to display the Carousels are dispersed about a site, or placed inaccessibly so as not to be disturbed by the public, it is possible to sit at one BBC micro to be used as the 'control console' and remotely start the others off.

To do this you need to know the Econet station number of each machine, and they must all be switched on and connected to the network.

If one of the machines has station number 205, then after logging on with your machine in the usual manner, enter:

***REMOTE 205**

Everything you then type at your keyboard will be as if typed at station 205, and everything on your screen will be what is appearing on 205's screen. To start 205 as a Carousel, you type in the same sequence of commands you would if sitting at that station.

When you have started it rolling, press **BREAK** on your keyboard to disconnect yourself.

Repeat this for each of the other stations that are to be set up.

Dynamically Modifying a Carousel while it is Running

Another advantage of this system's Carousel running under Econet is that it is possible to change the content of a frame, or even change the whole sequence, without having to do anything to the machine(s) running the displays. This is because the machines are all sharing the file server and drawing the content of their displays from it. Thus it is only necessary to modify the Carousel on the file server for the changes to be picked up by the machine(s) displaying it.

To do this from another BBC micro on the network, log on as the Carousel user, boot the system menu and this time, select the Editor program, making sure you are in the directory holding the Carousel. From the editor, the following activities indicate the sort of control that can be exercised.

Modifying a Frame

To update the information on a frame in the Carousel is simple:

1. Load the frame.
2. Modify the image.
3. Re-save the frame.

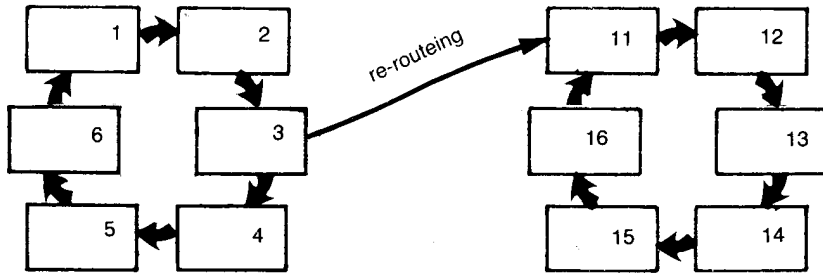
The next time that the frame is displayed by the machine(s) running the Carousel, the new information will be displayed.

Adding or Removing a Frame from the Cycle

This then done in exactly the same way as outlined in the earlier section of this chapter.

Adding or Removing Complete Sections

This is an extension of the last. The following is an illustration of how to change the whole sequence.



Suppose the sequence 1-6 is being displayed as a cycle, and the alternate sequence 11-16 has also been set up. By loading a frame from the current cycle, 3a in this example, changing its route 9 to point to a frame in the other cycle, 11a in this example, and then re-saving 3a, then the net result is that the next time the Carousel loads frame 3a, it picks up the new frame 11a as the next one and continues in the new cycle of frames.

There are many variations on this. Frame 16, instead of pointing to 11a, could have been made to point to 1a, in which case the cycle would have become:

3, 11, 12, 13, 14, 15, 16, 1, 2, back to 3 and so on.

In this way, from the original cycle 1-6, frames 4-6 have been cut out, while frames 11-16 have been put in their place.

Thus it can be seen that a single station can effectively control a dynamic and distributed information system.

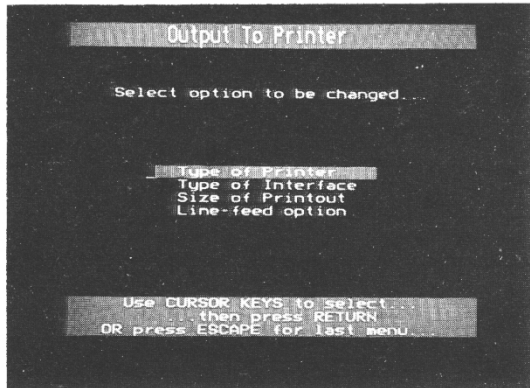
CHAPTER 5 USING PRINTERS

Configuring for Your Printer Introduction

In Chapter 1 we described how to re-configure the Viewdata system using the System Menu option provided for the purpose. However, at that point, the "Output to Printer" sub-option was postponed.

This chapter deals with how to set up the system to suit your printer, describes how to use the 'PRINT VIEWDATA FRAMES' program (referred to henceforth simply as 'the frame printer').

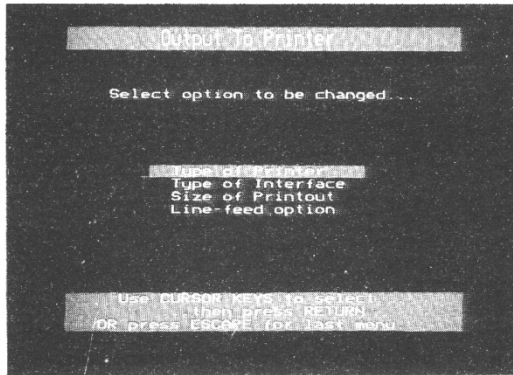
Referring to Chapter 1, we will now assume that the System Menu has been booted up, the 'RE-CONFIGURE THE SYSTEM' option has been chosen, and the 'OUTPUT TO PRINTER' sub-option has been selected. In other words, the following menu should now be displayed on the screen:



We will now deal with each of these options in turn, but the reader should NOTE that, during the description that follows, reference may need to be made to page 94 of this chapter — and quite possibly the appropriate printer manual — in order to ensure that the correct settings are entered for the particular type of printer to be used.

Choosing the Printer Type

On selecting 'TYPE OF PRINTER' from the 'Output to Printer' menu, the following menu will be displayed on the screen:



If your printer is one of the types listed, simply select the appropriate option, press return and continue.

If your printer is NOT listed, do not despair(!), as it is quite possible that one of the listed printer types IS suitable for your printer. If unsure at this point, it will be necessary to consult section 2, and if you draw a blank having done so, choose the 'ASCII ONLY' setting for the moment at least.

Also, see the section below entitled "Using a Screen Dump ROM" for details of how this software can support many more printers.

(Internally, and transparently to the user, the software will be setting up various parameters, concerned with printer interface characteristics and printout formatting permutations, which will be stored in the system SETTINGS file for later use by the frame printer software and other programs. The software has no real 'knowledge' of your printer, merely a collection of flags and data bytes, so it can be fooled into supporting unlisted printers by careful use of the menus provided.)

Colour Choice on the Integrex Printer

If the printer type 'Integrex Colourjet' is chosen, a further choice is offered BEFORE the user is returned to the previous menu. A menu offering 'Normal Colours' or 'Reverse Colours' is shown, and the usual selection procedure is then followed. Note that in this context the term 'normal colours' means effectively 'as displayed on the screen', whereas 'reverse colours' means swapping the black screen for a white-background printout, etc.

If this type of printer is already selected, then it must effectively be RE-selected from the "Printer Type" menu in order to get at this colour-choice menu, if the user wishes to change the colour scheme. Finally, as described later in this chapter, when using the Integrex in serial mode, the colour choice is necessarily ignored (it is controlled by hardware switches instead).

Using a Screen Dump ROM

There are a growing number of reasonably priced ROMs now on the market which allow accurate screen copies to be dumped to a wide variety of printers. They plug into one of the sideways ROM sockets inside the BBC micro, and give the user the ability to copy any screen to the printer by issuing a simple operating system '*' command. Examples are the 'Printmaster' ROM available from Computer Concepts and the 'Epson Dump' and 'Dumpout 2' ROMs from Watford Electronics.

In addition to having a collection of routines dedicated to "driving" particular printers, the frame printer software provides a "hook" which enables such screen dump ROMs to be used easily and flexibly. Therefore the system allows many more printers to be used, and improved printing facilities obtained, if one is installed.

If you have such a ROM installed in your computer, it can be activated from the frame printer software IF THE 'PRINTER TYPE' SETTING IS SET TO 'ASCII ONLY'. Make this choice now, and on page 99 of this chapter we will describe how to activate the ROM from the frame printer menu.

Selecting the Correct Interface

Having selected the printer type, choose the option called 'TYPE OF INTERFACE' from the 'Output to Printer' Menu. Each of the four possibilities is described in the next four sub-sections, so consult the appropriate one and then move on

Parallel Interface

The parallel printer interface is the most common way to connect the printer to the BBC microcomputer, and it is the one used when a printer is plugged in to the computer via the connector labelled 'Printer' on the underside of the case. If you have — or are about to have — a parallel printer connected up, then simply select this option from the 'Type of Interface' menu in the normal way and you will be returned to the last menu.

Serial Interface

If your printer is connected — or is about to be connected — to your micro via the socket labelled 'RS423' on the rear of the case (ie it is a serial printer), then this is the section for you. Whilst less commonly used on the BBC computer, a serial printer (or a printer with both parallel and serial interfaces) may be more desirable to use with this suite of software. There may be an advantage due to increased speed and extra facilities.

NOTE, however, that Level 2 users with serial printers will unfortunately have the bind of swapping their modem RS423 connection with their printer RS423 connection, and obviously will not be able to use a serial printer at the same time as using their modem for the Terminal or Host software.

If you have a serial-only printer, select this from the menu in the normal way and you will notice that two further decisions have to be made before you are allowed back to the last menu.

The software allows the serial interface to be configured for any of the RS423 baud rates and data word forms supported by the BBC computer's operating system, so a menu for each of these is presented next.

Setting Baud Rates

Consult your printer manual (and page 93) to find out at what baud rate it is expecting data to be sent from the computer: some printers allow a choice of baud rate to be set with hardware switches, so it is up to you to make this choice and ensure that it is matched in software at the micro's end. If the printer's baud rate is SOFTWARE selectable, then you should let it assume its default value and match that value at the micro's end, because the software does not support this facility.

Setting Word Format

Similarly, you will probably need to look up the serial word format (ie number of data bits, stop bits and odd, even or no parity bits) that your printer is expecting from the micro. NOTE, however, that the BBC computer's default setting should suit most serial printers supplied for use on this micro. The default setting is 8 data bits, 1 stop bit, no parity; additionally, 1 start bit is ALWAYS sent.

In case of emergency, a 'trial and error' approach to deciding on the serial configuration is not always out of the question, symptoms of wrong choices being spurious characters, alarm signals, or no action whatsoever, from the printer! However, we hope that you will NOT find this potentially long-winded process necessary, and instead that you have been able to set up the serial configuration successfully, and are therefore ready to turn to page 91

User Printer Handler

The BBC computer's operating system allows machine code programmers with a detailed knowledge of interfacing techniques to have the machine's printer output diverted to their own handling routine, if they have decided that the built in parallel, serial or Econet interface routines are not suitable. This facility is supported by the Viewdata System software.

Readers who wish to make use of this are referred to the BBC Micro User Guide and the Advanced User Guide for information as to the rules to be obeyed when designing such a routine, and are urged to take careful note of the warning below. As far as the Viewdata System is concerned, there are necessarily some additional 'rules'

Firstly, any user printer handler routine must already have been written and tested before this 'interface type' is set up in the software. Secondly, it must have been saved as a machine code file called 'USERPH' in the same disk or Econet directory as the Viewdata System software. Thirdly, its call address, in decimal, must be known, and furthermore this must be the same as its load address.

If you are confident that you have followed this procedure correctly, select 'USER PRINTER HANDLER' from the 'Interface Type' menu, and then follow the instructions displayed on the screen in respect of entering the call address. This address will be stored in the SETTING file and written to the 'user print vector' (memory locations &222 and &223) whenever the Viewdata System software performs the setting up of the printer interface.

The printer interface is set up on exit from the 'Re-Configure the System' menu to the System Menu, AND each time the System Menu program starts up, AND each time the 'frame printer' program starts up. If, on any of these occasions, 'user printer handler' has been selected whilst no 'USERPH' file exists in the system directory, an error will be generated ('User printer handler file not found').

If however the file is present, it will be loaded into memory at the load/call address already specified. Also, the operating system command *FX5,3 will be executed automatically to bring the routine into effect as the current printer driver. This is the point at which our urgent warning becomes particularly important

WARNING: THIS FACILITY SHOULD ONLY BE USED BY USERS WITH PREVIOUS EXPERIENCE OF WRITING THEIR OWN PRINTER HANDLER. If a handler that has not been tried and tested previously is called into effect in the manner described above, your BBC computer may 'hang' completely, resulting in the need to reboot the system from the start. Furthermore, if the SETTINGS have been saved with 'User Printer Handler' stored as the printer interface setting, then the same 'hang up' may well occur next time the system is booted up. The only way around this is to re-create your SETTING file by copying your backup copy onto it.

Finally: where can a 'user printer handler' routine "live" in memory? The RS423/cassette buffer areas at &A00 and &B00 could be used, although these are obviously out of the question for Level 2 users at the same time as their modem is in use. The area starting at &C00 (user defined character definitions) is a possibility, as the Viewdata System does not use this area otherwise. Econet users could make use of some of the 'Econet transient RAM' area in page &E used for library routines (see the Acorn technical documentation for the rules to be obeyed for using this area). Finally, users whose BBC micro has the value of PAGE less than &1B00 after pressing **BREAK** could increase PAGE to &1B00 before starting up the system, and locate their printer routine below this.

ANOTHER WARNING (!): The current release of the Viewdata System makes use of zero page location &80 and &8D to &8F, so these must be avoided, and furthermore CommuniTel cannot guarantee that the memory allocation noted above will remain the same in future releases of the system.

Econet Printer Server

The final type of printer interface that can be selected is for Econet users who already have the use of a station on the network which acts as a printer server station. This facility is documented in the Acorn Econet Printer Server Manager's Guide, and also described further on page 97 in this chapter.

Note that if you are using the Viewdata System on an Econet you may still use a 'local' printer by selecting one of the interface options already described. Similarly, if you are using the Viewdata System on a DFS machine which also has an Econet interface, then — provided that you are at least CONNECTED TO the Econet, and a clock signal is present — you can still use an Econet printer server if one is set up: it is not necessary to be logged in to the network to do this.

There may be any number of printer servers on your Econet, at any station number, although — by default — Econet users normally assume there is ONE only, at station number 235. The configuration software, however, allows you to override this assumption. Therefore, if this option is selected from the 'Type of Interface' menu, you are then asked to specify the Econet station number where the printer server you wish to use is located. Follow the on-screen instructions, then you will be returned to the last menu and can continue.

Having informed the Viewdata System software of the required printer server station number, whenever the system sets up the printer interface (see the last section if you need to know when this occurs, and note that in this case the equivalent of *FX5,4 is performed automatically for you on these occasions), then the equivalent of *PS n is automatically executed for you. (The '*PS n' command is documented in the Printer Server Guide.) Subsequently, if errors such as 'Not Listening' or 'No Reply' are reported by the software when trying to print, you should consult the Printer Server Guide for the corrective action needed.

Please note that some printer configurations supported by the Viewdata System software are NOT fully supported by versions of the NFS chip (or DNFS chip) prior to version 3.40. See page 97 for further information.

Size of Printout

If the option 'SIZE OF PRINTOUT' is selected from the 'Output to Printer' menu, a choice between normal size and double size is offered. This option refers only to the size of Viewdata frames and/or routing images printed out by the 'Frame Printer' program (described later in this chapter).

Decide which size you want, and make your selection in the usual way. But NOTE that not all printers allow a choice to be made, in which case this setting will actually be ignored.

You will NOT be given an error message in such a situation, and if you have selected 'double size', the only way to find out whether the system ignores this or not is either to try it out and see, or to study the part of the 'Introduction to the Frame Printer Software' relevant to your printer.

Once this choice is made, the user is again returned to the 'Output to Printer' menu, on which there is one final option yet to be described.

To Line Feed or Not to Line Feed?

It is usually EXTREMELY IMPORTANT to make the correct choice from the menu you see when selecting the 'Line-Feed' option. If the correct choice is not made, the printing facilities provided by the Viewdata System may malfunction, or not function at all. Unfortunately, it is not always easy to make this decision without resorting to the 'trial and error' approach described in the Tutorial Guide.

Pages 94 to 97 provide a good deal of help with this decision, depending on the particular printer you are using. But if this does not apply in your case you need to consult your printer manual and consider the following questions.

Does the printer automatically perform a 'line-feed' every time it is sent a 'carriage return'? If so, you need to select 'NO Line-Feeds sent' from the menu that you have in front of you. Otherwise, when the BBC computer sends 'carriage return, line-feed', your printout will probably have double-spaced lines, because it performs its own 'line-feed' in response to the 'carriage return' in addition to the 'line-feed' sent separately.

Conversely, if the printer does NOT do automatic 'line-feeds' on receiving 'carriage return' you should select 'Line-feeds sent'. Otherwise, you may get a printout with NO line-spacing, ie: lines over-typed many times.

Does the printer have hardware switches (often called 'DIP switches') so that it can be set up to act in either of the two modes just described? If so, you could check the state of the switches and set up the software end accordingly, or change the switches to suit the software end. Note that it may not always be possible to decide this on a purely arbitrary, toss-of-a-coin, basis, because some printers have OTHER characteristics which can be affected by the hardware 'line-feed' setting chosen, as described in some cases in the 'Introduction to the Frame Printer Software'.

As a footnote for the curious, the printer setting selected using this menu causes — when the interface is set up as described previously — the system command *FX6,0 to be executed automatically for the 'Send line-feeds' option, or the command *FX6, 10 for the 'Don't send line-feeds' option.

Assuming that you are now in a position to make your selection, select the desired option in the normal way and you will be returned to the 'Output to Printer' menu. We have now considered all of the options shown on this menu and can save our printer settings.

Saving the Printer Settings

Assuming that we are now back to the 'Output to Printer' menu and do not wish to change the printer settings any further, pressing **ESCAPE** takes us back to the last menu, ie: 'Re-configure the System'. This has already been described in Chapter 1, along with the procedure for saving the system's settings.

The printer settings are automatically saved, along with the other settings described in Chapter 1, when the user **ESCAPE**s back to the System Menu, if any changes have been made to ANY settings (printer settings or otherwise).

However, as described earlier in THIS chapter, as soon as this **ESCAPE** is made, the printer interface is set up automatically, ie: all the relevant operating system calls are made to bring into effect the interface type, etc, just selected.

This means that disk users may decide to avoid saving any changes just made, whilst retaining their effect for the remainder of their current session. Therefore if a particular user requires an unusual printer configuration s/he can have it — in MOST cases — without overwriting the SETTING file to the annoyance of other users sharing the same system disk.

The exception to this is in the event of using the frame printer program, because this program re-loads the SETTING file, and therefore if that file is not up to date the frame printer will start up with the old settings reinstated. (This is because the frame printer requires certain data from the SETTING file that other programs have no interest in.) However, the solution to this has already been described in the section in Chapter 1 entitled "Personalised System Configuration".

Note that if the user decides at any point to return to the 'Output to Printer' sub-menu, or ITS sub-menus, any subset of the printer configuration data may be changed on its own, without affecting the rest. Furthermore, the menu selection bar will always place itself over the last-selected option on any menu, so that the user can check what the most recent change made was, the the hierarchy of menus can be traversed in any direction at will before the user finalises the overall configuration required.

INTRODUCTION TO THE 'FRAME PRINTER' SOFTWARE

Having described generally in the last section how to set up the system to suit your printer, this section will provide information on the requirements of a range of specific printers supported by the system, in the context of the main application of printers in the suite, the frame printer program. Before doing this it is useful to outline briefly the main features of this program.

The Facilities Available

The frame printer has two main sections which are selectable from its front menu (see the photograph and description in the Tutorial Guide and on pp 98-102 of this chapter, which provide further information on how to use the program).

On selecting either section, the user with printer type 'ASCII only' selected may bring any screen dump ROM installed in the computer into effect from this menu, and may return to the menu at any point to disable to re-enable it.

The 'Print Single Frames' section allows the user to preview and/or print out any frame (or its routing information) stored in her/his database one at a time. A choice can be made between printing the frame only, the 'back page' routing information only, or both together.

The 'Print Multiple Frames' section allows the user to create a list of up to 20 frames stored on the database, and leave these printing out unattended. Before doing so, a three-way choice between the frame itself, its routing, or both, can again be made. The frame list may be inspected and/or added to before repeating the process or doing other jobs, and the list can be used to print multiple copies of the same frame. Furthermore, the list can be given a name and saved to disk for use later, and other named lists may be loaded into memory for similar treatment.

During title entry, the user may request a screen or hardcopy listing of the currently-selected database catalogue. The user may also switch at will between all of the modes just described, so that for example one frame could itself be printed or previewed followed by another frame's routing only. This also means that — by careful traversal of the menu hierarchy — frames or routing can be previewed using the 'Single Frames' option before re-entering the 'Multiple Frames' option to add titles to the current frame list.

If the user has selected the single-size printouts setting, a frame or routing image printed on its own will normally be placed in the centre of the printer paper. Where routing is printed at the same time as a frame, the routing image is printed immediately alongside the frame itself, if the printer type and size options allow. For improved legibility of printouts, in most cases the software prints a border around the images, and in all cases the IP heading, frame title/ID and price information is printed.

Various documentary banners are printed out automatically to aid the user, and printout of any image can be aborted during output if desired, by pressing **ESCAPE**. Page throws are sent to the printer where appropriate, to avoid splitting images over page boundaries.

Graphics characters, Viewdata colour and other display attribute codes, and relevant character swaps, are automatically organised where possible, although this depends on the capabilities of the various specific printers supported by the system. In the case of the 'ASCII only' printer type setting, it is assumed that none of these features are supported by the connected printer, and therefore graphics characters are replaced with asterisks and all other non-ASCII codes are filtered from the output before printing.

However, if the screen dump ROM facility is enabled, most if not all Viewdata features are supported, but of course this depends on how the ROM's firmware has been implemented by the manufacturer of the particular ROM you are using.

Notes on Particular Printers

This section provides information on the characteristics of the various specific printer types listed in the 'Types of Printer' menu described earlier in this chapter, as they relate to the functions of the frame printer software just outlined. Study one of the following sub-sections according to the printer you are using, but if yours is NOT listed, remember that one of the settings may in fact suit it nevertheless, or — failing that — you can use the 'ASCII only' setting.

Integrex Colour jet

The Integrex Colour jet 132 provides by far the most sophisticated set of facilities of all the printers supported in this package, as it supports all Viewdata codes, and accurately prints frames and routing images in full colour. The software settings for 'size of printout' and normal or reverse colours cause the relevant codes to be sent to the printer automatically upon initialisation (ie: when the frame printer program is run).

The user should ENSURE THAT THE SETTING 'LINE FEEDS SENT' IS CHOSEN from the line-feeds sub-menu described earlier: printing will function if this is not the case, but the automatic printout formatting will be degraded, resulting in a messy hard-copy.

Normal size screen images appear centred on the page, without borders, in the case of this printer, and if the 'print frame + routing' option is selected within the frame printer program, the routing image always appears underneath (not alongside) the frame image. Double size images fill the width of the printer's paper. Double-strike printing is always selected from the frame printer software, although at the time of writing the printer actually disallows this when double size images are printed, and prints in single-strike mode instead.

Serial Integrex Colour jet

This sub-section is ONLY for users of the Integrex Colour jet installed with the optional buffered RS232 plus Viewdata interface. Unlike the Centronics-only version, this allows the frame printer software to place single-size images side by side on the paper, resulting in less waste of the special paper required. Other improvements in printout formatting are also made, but on the other hand, catalogue listings can be degraded due to limited buffer size in the printer.

The baud rate software setting must be at 1200 baud, and the rotary switch on the front panel (or equivalent DIP switches) must be set to one of the numbered positions, not lettered positions. These switches also control the size and colour of the printout, so the equivalent software settings will be ignored in this mode. Please see the printer manual for other setting-up 'rules' and precautions. Page 102 describes the use of this special option.

Epson Programmable Printers

The second printer shown on the 'Printer Type' menu is labelled 'Epson FX80', but this software selection should allow the frame printer software to "drive" other Epson printers too, provided that they are capable of receiving "downloaded character set" redefinitions. (The codes needed to give such printers graphics character handling capabilities are automatically sent to the printer by the software on initialisation).

The software does NOT require the printer to be capable of performing reverse line-feeds. The software assumes that the printer connected has a carriage of the standard 80 column size; if it is larger it should function correctly, except that the printout format will only span the same 80 columns.

The Epson user should check the setting of the hardware 'DIP' switches inside the printer before starting up the Viewdata System. For correct operation, IT IS VITAL TO ENSURE THAT TWO DIP SWITCHES IN PARTICULAR ARE SET CORRECTLY. For the moment let us assume that you are using a suitable Epson printer with a PARALLEL interface only. The DIP switch which enables input buffering must be switched OFF, as downloading of characters is Disabled otherwise.

5. Using Printers

Similarly, the DIP switch which causes a 'line-feed' to be executed whenever a 'carriage return' is received must be switched ON (for the same reason), and therefore the line-feed software setting 'NO line-feeds sent' must be selected when configuring the system. Clearly, the user will need to consult her/his appropriate printer to check the location of the switches in question.

Users of an appropriate Epson printer with one of the optional SERIAL INTERFACES installed should check the settings of an ADDITIONAL set of DIP switches located on the serial interface add-on PCB: there may be a second switch with the function 'Input buffering enabled' (which must be OFF), and possibly another 'Auto line-feed' switch (which must be ON). Note that even if the serial interface is enabled, the main DIP switches on the main PCB still affect the printer's characteristics.

Serial Epson users should also check any baud rate/word format DIP switches, with the help of the appropriate manual, and match the chosen hardware settings with the same software printer settings. Note that a low baud rate is NOT RECOMMENDED, as the speed advantage of using the serial interface will be cancelled out. Also, a low baud rate means that the character downloading performed by the frame printer program during initialisation (which occurs after the user presses return in response to the message 'Press RETURN when printer is ready' and before the frame printer menu is displayed) can take an extremely long time.

The main symptom which will be experienced in the event of incorrect DIP switch settings, and/or unmatched software settings, is the printing of several lines of spurious characters during initialisation, and/or a loud 'beeping' sound at the same time, and/or the printing of frames in italic characters and no graphics printing.

Once the printer is performing correctly whilst the frame printer program is running, the following characteristics apply. Frames or routing images always have borders printed around them. Frames or routing images are centred on the page when printed on their own, but routing is printed alongside the frame in 'frame plus routing' mode.

Images are always printed in 'normal size' irrespective of the 'Size of Printout' setting. Graphics characters are printed, but double height and colour codes are ignored.

Three images are printed per page of standard size (11 inch) paper. (All other printer types supported by the system cause TWO images per page to be printed, except the Integrex Colour jet which is assumed to have roll paper installed instead of the usual fan-fold listing paper.)

Epson Non-Programmable Printers

The third printer listed under the 'Printer Type' menu is labelled "Epson MX100 Type III", but — like the last option described — this term can be interpreted more broadly. Essentially, this option supports Epson printers WITHOUT character downloading abilities but WITH a wide (132 column) carriage.

You will need to check any DIP switch which defines the printer's action on receiving 'carriage return' in a similar manner as has already been described, and — as before — set the software settings accordingly, or adopt the trial-and-error approach instead. Other hardware switches should NOT be relevant, but if in doubt you will need to study your printer manual.

With this option selected, when the frame printer program is running, single images will be printed in the centre of your 132-column width listing paper, and the 'frame plus routing' option will print the two images alongside each other. Because these are — as a pair — also centred on the wide paper, the printout formatting will not function correctly if normal width (80 column) paper is installed, or an 80 column printer is connected up by mistake.

Borders are always printed, but of course graphics characters and Viewdata display attribute codes have to be replaced with asterisks and spaces, respectively, by the software. The 'double size' flag is, as in the previous case, necessarily ignored.

Microline Printers with Graphics

This setting is designed for 80 column Microline printers with a built-in graphics character set. You may again need to check any hardware settings before configuring the software. Printout formatting is exactly the same as described for the last printer type, except that the 'double width' setting IS supported.

If 'double width' is in effect whilst the frame printer is running in 'frame plus routing' mode, the routing is by necessity printed underneath the frame instead of alongside it. Furthermore, all graphics characters are printed accurately.

Typewriter/Printers

The setting entitled "Silver Reed EX43", whilst having been developed for use on that particular machine, is another printer type which can be used for a variety of different machines. Essentially, this setting supports the increasingly popular typewriters with computer interfaces currently on the market, of which the Silver Reed is just one.

This option is designed for a friction-fed carriage which is wide enough to take a sheet of A4 typing paper ON ITS SIDE, and providing this paper is loaded carefully, the software will enable two images per sheet to be printed. Note again that if narrower paper is used, or an 80 column printer is connected whilst this setting is in effect, incorrect formatting is likely.

As usual, you may need to check the hardware settings (if any) that your typewriter interface unit expects, in order that this option will allow correct functioning.

Clearly, only single-width images, without graphics or Viewdata codes, are possible. Self-centring of single images, or 'frame plus routing' pairs alongside each other occurs, and borders are always printed around images.

ASCII Only/Screen Dump ROMs

The final option is a dual-purpose setting, allowing on one hand any other printer to be supported, and on the other hand allowing a screen dump ROM to be enabled once the frame printer has initialised.

Taking the first of these first, this setting is labelled 'ASCII Only', to imply that if your printer is not capable of matching any of the characteristics of the printer types mentioned so far, then this is the option you will have to choose. It is designed for printers that cannot handle any graphics or Viewdata characters, and that have a standard width (80 column) carriage.

The printout formatting characteristics automatically adopted when this printer type is selected are identical to the last type described, except that image centring is performed according to the '80 column width' assumption, ie: printing always commences nearer to the left hand edge of the paper.

Note that, providing any hardware settings have been set up correctly, it should practically always be possible to use this setting with a more sophisticated printer actually connected up. This can sometimes be fairly useful as part of a test procedure whilst experimenting with different permutations of hardware and/or software settings.

The screen dump ROM facility has already been outlined, and we will describe it on page 99.

USING AN ECONET PRINTER-SERVER

This section is intended for Econet users who have selected 'Econet printer server' as their interface type, as described on page 88 in this chapter. Such users will need to check that the printer server is set up properly in the remote station.

This is primarily the province of the Econet System Manager, so before proceeding, ordinary Econet users should check with their System Manager as to whether this has been done already, and if so, what station(s) the printer server(s) is(are) installed in, and what type of printer is connected up (to each).

We assume that the printer server software is ROM-based (or on an EPROM), and has been installed in the desired BBC computer on the Econet, in accordance with the instructions given in the Acorn Econet Printer Server Manager's Guide. The commands that need to be issued to the printer server, after power-up or a reset, are as follows:

***PSERV 0**

..... to initialise the printer server with its default settings (the Viewdata System software will effectively override these by sending the appropriate control codes where necessary);

***NO BANNER**

..... to ensure that no banners like '**** Econet Station 123 ****' are printed (such banners would interfere with the frame printer software's automatic printout formatting procedures);

***ENDTEXT**

..... so that, for similar reasons, nothing is printed when the user terminates her/his printout.

In addition, unless the printer connected to the printer server station is an ordinary parallel printer, the interface characteristics must be set up manually, using the appropriate *FX5 commands and possibly baud rate and serial word *FX5 commands. These are documented in the Printer Server Guide, the User Guide and the Advanced User Guide, so will not be repeated here.

See the Printer Server Guide, and the earlier section of this chapter, for details of how to rectify any error conditions that occur when printing across the network.

Finally, please note that the frame printer software is not guaranteed to function correctly across the network in cases where the local station is installed with any version of the Network Filing System prior to version number 3.40. The version in use is the number displayed immediately following the letters 'NFS' in response to the command *HELP.

The reason for this is that earlier versions of NFS did not allow control characters to be sent to the printer server. Therefore, whilst printer configurations relying simply on the 'ASCII only' printer type setting should perform as designed and documented in this chapter, other printer types assume that various control characters reach the printer successfully, so unpredictable results may occur if these are filtered out by NFS chips prior to version 3.40.

PRINTING VIEWDATA FRAMES

Pages 92-96 have already provided an overview of the use of the frame printer program, and the Tutorial Guide has introduced the new user to its basic operation. This section completes the treatment of this component of the system by dealing with a few of its aspects that have not yet been covered.

Starting Up

When the program is selected from the System Menu by choosing the option entitled 'PRINT VIEW-DATA FRAMES', various initialisation functions are carried out.

Initialisation includes reading the system SETTINGS file from the System Menu start-up directory, and setting up the printer configuration according to the information it finds in the file. It then puts the user into the working directory selected according to either the current disk drive/Econet directory settings or to the directory spelt out manually using the 'override default directory' facility.

None of this, however, occurs until the user has followed the instruction to 'Press RETURN when ready'. This allows time to ensure that the disk has been changed (if necessary), and that the printer is powered up, connected up to the correct interface, and is 'on-line' to the computer. If any of these conditions are NOT met, however, the computer may 'hang', and in such a situation, even when **RETURN** is pressed, the software will not be able to proceed to the display of the frame printer menu.

Note that the converse is not necessarily true, in other words if the menu IS successfully displayed this MAY NOT mean that the printer is set up properly (because in the case of some printer types, no characters need to be sent to the printer during initialisation). Instead, if the software is configured for a non-existent printer, the program will appear to run properly until such time as printing commences, whereupon it will 'hang' after displaying the message "Printing <frame > — please wait".

You will need to re-boot the system from the start if the software 'hangs', and it is also advisable in this situation to reset the printer by switching the power off and then on again. The latter also applies if the system has been reconfigured wrongly for the printer connected up, because it may well have been sent characters whose effect cannot be cancelled in any other way.

The software also checks the working directory for a valid Viewdatabase file, reporting an error non-fatally if a file named 'VWDB' is present but is not a recognised random access database file. Exactly like the Editor program, the software automatically decides whether it is dealing with a random access database file or a standard DFS database directory, but unlike the Editor, the frame printer cannot change from its initially-selected mode once it has been set up.

Again like the Editor program, the frame printer program allows frame titles to have up to six characters if a standard DFS directory is in use, or up to nine characters if the Econet or the random access filing system is in use. Also, whilst the frame printer program is running, IT IS VITAL TO ENSURE THAT THE DATABASE DISK IS NOT CHANGED, as this will risk the corruption of your database disk, and will also lead to malfunction of the program. If you wish to print from a second disk, it is necessary to rerun to the main System Menu first, swap the database disks, and then recall the frame print option.

Other errors that might occur during initialisation are the same as those referred to in Chapter 1, on the System Menu program. Please refer back to Chapter 1 if they occur.

The Frame Printer Menu

The frame printer menu provides access to the two main sections of the program, printing frames one at a time, and printing a number of frames. Both sections are accessed via another menu from which you choose whether the frame alone, the routing alone, or the frame plus routing, is printed. Note that the first section also enables the frame, its routing, or both, to be previewed on the screen with or without it being printed.

The menu also allows the user to enable the screen dump ROM feature, which is dealt with in the following section

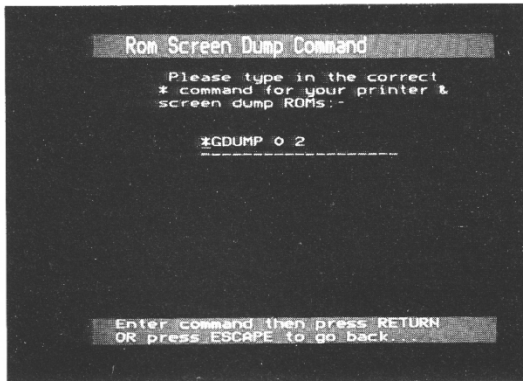
Use of the menu (APART FROM the screen dump ROM feature), and the 'print frames one at a time' section, is dealt with in some detail in the Tutorial Guide.

The 'print a number of frames' section is dealt with in outline in the Tutorial Guide, and is explained further on page 101.

Using Screen Dump ROMs

If the frame printer has been entered with the printer type set to 'ASCII Only', then a special feature can be enabled which allows the software to support a screen dump ROM installed in the computer (as outlined on page 86).

To enable this feature, use the cursor keys to move the menu selection bar to EITHER 'Print frames one at a time' OR 'Print a number of frames', and then HOLD DOWN THE **SHIFT** KEY WHILST PRESSING **RETURN** TO SELECT. This should result in the following display on the screen:



If you do not see this on your screen, then press **ESCAPE** for the last menu and try again (remember to hold down the **SHIFT** key when pressing return). If it still doesn't work, it must mean that the printer type selected is NOT 'ASCII Only', in which case you will have to return to the System Menu, reconfigure for 'ASCII Only', and then call up the frame printer and try again.

Now consult the manual that came with your screendump ROM, and find out what '*' command is needed to make it send a dump to the printer. If you have just started up the frame printer you will see that — as shown in the photograph — the default command is 'GDUMP 0 2'. This particular command is for the Computer Concepts Printmaster (Epson) ROM, and the parameters 0 and 2 make the dump appear in reverse colours (if NO parameters were specified after the letters 'GDUMP' then normal colour printing would occur with this ROM).

If you haven't got this particular ROM, or want to change the parameters, simply type in (next to the '*' on the screen) the appropriate command. The whole command must not be more than 15 characters. You can use the delete and cursor left and right keys whilst entering the command.

If you decide against using this feature at this point, press **ESCAPE** and you will be returned to the last menu, and if you now select one of the options WITHOUT holding down the SHIFT key, printing will later be carried out in normal 'ASCII Only' mode.

Otherwise, once you are satisfied that you have typed in the correct command, press **RETURN** and the program will continue to the 'Choose Printing Mode' menu, and subsequent sections, exactly as before. The software has 'remembered' your command, and when you come to print out a frame or its routing or both, this command will automatically be executed for you. Therefore — providing you got the command and its syntax correct! — all the facilities of your screen dump ROM will show themselves during printout.

If you didn't get the command or its syntax correct, then an error will occur when you try to print a frame, and you will need to restart the program and try again. If necessary, check that the ROM is installed properly in your computer, and check that no other ROMs are trying to execute the same command, as chaos could ensue otherwise!

Please note that whenever you return to the frame printer menu, this special feature will always be CANCELLED, whether or not it was enabled previously, and if required again must be explicitly selected again by pressing **SHIFT** + **RETURN** again, instead of just **RETURN**. (This time, however, it will be quicker, because the command that you typed in before will be displayed as the new default, so you just need to press **RETURN** again to confirm that this is still the command that you want.)

The disabling of this feature by the frame printer menu means that you can still use the 'ASCII Only' setting whilst still in the program (ie: without going back to the System Menu to reconfigure). This can be useful if you want to make the software do quick but crude printouts of selected frames instead of waiting what can be quite a long time for the full ROM-driven dump. Alternatively, you might want your routing images printing out in simple 'ASCII Only' mode format, and your frames printed properly. It is easy to switch from one mode to another using the facilities just described.

Finally, please note that when this feature is enabled and the software is printing out a LIST of frames (see next section), the images themselves are necessarily displayed on the screen whilst printout is taking place, instead of simply the list: otherwise the ROM-based software would simply print out several copies of the screen showing the frame list, which would not be very interesting!

Dealing with Lists of Frames

This section assumes that the reader has already studied the section of the Tutorial Guide dealing with printing lists of frames, and simply details the aspects of this section of the frame printer program not already dealt with.

If the user has entered the 'Print a number of frames' section of the program, and is currently setting up a new list of frames, the software will check every new frame title entered to see if it exists in the database, and will not allow non-existent frames in the list. It does not need to perform this check however for repeated entries of the same title.

This feature speeds up the process of creating a list containing repeated entries of the same title, for printing multiple copies of the same frame.

Whilst the 'Print a number of frames' section of the program does not allow the previewing of database frames or routing images directly, the user can at any time ESCAPE back to the top level of the program, enter the 'Print frames one at a time' section, preview selected frame(s) and/or routing, and then return to the creation of her/his frame list. This will not destroy the contents of the current frame list, providing that on return to the 'Multiple Frames' menu, the option entitled 'Inspect or Add to Current Frame List' is selected instead of 'Set Up a New List'.

Once the 'Print a number of frames' section is re-entered, the printing mode selected on your way there (ie: frame only, routing only, or both) will determine what printout occurs for the WHOLE LIST. There is no way, for example, of making some entries in the list print out just the frame, whilst others add the routing.

When the user comes to saving or loading a frame list, a title for the list will be requested. A default title 'FRAMELISTa' is offered initially to Econet or random access disk users, 'FRLISTa' to standard DFS users. This default title may of course be overridden, permitting any number of frame lists — with different names — to be saved and loaded. If the default name is overridden by the user, then next time such a name is requested the last-used name is represented as the new default.

The default frame list names are 'remembered' by the software entirely independently of its memory of ordinary frame titles. The default frame title is always '0a' at the start of the program, but subsequently changes each time a new frame title is input by the user.

If a list of frames is created and then saved on disk, it is possible that the user might subsequently delete one of the listed frames from the database. This means that if the frame list is then re-loaded, and sent printing, some frames may not be found during the print run. The result is that the whole run is aborted from the point that the error is discovered, so it is up to the user to maintain her/his own frame lists.

The curious user who has become reasonably familiar with the frame printer and Editor programs will have realised that the frame printer's frame lists are themselves stored on disk as Viewdata frames! Whilst these can be loaded into the Editor, Search or frame printer programs, as frames in their own right, the special message that they contain should be heeded. If the list information has been corrupted, the user will either be told that it is not recognised as a frame list at all, or will find that the program has processed part of the list and then given up in disgust, displaying only the first, un-corrupted, section of the original list!

Having sounded the warning bells about possible corruption of frame lists, we should end this section by pointing out some useful, legitimate, applications of the fact that frame lists are themselves Viewdata frames. For example, at the end of the print run of a list of your favourite frames, you could print out (from the 'Print frames one at a time' section of the program) the 'frame list frame' used to generate that print run.

Similarly, if you have saved a number of frame lists, you could even set up and save a frame list which lists all your other frame lists. If used carefully, these features could help you to remember, plan and structure your database (although of course if used carelessly they COULD waste a good deal of disk space

Using the Serial Integrex Printer

If you are using an Integrex Colour jet printer with the buffered RS232/Viewdata option installed, then if it has a rotary switch on the front panel, it should always be set to position 'C' WHEN IN PARALLEL MODE. When using it as a serial printer, the numbered switch positions apply. The software 'colour scheme' setting will have no effect, as this is controlled by the same switch in serial mode.

If 'single switch' printing is selected, the software will expect to place frames, routing images, etc, side by side on the printer paper. This means that the rotary switch or DIP switch setting on the printer MUST be on one of the positions marked '1 + 2'. If this is not done, then half of the images sent to the printer will not be printed, as each 'page 2' in the printer buffer will be lost.

If 'double size' is selected, you should use either of the LARGE positions marked '1'. If either of the '1 + 2' positions are used in this mode, then a second image — containing irrelevant or 'garbage' information — will appear alongside your desired image. Alternatively, one of the SMALL positions marked '1' may be used, but your images will be printed out in small format on the left hand side of the paper only.

It is VERY IMPORTANT TO REALISE that when the Integrex is in serial printing mode, images are sent to its internal page buffer(s) BEFORE ANYTHING IS PRINTED OUT. This means that when the frame printer software is displaying the message 'Printing < frame > — please wait', nothing visible appears on the printer until the whole image is sent. Similarly, when set to 'single size' printing, TWO IMAGES are sent before anything visible happens. Therefore the user should not worry that the printer is not working — it is simply buffering up one or two screen's worth of your output, and will automatically be told to start printing when the buffers are full.

Printout can still be aborted by pressing **ESCAPE** when an image is being sent to the printer, but an alternative is — as documented in the Integrex manual — to press the button marked 'LF/PRINT' whilst printout itself is occurring. This flushes the internal buffer(s) ready to receive more images. There is however, no need to press this button to initiate the printout.

Please note also that whenever one of the frame printer's banners is sent to the printer, it effectively uses the whole of one screen buffer, and so when printing actually commences, several lines of white space will appear. However, this can be avoided by aborting the printout in the latter of the two manners described above.

Finally, because catalogue listings are also treated by the printer as a 1k screen image, if you have a large number of frames in your database, the catalogue listing is likely to be corrupted when printed out. The only way to avoid this if you need hard-copy catalogue printouts is unfortunately to reconfigure for parallel printing to the Integrex and start again, although of course this would mean that the improved formatting characteristics of the software/printer in serial mode are lost.

CHAPTER 6 INSTALLING THE SYSTEM ON AN ECONET

This chapter describes how to transfer the Viewdata System software from your disk onto an Econet fileserver, and configure the Econet system so that the Viewdata system can be used on the network.

It is aimed at the Econet System Manager, whom we assume understands the Econet well already and is reasonably experienced in getting around directories, transferring software, etc. Reference should constantly be made to the Acorn Econet Manager's Guide throughout the description that follows, if you are in any doubt about the terminology used or procedures described.

Preparation

- a) It is best to be at an Econet station which also has disk drives attached. First of all, make sure you are working under the DFS, and boot up the Viewdata System disk in the normal manner.
- b) You now need to re-configure the disk and re-create a SETTINGS file in the disk's root directory (\$) which will be suitable for transferring to the Econet fileserver as the network's default SETTINGS file. (If you need to preserve your current disk SETTINGS, then you should either use a backup system disk or 'park' a copy of your current SETTING file under a different name for the time being, and restore this to \$.SETTING on the disk later.) Select 'Re-Configure the System' from the System Menu, and then check or change ALL of the settings, as follows.
 - c) Decide on the Econet directories that you will be using to store the software and to hold your (main) Viewdata base. WRITE THESE DOWN — or remember them carefully — because it is VITAL NOT TO CHANGE THEM part way through the installation procedure. We *recommend* that you call the software directory \$.VIEWDATA and the database directory \$.VWDB. Indeed, we will assume for the remainder of this description that these are the directories that you HAVE chosen. (The experienced network manager may decide — now or in the future — to (re-)install the system using different directories, but will obviously need to substitute her/his chosen names for our recommended names in the following)
 - d) Select 'Network Settings' from the 'Re-Configure the System' menu, and enter in the software and database directories that you have chosen. Then select each of the other re-configuration options (Disk Drive Settings, IP Heading, Output to Printer and Screen Flicker On/Off) in turn, and check or reset these so that on the network they will suit the MAJORITY of your users. Two particular comments should be made next regarding this process
 - e) The disk drive settings will still be relevant to Econet users, if any of your network stations (like the one you are now using!) also have local disk drives. Users may wish to switch between the network and disk filing systems whilst running the Viewdata System, in which case whilst running on the network, the software will need to pick up the correct disk settings before switching to DFS.
 - f) As described in Chapter 5, the Econet user may wish to use the network printer-server OR a local printer for her/his printer output, so you should decide carefully on the best 'Output to Printer' configuration to create for the majority of users. See Chapter 5 for more details on printer configuration, but remember from Chapter 1 that minority users can easily set up their own personalised system configuration if the default that you are now creating does not suit them. (This of course applies to ALL the settings, not just the printer settings.)
 - g) Once you are satisfied that all settings are suitable, exit back to the System Menu, making sure on your way, that the settings are saved and up to date on the disk.

h) Now log on to the network, create a directory for the Viewdata System software and database, and then go into the new system directory:

```
*NET
*I AM xxxxx
*DIR $
*CDIR VIEWDATA
*CDIR VWDB
*DIR VIEWDATA
```

..... and your preparation work is now complete.

Transferring the Software

There are two main ways to transfer all of the Viewdata System software from disk to network. If you have Acorn's media-to-media file transfer utility called 'COPYF' (or possibly 'COPYFILES' if stored on an Econet fileserver), this is easy and you should read (a) below. Another way of transferring the Viewdata System software, is to use the 'Convert' facility. This has to take place when the network is down, and is described under (b) below. A third way involves file by file copying. For this, you should read (c) below.

a) Automatic Transfer Using the File Copy Utility

Step 1. Run up the file transfer program with the appropriate CHAIN command (eg):

```
CHAIN "$.UTILS.COPYFILES"
```

if it's stored on the net in the directory \$.UTILS, or

```
*DISK
CHAIN "COPYF"
```

(with the correct disk in!) if it's stored on disk.

Step 2. In response to the prompt:

Source Filing System: enter **D**

Step 3. In response to the prompt:

Destination Filing System: enter **N**

Step 4. In response to the prompt:

Copying Mode: enter **L**

(for list mode)

Step 5. In response to the prompt:

Source List Spec: enter *

(for all files in the disk's root directory)

Step 6. Relax while all the files are transferred for you. You should see a message on the screen for each file transferred, and if you are in sight of your fileserver monitor you will see SAVE messages on it for all files except the largest files in the Viewdata System.

6. Installing on an Econet

Step 7. Consult the Acorn documentation if any errors arise, but if all goes well and the transfer is completed, exit by pressing **ESCAPE** in response to the new prompt **Source List Spec:** and **C** in response to **Source Filing System:**.

PLEASE NOTE: At the time of writing, we are using a pre-release version of Acorn's COPYFILES utility, and so the above instructions MAY NOT BE CORRECT if their released version is substantially different from this.

b) Automatic Transfer Using 'Convert DFS file'

This way of transferring the software is necessary if your only station with disk drives is the fileserver itself.

Step 1. When the fileserver is down, load the utilities disk into drive 0.

Step 2. Enter ***FS (RETURN)**

Step 3. When the prompt:

Date: DD/MM/YY appears, enter **<today's date>**

Step 4. In response to the prompt:

No of drives: enter 1 (RETURN)

Step 5. At this point, replace the utilities disk in drive 0 with the (initialised) file server disk onto which you wish to copy the Viewdata software.

Step 6. In response to the prompt:

Command: enter C.

This causes a 'Converting' message to be displayed.

Step 7. At this point, load the disk holding the Viewdata System software into drive 1.

Step 8. In response to the prompt:

Drive: enter 1 (RETURN)

Step 9. In response to the prompt:

Side: enter 1 (RETURN)

A catalogue of the disk should then be displayed on the screen.

Step 10. In response to the prompt:

Destination for DFS dir. "\$":
enter **\$.VIEWDATA (RETURN)**

(or other directory name if you have configured the Viewdata software differently). This will then cause the software files to be transferred, the fileserver creating the directory \$.VIEWDATA if you have not done so already.

Step 11. In response to the prompt:

Destination for DFS dir. "B": simply enter **RETURN**

Step 12. Finally, in response to the prompt:

Again? enter **N (RETURN)**

The software should now be installed on the network. You should boot up the fileserver, log on at a user station as a system user, and proceed with the setting up of the menu in the root directory and any autoboot options required.

Manual File Transfer

This should only be used if, for some reason, one of the first two methods is not available. You might find it useful to obtain a hard-copy printout of the result of executing the command ***INFO *.*** to inspect your disk catalogue first. Alternatively, enter ***CAT** so that all Viewdata System files are listed.

Then repeat the following steps until all disk files (except B.SETTING which is not needed) are transferred

Step 1. Change to disk, find out a file's attributes, and make a note of the addresses displayed:

```
*DISK
*INFO <filename>
```

If it displays (for example):

```
$.<filename> FF1B00 FF8023 004176 125
```

```
<filename> <load addr.> <execute. addr.> <length> <start sector>
```

wherever the execute address reads FF8023, you can be sure it is a BASIC program, and the file can be transferred using BASIC's 'LOAD' and 'SAVE' commands.

If however, it displays (for example) the following:

```
$.<filename> 003300 004882 004900 1B6
```

with some other value for the execute address, it is a binary file and must be transferred using the following steps. The exceptions are the !BOOT and VBOOT files which must always use the I/O processor and are dealt with separately at the end.

NOTE: Ignore the first 2 digits of the 6-digit hex address — ie: use the least significant 4 digits only.

Step 2. LOAD the file into memory, either at its load address OR, if the load address is zero, or lower than the value of PAGE in hex (as found by typing PRINT PAGE), into a 'safe' area of memory:

```
*LOAD <filename>
```

or

```
*LOAD <filename> <safe address>
```

..... an example of the latter might be:

```
*LOAD SETTING 3000
```

Step 3. Switch back to network, and then SAVE the file using the correct addresses:

```
*NET
```

```
*SAVE<filename> <load addr.> + <length> <execute addr.>
```

OR if step (#) required using <safe addr.>:

```
*NET
```

```
*SAVE <filename> <safe addr.> + <length> <exct addr.> <reld addr.>
```

6. Installing on an Econet

Step 4. Check the attributes of the file just saved on the network against those shown for the disk file in step (i) using

***INFO <filename>**

..... which should show that the three address attributes should be the same as on the disk, except where they were originally zero, and there will be no leading F's.

Step 5. Now repeat all of the above steps from Step 1 until you have transferred all the relevant files except B.SETTING.

Step 6. When you are through, you might find it helpful to do a final check by obtaining a hard-copy print-out of the result of executing the command ***EX** to inspect all the file attributes in the network directory in the same way as you did on the disk before starting. If all is well, you are ready to proceed, BUT if any of the attributes don't tally it is quite possible that the Viewdata System will not function correctly, so delete and re-do any files you are doubtful about.

The **!BOOT** (and backup **VBOOT**) file uses a call which does not appear to work on a second processor, and must be made to run on the I/O processor. To transfer these:

Step 1. Enter: ***DISK (RETURN)**

Step 2. Enter: ***INFO !BOOT**

Which might display:

```
$.!BOOT FF7000 FF7000 00010A 16B
<file> <start> <execte> <length> <sector>
```

(If the information differs, make adjustments to what follows.)

Step 3. Enter: ***LOAD !BOOT 7000**

Step 4. Enter: ***NET**

Step 5. Enter: ***SAVE !BOOT 7000+10A FFFF7000 FFFF7000**

The FFFFs in the last two numbers ensure that if you have a 6502 2nd. processor attached, the **!BOOT** file will be reloaded into the I/O processor and executed from there. Repeat the steps for the **VBOOT** file.

Preparing the Files

Setting up the Menu and Start-Up Files

Follow the instructions in this section onwards whether you have just transferred the system files to the fileserver manually or automatically.

The System Menu program and default SETTINGS file must both be transferred to the root directory, and the VBOOT command file must be transferred to your library directory.

So assuming we are still on the network, in the directory \$.VIEWDATA:

```
*RENAME VSMENU $.VSMENU
*RENAME SETTING $.SETTING
*RENAME VBOOT <library>.VBOOT
```

The <library> directory is normally '\$.LIBRARY' but this is up to the System Manager to decide, and depends on whether a library already exists. It is best to use this (default) library, and not to have more than one library on the system, so that all users' default library settings will cause the *VBOOT command to be recognised.

As indicated in Chapter 1, if the default library directory is NOT used, the System Manager will need to inform all users of the name of the library directory containing the VBOOT command file, so that they can perform the correct *LIB command.

Accessing the New Files

The access attributes on all of the new files just created on your fileserver should now be set up in order to allow public access, and to prevent accidental damage. The simplest way to do this is as follows:

```
*ACCESS * LWR/WR
```

(the '*' causes this attribute to be set on all the files in the current directory, \$.VIEWDATA)

```
*ACCESS $.VSMENU LWR/WR
```

```
*ACCESS $.SETTING LWR/WR
```

(system SETTINGS files must NOT normally be locked, but this is the default copy which we should ensure is not altered — many users will create their own versions as described in Chapter 1)

```
*ACCESS<library>.VBOOT LWR/WR
```

Testing the Transfer

Setting up a Pseudo-User 'Viewdata'

For test purposes, this optional step will allow the Viewdata System to auto-boot whenever the command `'I AM VIEWDATA'` is executed at a station on the network. We are still logged on as a system user, so all that is needed is:

```
*NEWUSER VIEWDATA
*I AM VIEWDATA
*OPT 4,2
```

Note that the user VIEWDATA already has its own directory and IBOOT file as a result of the jobs done in previous sections. When YOU HAVE FINISHED TESTING, you should remove this pseudo-user, because anyone logging on with this user i.d. will be able to delete files in 'their' directory. Without password protection, this is potentially dangerous because the same directory doubles up as the system software directory and therefore all files there MUST remain intact.

Note also that the user 'VIEWDATA' does NOT rely on the <library> setting for its boot-up option, as the file IBOOT provides this once this user has executed the *OPT4,2 command to set the correct auto-boot option.

Setting up a Database

You should now re-log on as a system privileged user, and set up at least a dummy Viewdata base in the directory you have created on the fileserver for the purpose. Recall that, earlier in this chapter, we recommended calling this \$.VWDB, and that in effect this — or your own name — is by now set up as the default database directory in the file \$.SETTING.

As a minimum, then, at this point, you should create a frame called 'Oa' and SAVE it in the database directory; so that the SEARCH program will be able to start up properly by loading this as its 'front page'. It could be a dummy frame for the moment, or you could use the Editor to copy your existing Oa from your DFS/random access database disk.

Alternatively, you could transfer the whole of — say — the sample database provided with the system, from disk to network. See the chapter of the Tutorial Guide entitled 'Advanced Features' for the way to speed up this frame transfer process using the 'macro' facility in the Editor with the help of user defined function keys.

Testing out the System

You are now at the final stage, which involves checking that everything is installed correctly. It is best to do this by re-logging on as a non-privileged user (because one of the tests needed is to check that the correct file accesses have been set up). Assuming that you have carried out step 5, this is done quite simply by typing:

```
*I AM VIEWDATA
```

..... whereupon the Viewdata System should start itself up, and the System Menu will appear after a short wait.

If this does NOT happen, you will unfortunately need to back-track over one or more of the earlier sections of this chapter, and also re-read the 'Possible Problems' sub-sections of Chapter 1, Section 1.

Assuming everything is OK, you can now check out all of the programs in the suite, then inform the other network users that the Viewdata System is installed, and make sure they know how to use it. Of course, the precise results of your tests will depend upon the existence or otherwise of one or more Viewdata frames in the database directory, as described in the last section.

Note that if, whilst you are logged on as the user VIEWDATA, you change the system's settings at all, they will be saved with the name SETTING in 'your' (ie VIEWDATA's directory). This, then, is the first example of creating a personalised system configuration file, as described in Chapter 1. Please refer back to Chapter 1 and study the full implications of this: you will need to be in a position to inform other Econet users of how this system works!

Setting up Users

Setting up Users with an Auto Boot Option

For a user to be able to auto boot the Viewdata System Menu on logging on, requires two things. First a copy of the !BOOT file is needed in their root directory, and second, their option must be set to *OPT 4,2.

Note that in the first case, if you are using *LOAD and *SAVE to transfer the !BOOT file, similar precautions should be taken about giving it the correct reload and execute addresses as outlined at the end of the section dealing with manual transfer of software to the network.

With regard to the second, remember that the auto boot option, *OPT 4,2, can only be set when logged on as the user in question!

Users With Their Own Viewdata Bases

It is quite feasible to have a number of different Viewdata bases operating simultaneously under different user (or pseudo-user) IDs. All that is required to set one up is change the default setting for the Viewdata base directory to one of the user's own sub-directories.

To do this, the user should log on and create a sub-directory to hold the database, eg

```
*CDIR VIEWS
```

Then the Viewdata Menu should be booted.

```
*VBOOT
```

When the menu is displayed, select the option CHANGE THE SYSTEM'S SETTINGS. Then select Network Settings from the option menu. The user should NOT change the software directory, but simply press **RETURN** to accept the current setting. The cursor then moves down to the database directory. In this example, this should now be overtyped to read VIEWS (use the space bar to blank out any trailing characters from the previous directory title), and then press **RETURN**. Next press **ESCAPE** to go back to the Re-Configure the System menu. Optionally, they can at this point also change the I.P.s Heading which will then appear at the top left of each frame when the Search, Carousel or !Host programs are run from this Viewdata base. Next the user should press **ESCAPE** to return to the main menu.

When under the network filing system, any changes to the settings will automatically be saved under the current directory, in this instance in the user's root directory, under a file entitled 'SETTING' which will be created if it doesn't already exist. Thereafter, this file will be the one used whenever they user calls up the Viewdata system. Hence they will by default, always be set up to work from the database in their own sub-directory.

Once set up like this, it is possible to select a Viewdata base other than the default by using **SHIFT** and **RETURN** when selecting an option from the Main Menu, as outlined in Chapter 1. If this Viewdata base is not under the user's own directory, then public access must have been granted for the frames in that database. Given this, a user can search any other Viewdata base on the system.

Granting Public Access to a Viewdata Base

There are two ways of doing this. The first is detailed in the Editor chapter under the Set Up Page's Routeing option. Essentially it involves setting the User Access field in the Frame Table to 'y'. Note in this context that if this is NOT done, public access will by default be withheld, ie access to the frame is set to WR/, giving access to the owner only.

The second way of doing this is to use the Editor's System '*' Command option and enter:

***ACC. * WR/WR**

This sets ALL the frames in the current Viewdata base to public access.

Multiple Editors of a Viewdata Base

It is possible to have a number of people simultaneously editing the same Viewdata base. A simple way of doing this is for them all to log on as the same user (or pseudo-user or group-user) that has been set up with its own Viewdata base as described above. However this requires some planning and agreement amongst the members of the group as to what the overall structure of the Viewdata base is, and who is responsible for what parts. This is necessary to ensure that the routings remain coherent and that frames created by one person are not overwritten by another.

An alternative is to have each (sub)editor editing in their own database, and, when frames are ready to be transferred, the editors give public read access to the frames. A central co-ordinating editor, from the Editor program, changes the current directory to a contributing editor, and then loads each frame, changes back to the central Viewdata base directory and saves the frame there. Contributing editors will probably also find it necessary to regularly delete frames from their workspace, if necessary backing up onto floppy disk first.

It is advisable for such a central collecting database to be located in the users root directory rather than in a sub-directory as it simplifies returning to it. This is done by selecting the CHANGE CURRENT *DIR option from the Editor, and blanking out the subdirectory title. This effectively does a *DIR command, taking the user back to their own directory.

Better still, if you have it, is to use the Acorn utility COPYFILE, or COPYF, to transfer the whole contents of a sub-editor's directory. But again, the contents should be checked first to make sure that they will integrate with the existing contents of the central Viewdata base.

CHAPTER 7 VIEWDATA AND TELESOFTWARE TERMINAL

Introduction

The CommuniTel Viewdata and Telesoftware Terminal is a full featured, intelligent Viewdata terminal, including a Council for Educational Technology (CET) telesoftware downloader. It is suitable for use as a terminal to BT Prestel and to similar Viewdata systems, as well as to a remote CommuniTel Host database.

The Terminal is the 'online' equivalent of the CommuniTel local Search/View system, in that it allows you to browse through the contents of a remote database, accessing it via a modem and the telephone network, rather than accessing a local database directly. But to facilitate on-line working, it has numerous extra facilities, such as being able to download frames and telesoftware, to edit on- and off-line, and to send pre-prepared frames and messages. Perhaps one of the most useful is the facility to create menu frames that program the function keys to perform whole sequences of actions at a single key stroke. Then, using the menu frame to remind you of each function, you can use **CTRL** and a function key to perform activities such as dialling up different systems, entering the log on sequences, loading and sending frames, etc.

These are all covered in this chapter which has four main parts.

The first part, 'Terminal Functions, An Overview', begins with a brief outline of the functions available from the Terminal and a general note on their use. The functions are grouped under 4 main headings: Housekeeping, Communications, Telesoftware and Frame Filing. In the Help Window, these groupings are distinguished by their colours, respectively: Magenta, Green, Cyan and Yellow.

The second part, 'Terminal Functions in Detail', covers the same ground under the same headings, with extended sections covering: programming the function keys, preparing and sending messages and frames, and the use of the Terminal's editor both on- and off-line. Under the Communications Functions there is also a section, 'General Viewdata Functions', covering the uses of the Terminal when searching for information on, and sending information to a Viewdata System.

The final two parts cover Error Messages and the Configuration Options.

Getting Started

Before calling up the Terminal, you will have to have a data disk ready. This can be of two types, depending on what you want to do, or a combination of the two.

If you wish to download frame images, or send frames or messages then you should be using a disk with a Viewdata base set up on it. This should always be put in the normal default Viewdata base drive when starting up the Terminal. If on the other hand, you primarily wish to download telesoftware then a normal formatted DFS disk will do. In this latter case it is still possible to save and load frames but they will be stored in the single frame per file mode.

It is of course possible to have both at the same time on different disk surfaces if your disk configuration allows it. However, if you are using a single disk drive, you may find the best way is to prepare a special disk for terminal work, which has both a Viewdata base file on it and space for downloading telesoftware. For this, when Creating the New Viewdata Base File (see Chapter 1), when asked to enter the size of the database, enter a figure less than the maximum offered. How many less depends on how much room you want to leave for other downloaded files. Given that each frame occupies 1K, it is easy to see that, if you want to split an 80 track disk, then by entering 95 frames instead of 195, you leave 100K for downloaded files.

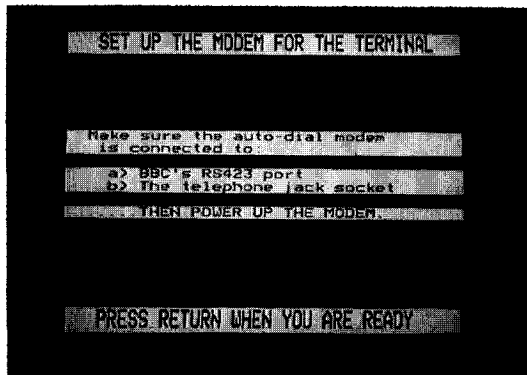
To call up the Terminal, from the Main System menu, select the option:

VIEWDATA TELESOFTWARE TERMINAL

and press **RETURN**. If you are using double disk drives, you must make sure that the disk you propose to work with is already in the default drive, drive 1. For a single disk drive unit, you are prompted to swap the disk at the appropriate point. In either case, the disk is checked for a random access 'VWDB' file. If it finds it, it opens the file, and sets itself to the multiple frame per file mode, otherwise defaulting to the single frame per file mode.

If you change drives using the Terminal O.S. * command option, it does NOT, unlike the Editor, close the file and look for another on the new surface, but leaves the current file open. This means that if you have more than one drive surface to play with, you can select another drive number for downloading telesoftware onto, while still saving and loading frames to the Viewdata base on the default drive number. When using single frame per file mode however, all frames are saved to, and loaded from, the current directory.

On selecting the Terminal option, the following screen appears, asking you to make sure that your modem is properly connected.



If you are NOT using the CommuniTel/Dacom intelligent modem, you are referred to your modem's instructions for setting it up.

The CommuniTel modem comes supplied with a lead to connect it with the BBC micro. The D-type connector goes on the back of the modem, and the 5-way Domino Din plug goes in the back of the BBC micro in the socket marked 'RS423'.

Make sure that GAP in the metal casing of this plug is AT THE TOP as you insert it.

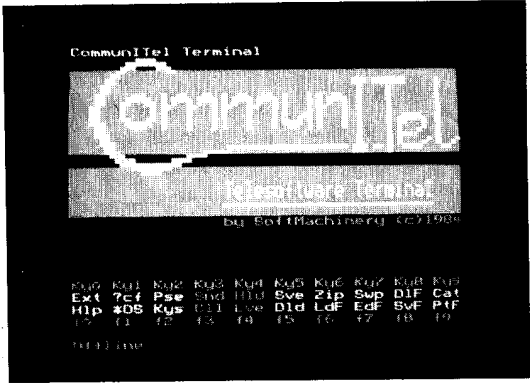
You must also connect the telephone line plug that comes from the rear right of the modem into an appropriate telephone socket.

If you wish, you may also plug a telephone into the back of the modem in the empty socket. This may be used in the ordinary way whenever the modem is not online. However, you do not have to do this, as the modem is auto-dialling and does not require a handset in its operation.

The last step (easily forgotten) is to plug the modem in and switch it on. The left most LED on the front of the modem should light up.

7 The Telesoftware Terminal

When you have done this, press **RETURN** and the Terminal will be loaded in and the following screen displayed:



Part 1. Terminal Functions — An Overview

When the Terminal starts up, you are presented with the CommuniTel logo, and a **Help** window at the bottom of the screen, which looks like this:

Ky0	Ky1	Ky2	Ky3	Ky4	Ky5	Ky6	Ky7	Ky8	Ky9	(functions CTRL f0 f9)
Ext	?cf	Pse	Snd	Hld	Sve	Zip	Swp	D1F	Cat	(functions SHIFT f0 f9)
Hlp	*OS	Kys	Cll	Lve	Dld	LdF	EdF	SvF	PtF	(functions f0 f9)
f0	f1	f2	f3	f4	f5	f6	f7	f8	f9	(function key labels)
Offline										(status line)

The bottom line of the screen displays the status message 'Offline', indicating that the Terminal is not yet connected to a remote database — this changes to 'Online' when a connection is made. The bottom line is also used to display the name of the current Terminal function, if any is selected.

Above the status line is the Help window, showing how the various Terminal functions are selected by using the red function keys, f0 to f9, which are labelled in the bottom row of the window.

The next row up shows the functions available when a function key is pressed on its own.

The next row up shows the functions available when the **SHIFT** key is pressed at the same time as a function key.

The next row up shows that when the **CTRL** key is pressed at the same time as a function key, the keys generate user-defined strings of characters, if these have previously been programmed.

The names of the Terminal functions have been abbreviated in the Help window in order to save space, but once you know the name of each function, the window helps to remind you which function is on which key.

The following is a brief summary of each of the Terminal functions, which will be explained in detail later on.

Housekeeping Functions (Magenta)

f0 Hlp Help

SHIFT f0 Ext Exit

f1 *OS Operating System Command

SHIFT f1 ?cf Configuration Command

f2 Kys Keys

SHIFT f2 Pse Pause

This group of functions allow various general housekeeping activities:

Help **f0**

This function puts the Help window on display, as it is when the Terminal starts up.

Exit **SHIFT + f0**

When the Terminal is 'Offline' this function exits from the Terminal software, and returns you to the CommuniTel Main Menu. Otherwise, when 'Online', it can be used to exit from the current frame-editing task, if any.

Operating System Command **f1**

This function allows you to enter any BBC Operating System 'Star' Command you may need to use.

Configuration Command **SHIFT + f1**

This function allows you to alter some details of the operation of the Terminal software, to adjust it to your own particular way of working.

Keys **f2**

This function allows you to program any or all of the user-defined function keys in a single step, using data concealed in the current viewdata frame.

Pause **SHIFT + f2**

When 'Online', this function allows you to make the Terminal wait for a time, before it transmits any data — this can be used to synchronise transmitted and received information.

Communications Functions (Green)

f 3 ClI Call

SHIFT f 3 Snd Send

f 4 Lve Leave

SHIFT f 4 Hld Hold

This group of functions are concerned with connecting to, and disconnecting from, a remote database, and with sending information to it:

Call **f 3**

When 'Offline', this function allows you to go 'Online', by connecting with the Terminal, via the modem and the telephone network, to a remote database.

Send **SHIFT** + **f 3**

When 'Online', this function allows you to send a prepared message or frame to the remote database.

Hold **SHIFT** + **f 4**

When 'Online', this function allows you to go 'Offline', by abruptly disconnecting the modem from the telephone network, but also holding the last frame you viewed on the display.

Leave **f 4**

When 'Online', this function allows you to go 'Offline', by leaving the database in an orderly fashion, and then disconnecting the modem from the telephone network.

Telesoftware Functions (Cyan)

f5 Dld Download

SHIFT f5 Sve Save File

This pair of functions is concerned with the safe reception from a remote database of telesoftware-encoded data files, and with saving the downloaded files to your local filing system.

Download **f5**

When Online, this function reads through a series of viewdata frames containing a file encoded into CET telesoftware format, decodes the data, and stores the decoded information into the computer's memory.

Save File **SHIFT + f5**

This function transfers the most recently downloaded file from the computer's memory, into a file on your local filing system.

Frame Filing Functions (Yellow)

f 6 LdF Load Frame

SHIFT f 6 Zip Zip-Send Frame

f 7 EdF Edit Frame

SHIFT f 7 Swp Swap Viewdata base

f 8 SvF Save Frame

SHIFT f 8 DIF Delete frame

f 9 PtF Print Frame

SHIFT f 9 Cat Catalogue Frames

This group of functions is concerned with the storage, display and transmission of viewdata frames. Most of these functions are duplicated elsewhere within the CommuniTel system, and should therefore be familiar to you, but their presence in the terminal allows frames from a 'live' database to be included easily into your own local database, and vice versa.

Load Frame **f 6**

This function loads an existing frame from your local database, and displays it.

Zip-Send Frame **SHIFT + f 6**

When 'Online' to a suitably-equipped remote database, this function allows a prepared frame to be transmitted to it at very high speed.

Edit Frame **f 7**

When 'Offline', this function allows you to create or edit a viewdata frame, and is almost identical in operation to the CommuniTel Viewdata Editor.

When 'Online', this function can also allow you to edit a frame on a remote database directly, using the same methods as for 'Offline' editing.

Swap Viewdata Base **SHIFT + f 7**

This function enables you to swap from one Viewdata base to another, on a different disk drive, or filing system.

Save Frame **f 8**

This function allows you to save the current viewdata frame to your local database.

Delete Frame **SHIFT + f 8**

This function allows you to delete a frame from your local database.

Print frame **f 9**

This function allows you to obtain a hard copy of the current viewdata frame on your printer.

Catalogue Frames **SHIFT + f 9**

This function allows you to obtain a catalogue listing of the frames in your local database.

Reveal Function

There is one other function not mentioned in the Help window — this is the Reveal function, which reveals any text hidden or concealed on the current frame, and which is obtained by pressing the **SHIFT** and **DELETE** keys together.

Pressing **SHIFT DELETE** again will re-conceal the revealed text, and so on.

How To Use The Function Keys

When you want to use a particular function, simply press the relevant function key **f0** **f9**, or **SHIFT** + **f0** **f9**.

If the Terminal is 'Online', there may be a delay of a second or two before anything happens, especially if data is still being received from the remote database.

As soon as the Terminal is able to perform your selected function, the function will either act immediately, or the name of the function will be displayed, and you will be asked to confirm its selection by pressing the **RETURN** key.

The following instructions begin to act immediately, and cannot be stopped (they are all 'harmless', so you are unlikely to want to stop them once selected!):

Help
Keys
Pause
Reveal

The following functions begin to act immediately, but wait for further input, and can be stopped by pressing **ESCAPE** or another function key:

Operating System Command
Configuration Command

All other functions display their name on the Terminal's status line, along with the message 'RETURN to Confirm', and wait for you to press **RETURN** before they continue.

If you wish to abandon a function at this stage, press **ESCAPE**, or another function key.

If you press a function key and it appears to be ignored by the Terminal, it is because the function cannot be used under the current conditions. For example, selecting Download when the Terminal is 'Offline' will simply re-display the 'Offline' message, because you can only download when 'Online' to a remote database.

Wherever possible, the Terminal also allows you to abandon a function at *any* stage, by pressing **ESCAPE**.

Part 2. Terminal Functions in Detail

The following sections deal with all of the Terminal's functions in greater detail.

The functions appear in their order across the function keys, that is, Housekeeping functions, Communications functions, Telesoftware functions and Frame Filing functions.

This does not necessarily reflect the order in which you might be likely to use the functions, so refer to the Tutorial Guide's chapter on the Terminal for a more concise treatment, which will allow you to go 'Online' to a remote database without having to become too bogged down in technical detail.

However, you should refer to the following sections to learn how to use its facilities to the full, if you have problems, or if you want to know more about the technical aspects of the Terminal.

Housekeeping Functions

This section deals with the Help, Exit, Operating System Command, Configuration Command, Keys and Pause functions in detail.

Help Function (Hlp) key **f0**

The Help function simply puts the help window on display, as it is when the Terminal first starts up.

The help window shows which functions are available on each of the red function keys **f0** to **f9**.

If you cannot remember which key a particular function is on, press **f0** to display the help window, and look for the abbreviated name of the function.

Remember that the bottom line of the help window labels the function keys (**f0** to **f9**) themselves, the next row up indicates the functions available by pressing each of the keys on its own, the next row up after that indicates the functions available by pressing **SHIFT** and each of the keys, and the top row indicates that your own user-defined strings are available by pressing **CTRL** and each of the keys.

You will notice that the help window disappears immediately after pressing any other key. If you want to refer to it again, simply press **f0** again.

The help window looks like this:

Ky0	Ky1	Ky2	Ky3	Ky4	Ky5	Ky6	Ky7	Ky8	Ky9	(CTRL + f0 ... f9)
Ext	?cf	Pse	Snd	Hld	Sve	Zip		D1F	Cat	(SHIFT + f0 ... f9)
Hlp	*OS	Kys	C11	Lve	Dld	LdF	EdF	SvF	PtF	(f0 ... f9)
f0	f1	f2	f3	f4	f5	f6	f7	f8	f9	(Function key labels)

The abbreviated function names have the following meanings:

f0 Hlp Help

SHIFT f0 Ext Exit

f1 *OS Operating System Command

SHIFT f1 ?cf Configuration Command

f2 Kys Keys

SHIFT f2 Pse Pause

f3 Cll Call

SHIFT f3 Snd Send

f4 Lve Leave

SHIFT f4 Hld Hold

f5 Dld Download

SHIFT f5 Sve Save File

f6 LdF Load Frame

SHIFT f6 Zip Zip-Send Frame

f7 EdF Edit Frame

f8 SvF Save Frame

SHIFT f8 D1F Delete Frame

f9 PtF Print Frame

SHIFT f9 Cat Catalogue Frames

CTRL f0 Ky0 User's *KEY0 definition

CTRL f1 Ky1 User's *KEY1 definition

CTRL f2 Ky2 User's *KEY2 definition

CTRL f3 Ky3 User's *KEY3 definition

CTRL f4 Ky4 User's *KEY4 definition

CTRL f5 Ky5 User's *KEY5 definition

CTRL f6 Ky6 User's *KEY6 definition

CTRL f7 Ky7 User's *KEY7 definition

CTRL f8 Ky8 User's *KEY8 definition

CTRL f9 Ky9 User's *KEY9 definition

Each of the Terminal functions is explained in detail below, including the use of user-defined function key strings.

Exit Function — (Ext) key **SHIFT f0**

When the Terminal is 'Offline', the Exit function allows you to exit from the Terminal software, and to return to the CommuniTel main system menu.

If you want to leave the Terminal software, press **SHIFT** + **f0**, and **RETURN** to confirm, to exit.

Please note that it is *not* possible to exit back to the menu when the Terminal is still 'Online' to a remote database, because you might forget that you are still connected to the telephone network, and incurring charges. Please see the Operating System Command function for a way to temporarily exit from the Terminal while still 'Online'.

However, when the Terminal is 'Online', the Exit function serves another, rather different purpose.

Both the CommuniTel Host Editor and the Prestel Editing System make use of the sequence of characters 'ESCAPE, J' to indicate that an exit from the current editing task is required.

You can send this sequence by pressing **SHIFT** and **RETURN** together (= **ESCAPE**), followed by **J** (upper case). But pressing the Exit key (**SHIFT** + **f0**) when 'Online' has the same effect, and is easier to remember.

Problems

If on pressing **SHIFT** + **f0** to exit, you are instead offered the Save File function, this is because you have previously Downloaded a telesoftware file, but have not Saved it. If you *do* wish to save the downloaded file before Exiting from the Terminal, press **RETURN** to confirm the Save (refer to the Save File function for details). Otherwise, press **ESCAPE** if you do not want to save the file for any reason, and press **SHIFT** + **f0** again to Exit from the Terminal.

Operating System Command Function — (*OS) key **f1**

The Operating System Command function allows you to enter any standard BBC Operating System 'Star' Command that you might require while using the Terminal.

Examples of this function's use might be to select a different disk drive (eg *DR.3), or a different filing system (eg *NET), or a different printer (eg *FX5,4) — the possibilities are endless.

To enter an operating system command, press **f1**. You will see a star (*) prompt appear, with a flashing cursor.

You can now enter your operating system command (you don't need to enter another star (*)), and finish it with **RETURN**.

What happens next depends very much on the command you have entered — your command is passed to the operating system, and is not under the control of the Terminal software. If an error occurs within the operating system, it will be displayed in red.

One use of this function is to temporarily exit from the Terminal while still 'Online', by selecting a language (eg *BASIC).

One reason for doing this is to examine a program which has just been downloaded as telesoftware from a database. You will notice that the screen is 'windowed' when you do this, leaving the top line and the 'Online' banner on display, to remind you that you are still connected to the telephone network. Also, note that actually *running* a downloaded program will almost invariably clear the whole screen *and* destroy the Terminal software in memory — so beware! It is usually better to save a downloaded program immediately after downloading, and to run it later when 'Offline'.

Problems

If your command causes an error to occur within the operating system, a standard error message will be displayed in red. If this happens, check your command and try again.

Please make sure that you understand the implications of the less familiar commands, as your input is not checked by the Terminal software, and so it is possible to cause some unexpected effects!

There are some *FX commands which, if entered, will immediately be reset to values required by the Terminal software — these include *FX (Input Channels), *FX4 (Cursor Editing), *FX7 and *FX8 (RS423 Baud Rates) and *FX12 (Key Repeat Rate).

Options

(See the section below on the Configuration Command function for details of reconfiguring the Terminal's various options).

Whenever an Operating System Command is entered, the screen scrolls by at least one line. If this is annoying, the scrolling action may be turned off with ?75,0. When scrolling is turned off in this way, any screen output generated by the command (except error messages) will appear in a small window at the bottom right of the screen.

Configuration Command Function — (?cf) key **SHIFT** + **f 1**

The Terminal software is initially set up to perform in the way its designers believe is best for the majority of users. However, many aspects of Terminal operation may be adjusted to suit special tastes and applications.

Where a function can be adjusted in some way, details of the possible configurations are given under the heading **Options**. Also, a complete list of configuration commands appears at the end of this description of the Terminal.

The Configuration Command function is used to select a particular reconfigurable element of the software, and to give the element a new value.

To enter a Configuration Command, press **SHIFT** + **f 1**. You will see a query (?) prompt, and a flashing cursor.

Now enter the number of the configurable element you wish to alter (these are numbered from 0 to 95), then a comma, then the new value for the configurable element (this must be a number between 0 and 255), and finish with **RETURN**.

For example, entering

?75,0

will stop the screen scrolling after an Operating System Command has been entered.

Again, please make sure you understand the implications of any reconfiguration of the Terminal, as it is possible to upset the operation of the software with this function.

Problems

If the Terminal cannot understand your configuration command, it will display the simple error message

?

in red.

If this happens, check the command and try again.

Any other problems will be caused by setting an element to an inappropriate value, and can usually be cured by re-entering the default value (see the list of commands for defaults), or by trying again.

Keys Function — (Kys) key **f2**

If you are a regular user of the BBC Micro, you will know that the red function keys are normally used to simplify the entry of long and commonly used strings of characters, and so it will come as no surprise to learn that they can be used for the same purpose within the Terminal software.

Your own user-defined strings are available at all times by pressing **CTRL** and the relevant function key, as indicated by the Help window.

As usual, function key strings can be defined by using the Operating System Command function to enter a *KEY command. For example, entering

***KEY9 *910#**

will allow you, when 'Online', to go straight to the CommuniTel (or Prestel) Online Editor, by pressing **CTRL** and **f9**.

Function key strings can also be very useful for entering telephone numbers (see the **Call** function), and, in the case of Prestel at least, for entering the 14-character Customer ID and password required each time that you call!

However, to make the best use of function key strings in the context of the Terminal, it should be possible to program the keys quickly and easily by loading a set of key definitions from your local disk.

The Keys function does just this, by scanning the current viewdata frame for concealed key definitions, and programming the keys accordingly.

The scanned frame may be a 'live' frame from a remote database, or, more often, a frame from your own local database, containing a personalised selection of key definitions.

So, suppose you had a frame called "Directory" on your local database, containing concealed function key definitions for your favourite database telephone numbers, log-in sequences and page numbers.

To program the function keys from this frame, you would use the **Load Frame** function to load the frame "Directory", and then press **f2** to use the Keys function to program the keys from the frame.

So, the Keys function simply programs the user-defined function keys from definitions concealed on the currently-displayed frame.

If the frame does not contain any definitions, then no keys are programmed.

If only *some* of the keys are defined in the frame, then the other keys will retain their original strings.

However, it is also possible to conceal other Operating System commands in the frame, to be executed by the Keys function.

In particular, concealing the command

***FX18**

before any key definitions, will ensure that *all* the keys are cleared before any are redefined —this has the advantage of avoiding a 'Bad Key' error, caused by clashing key definitions.

Creating Key Definition Frames

To create a frame which contains your own function key definitions, use either the CommuniTel Hey Presto Editor, or perhaps more conveniently, the Terminal's Edit function.

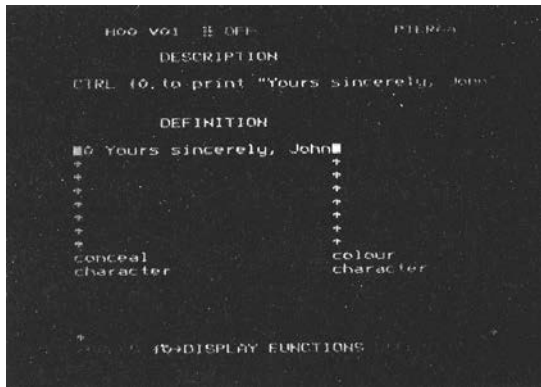
You can decorate the frame in any way you wish — only concealed text will be used to program the function keys. However, you will need to include a description of each definition, as well as the definition itself, to remind you, when you use the frame to programme the function keys, of what the keys are being programmed to do!

Each definition should begin with a **Conceal** character (**SHIFT** + **CTRL** + **f7** in the Edit function), followed by the number of the key to be defined, followed by a space, followed by the definition itself, followed by any colour control character, to turn off the conceal mode (**SHIFT** + **f1** ... **f7** or **CTRL** + **f1** ... **f7** in Edit). This colour code **MUST** be included as it is used to terminate the function key definition. The use of a colour code to terminate the definition obviously also means that a colour code cannot be used within a definition.

As an example, to define function key **CTRL** + **f0** to produce the string

Your sincerely, John

include the following in your frame:



If a key definition runs off the end of a line, continue it on the next line, but begin the continuation line with another conceal character:

```
●0 aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa
●aaaaaaaaaaaaaaaaaaaaaaaaaaaaa●
```

where the ●s are the conceal and colour characters.

To clear all keys before redefining them, conceal *FX18 at the **top** of the frame, before the key definitions (the Keys function scans the frame from top to bottom!):

● **F X 1 8** ●

where the ●s are the conceal and the colour characters.

Having created your key definition frame, save it, making sure that all key definitions are concealed when saved, and then test it with the Keys function — your function keys should now be programmed.

Terminal Functions in Key Definitions

As well as normal keyboard characters, it is possible, and also very useful, to include Terminal functions within function key definitions.

For example, the following function key (**CTRL** + **f0**) string Calls a Prestel computer, logs-in with the user's Customer ID and password, goes to a mailbox frame, Loads in a pre-edited mailbox message from disk, Sends the message, and then Leaves the Prestel computer!

```
● 0 || F 3 || M 0 1 6 8 6 0 3 1 1 || M 1 2 3 4 5 6 7 8 9 0 A B C D ||
    F B * 8 8 #
● || F 6 || M M Y M E S S a || M || F C || F 4 || M ●
```

(where **||** is the 'vertical bar' character !!)

The string breaks down as follows:

 F 3	Call Function
 M	RETURN to confirm
0 1 6 8 6 0 3 1 1 M	Enter telephone number, wait for connection
1 2 3 4 5 6 7 8 9 0	Enter Customer ID
A B C D	Enter Personal Password
 F B	Pause for Prestel to stop sending "Welcome" page
* 8 8 #	Go to mailbox frame 88a
 F 6	Load Frame function
 M	RETURN to confirm
M Y M E S S a M	Enter Frame ID
 F C	Send function
 M	RETURN to confirm
 F 4	Leave function
 M	RETURN to confirm

Notice that whenever the **RETURN** key would be pressed at the keyboard, the sequence **|| M** is used — this is standard BBC Micro practice, where **|| M** is the same as **CTRL M** at the keyboard, is the same as **RETURN**.

Similarly, whenever a function key would be pressed at the keyboard, the sequence **|| F K** is used, where k is a digit or a letter.

Try this experiment — enter **CTRL F** at the keyboard, followed by **0**. This should have the same effect as pressing the Help key, **f0**. Similarly, **CTRL F** then **3** should select Call (**f3**), and so on. The same effects are obtained within key strings by **|| F 0** and **|| F 3** respectively.

Use the following sequences within function key definitions to invoke the various Terminal functions:

II	F	0		Help
II	F	1	<command> II M	Operating System Command
II	F	2		Keys
II	F	3	II M <number> II M	Call
II	F	4	II M	Leave
II	F	5	II M II M II M II M	Download (and Save File with default name)
II	F	6	M <filename> II M	Load Frame
II	F	7	II M	Edit Frame
II	F	8	II M <filename> II M	Save Frame
II	F	9	II M	Print Frame
II	F	@	II M	Exit
II	F	A	<command> II M	Configuration Command
II	F	B		Pause
II	F	C	M	Send
II	F	D	M	Hold
II	F	E	II M M	Save File (with default name)
II	F	F	II M	Zip-Send Frame
II	F	G		
II	F	H	II M <filename> II M	Delete Frame
II	F	I	II M	Catalogue

Editing Functions in Key Definitions

Just as for Terminal functions, when using the **Edit** function the user-defined function keys can be used (if selected), and can incorporate the colour and other control codes normally obtained on

f0 ... f9, SHIFT f0 ... f9, CTRL f0 ... f9 and SHIFT CTRL f0 ... f9.

And again, before selecting the Edit function, a frame containing a set of concealed key strings can be Loaded, and used to program the user defined keys via the Keys function.

For example, the following key definition, when used within the Edit function, causes a message to appear in Double Height, Flashing in White on a Blue Background:

● 0 II F D II F i II F G II F H II F a H e l l o t h e r e ! ●

Use the following sequences within keystings to invoke the various editing options:

II	F	p	Edit Help Window
II	F	q	Insert Character
II	F	r	Delete Character
II	F	s	Insert Line
II	F	t	Delete Line
II	F	u	Erase to End of Line
II	F	v	Home Cursor
II	F	w	Set/Unset Tab Stop
II	F	x	
II	F	y	

II	F	@	Exit Edit (Interlock/End)
II	F	A	Red Text
II	F	B	Green Text
II	F	C	Yellow Text
II	F	D	Blue Text
II	F	E	Magenta Text
II	F	F	Cyan Text
II	F	G	White Text
II	F	H	Flash
II	F	I	Steady

	F	P	Edit Help Window
	F	Q	Red Graphics
	F	R	Green Graphics
	F	S	Yellow Graphics
	F	T	Blue Graphics
	F	U	Magenta Graphics
	F	V	Cyan Graphics
	F	W	White Graphics
	F	X	Graphics Mode On/Off
	F	Y	Put Graphics

	F		Abandon Edit (Interlock/Start)
	F	a	Double Height
	F	b	Single Height
	F	c	Separated Graphics
	F	d	Contiguous Graphics
	F	e	Release Graphics
	F	f	Hold Graphics
	F	g	Conceal
	F	h	Black Background
	F	i	New Background

Problems with the Keys Function

The Keys function itself simply scans the current frame for concealed strings beginning with a digit or with a star (*), and passes these to the Operating System as *KEY< digit > or normal 'star' commands.

Therefore, the success of the function depends on a faultlessly edited key definition frame.

Unfortunately, the Operating System returns a blanket error, 'Bad Key', to cover any problems in *KEY commands.

There are three main reasons for this error occurring.

The first is that the defined key string is not formed properly. For example, the definition

● 1 0 1 6 8 6 0 3 1 1 M ●

is attempting to program *KEY1016860311, and so will cause an error — a space should separate the 1 and the 016860311.

The second likely reason is that the string is not terminated properly with a colour control character, or that the string passed to the Operating System exceeds 80 characters (this is a limit set by the Terminal software).

The third likely reason is that the Operating System's function key buffer has overflowed — remember that a *total* maximum of about 240 characters only may be stored as key definitions. This problem is more likely to occur if the keys have not all been cleared prior to reprogramming — it is always a good idea to conceal *FX18 at the top of a key definition frame.

If you cannot easily find an error in a key definition frame, try overwriting all the Conceal characters with spaces, and then reconceal definitions one at a time and test with Keys, until the error recurs — you will then have found the offending string.

Options

The preceding comments assume that CTRL F || F is used to indicate a Terminal or Edit function in key strings, as this is the default case. This character can be altered using ?0,<ASCII code>. For example, ?0,64 would change it to the 'at' character (@), so that @3 would invoke the Call function, and so on. This option can be useful if you are making much use of functions within key strings.

Use of *EXEC Files

As well as user defined function key strings, it is also possible to *EXEC a command file through the Terminal, via the Operating System Command function.

Because it is often not possible to encode the character **CTRL F** in an EXEC file, the 'red text' character normally available on **SHIFT + f 1** can be used in its place, or, alternatively, ?0 can be used to select another character for this purpose.

Also, the **RETURN** code can be entered directly into EXEC files, rather than using **II M**.

These points apart, EXEC files may be used in much the same way as key strings.

Pause Function — (Pse) key **SHIFT + **f 2****

Although included amongst the other Terminal function keys, Pause has no effect when used directly from the keyboard — it is intended solely for use within user defined function key strings (as **II F B**) and *EXEC command files.

It has the effect of waiting until the remote database has finished sending data to the Terminal, and so can be used to synchronise communications when using the Terminal in semi-automatic mode via key strings or command files.

In particular, Prestel maintains a very small buffer for user input, and will lose data if the terminal 'gets ahead' of the database, and so the use of Pause at strategic points within the flow of transmitted data will avoid these problems.

It will become obvious, when developing semi-automatic applications in practice, exactly where characters are being lost by the host database, and so where Pauses are required.

Note that it is not necessary to precede Terminal functions themselves with a Pause, as the functions automatically wait until the remote database has finished sending data to the Terminal.

Options

The length of time for which the Pause function will wait depends on the setting of the 'response delay', configured via ?15 and ?16. However, this delay value is widely used for synchronisation within the Terminal software, and its adjustment is not recommended.

If a Pause of more than one 'response delay' unit is required at any point, use multiple Pauses to achieve the required delay.

Communications Functions

Before dealing with the individual function keys, this Communications part begins with some general Viewdata functions available from the Terminal dealing with getting information from and sending information to remote Viewdata systems, once logged on.

The remainder of this section then deals with the Call, Send, Leave and Hold functions in detail.

General Viewdata Functions

The following sections describe the various special functions which are available when 'Online' to a remote database.

Some of these functions are provided by the central database, some are provided by a combination of software at both ends of the link.

Searching for Information

Ways of Getting Around in a Viewdata Base

After you've logged onto a Viewdata system, the first frame you are presented with is the 'root' page. This is generally '0a', but if it is some other, it is worth making a note of it so that you can get back to it later.

You will know from your experience of the CommuniTel Search/View system that it is possible to browse through a Viewdata base using the keys **0** to **9** and hash (#) alone, following the routings indicated on each frame, and the same is true of remote databases accessed via the Terminal.

You will also know that, if you already know the name or number of a particular page, you can go directly to the 'a' frame of that page by entering a star (*) followed by the page name or number, followed by hash (#).

Note that while CommuniTel databases allow alphabetic page names as well as page numbers, Prestel allows only page numbers.

If you make a mistake when entering a page name, you can cancel the name by entering star star (**), and start again.

If you want to 'backtrack' through the frames you have previously viewed, enter star hash (* #) to request the frame you viewed immediately before the current frame. Note that Prestel allows you to backtrack through three frames, while CommuniTel databases allow backtrack through up to ten frames.

If a frame is corrupted on the screen by line noise, as happens occasionally, you can request retransmission of the frame by entering star zero zero (* **0 0**). In the case of a chargeable frame on Prestel, this retransmission does *not* incur a further frame charge.

Some Prestel frames, such as airport flight arrivals and departures, and stock market prices, are updated very frequently. If you have one of these frames on display, and you want to receive the latest update, enter star zero nine (* **0 9**). Such frames are usually chargeable, and requesting an update in this way *will* incur a further frame charge.

If you become hopelessly lost within a database, it is usually possible to escape back to its 'root' or Index page, from which all other pages are ultimately accessible, by entering star zero hash (* **0** #) — this is effectively a request for frame 0a of the database. If you were presented with some other root page number after logging on, then instead, enter star root-page-number hash (eg * **3 0 0** # for Micronet800 on Prestel).

Viewdatabases are arranged hierarchically — that is, a single index at the 'top' of the database directs you to a set of sub-indices, each sub-index takes you on to a further set of sub-indices, and so on until you get to information you are looking for.

Frame Tagging is arranged to coincide with this hierarchical arrangement, so that if you 'Tag Back' several times to a particular tagged frame, and then subsequently go on to Tag further frames, you will *overwrite* the tags which originally appeared later in the list.

In most cases, this is the way you would intuitively expect Frame Tagging to work, and you do not notice the fact that previous tags are being overwritten.

However, if you particularly want to *preserve* a set of existing tags beginning with a particular tagged frame, Re-Tag the frame by pressing **SHIFT** + Cursor Up (↑) — this will create another tag for the current frame at the *end* of the list, so that subsequent Tagging will not overwrite the earlier entries.

Tagging is easier to use than it is to describe, and in the majority of cases, simple Tagging and Tagging Back suffices to keep a set of 'bookmarks' in the database.

Note that it is possible to tag *any* frame within a page, and still be able to return to it. However, there will be a delay in accessing frames other than the 'a' frame of a page, as each frame has to be accessed in turn.

Also, there is a limitation, in that it is not possible to recall frames which occur *after* a 'dynamic' Prestel frame — that is, a frame after which several continuous frames of data are received without you having to press the Hash key. However, Tagging Back or Forward to such a frame will take you close enough to it to be able to find it manually.

Sending Information

Filling-In Input Frames

For the purposes of this discussion, a 'Input Frame' is any viewdata frame where the flashing editing cursor is **visible**, and you are invited to enter information. It includes the CommuniTel and Prestel Online Editors (used to create and edit information frames and 'In-Tray' frames on the remote database), and Prestel message frames, including IP Response frames (used to send messages to Information Providers on Prestel) and Mailbox frames (used to send personal messages to other Prestel subscribers).

Whenever the editing cursor is visible in a frame, the keys at the right hand end of the keyboard revert to their normal editing functions, with the exception of the **RETURN** key, which still generates hash (#) — if you want to enter a 'real' Carriage Return code, use **CTRL** + **RETURN**.

The other special functions which normally occupy these keys are still available in the case of Prestel Response and Message frames, but you must press the **CTRL** key at the same time as the relevant editing key to access the key's special function.

If you want to enter an 'ESCAPE sequence' to produce colour control codes (for example 'ESCAPE, A' generates the 'Red Text' control code), press **SHIFT** + **RETURN**, which causes the Terminal to send the **ESCAPE** code, followed by the second character of the sequence (eg **SHIFT** + **RETURN**, **A**).

However, it is probably more appropriate to use the Online **Edit** function if you are creating a complex frame, as this generates the necessary escape sequences automatically from the familiar editing function keys.

Better still in these cases, is to use the CommuniTel Hey Presto Editor or the Terminal's Edit function while **Offline**, and then go 'Online' and use either the **Send** function or the **Zip-Send** function to transmit the prepared frame complete.

If you *do* use the normal Online terminal to fill-in response frames, the following editing functions are available when the cursor is visible:

Cursor Back	press Cursor Back (←)
Cursor Forward	press Cursor Forward (→)
Cursor Up	press Cursor Up (↑)
Cursor Down	press Cursor Down (↓)
Hash (#)	press RETURN
Carriage Return	press CTRL + RETURN
Escape (ESC)	press SHIFT + RETURN
Delete	press DELETE
Copy	press COPY

Note that the **DELETE** key deletes the character immediately before the cursor by sending 'Cursor Back, **SPACE**, Cursor Back', and is therefore quite slow in operation. The **COPY** key simply re-transmits the character under the cursor. The solid square block or 'blob' character, which is not normally available on the keyboard, is obtained by pressing **CTRL** + Underline (␣).

Filling-In Prestel Message Frames

Prestel message frames include IP response frames and Mailbox frames, used to send messages to Information Providers and to other subscribers.

Message frames are unusual, in that they consist of several separate **fields**, each of which is completed separately and terminated with a hash (#), before going on to the next. When all fields have been completed, you can press **1** to send the message to its addressee, or press **2** not to send the message.

Within each field, all the editing commands mentioned above may be used, but the cursor cannot be moved *out* of the field into another. Generally, Prestel ignores any editing commands which are invalid for a particular field. Some message frames allow the insertion of colour control escape sequences, and some do not — again, invalid codes are ignored.

This is a reminder of the editing keys when filling-in a message frame:

Cursor Back	press Cursor Back (←)
Cursor Forward	press Cursor Forward (→)
Cursor Up	press Cursor Up (↑)
Cursor Down	press Cursor Down (↓)
Hash (#)	press RETURN
Carriage Return	press CTRL + RETURN
Escape (ESC)	press SHIFT + RETURN
Delete	press DELETE
Copy	press COPY

The Cursor Back, Forward, Up and Down keys simply move the cursor around within the current field, but the cursor cannot be moved outside the field.

Hash (**RETURN**) finishes the current field by *clearing* any characters which are *after* the cursor position up to the end of the field, and then moving on to the next field.

Carriage Return (**CTRL** + **RETURN**) returns the cursor to the start of the current field, into a special 'dead space' immediately before its first character. Also, the cursor starts in this 'dead space' before any characters are entered into the field. As soon as the field's first character is entered, the cursor skips out of the 'dead space' and into the field's first actual character position.

When the cursor is in the 'dead space' at the start of a field, Hash (**RETURN**) will move on to the next field, *preserving* the existing contents, if any, of the current field. Carriage Return (**CTRL** + **RETURN**) on the other hand, will skip the cursor back to the beginning of the *previous* field.

As you can see, the editing rules for Prestel message frames are quite complicated!

It is also possible to make use of the normal Prestel functions when filling-in Prestel message frames, although some care is required:

Star	(*)	press Cursor Down (↓)
Hash	(#)	press RETURN or Cursor Forward →
Cancel	(**)	press DELETE
Backtrack	(* #)	press Cursor Back (←)
Repeat	(*00)	press COPY
Update	(*09)	press SHIFT + COPY
Index	(*0#)	press Cursor-Up (↑)

The first point to make is that you will *lose* some or all of the contents of your message if you use Star, Cancel, Backtrack or Index while completing a message frame — hence the need for care! However, if you *really* want to use one of these functions, they are available as required.

Repeat (**CTRL** + **COPY**) is useful when completing a message frame, as it retransmits the frame, leaving the contents of all fields intact, and returns the cursor to the start of the first field.

If a message frame is corrupted by line noise, it is always a good idea to use Repeat (**CTRL** + **COPY**) to retransmit the frame, until you receive a 'clean' copy.

You can then resume where you left off by 'Hashing' (RETURNING) through each field in turn until you reach the one that became corrupted, and by then using the cursor keys to reposition the cursor.

If you want to send a Mailbox message to more than one addressee, then Repeat (**CTRL** + **COPY**) the frame after you have sent it to the first addressee, enter the next addressee's Mailbox number, then 'Hash' (**RETURN**) over the text fields of the message and then send it, and so on.

It should be pointed out once more that, whenever possible, it is invariably easier and quicker to prepare messages while 'Offline', and then go 'Online' and transmit the message with the **Send** function.

Communication Function Keys

Call Function — (CII) key **f 3**

The Call function is used to take the Terminal 'Online', by connecting it to a remote database, via the modem and the telephone network.

The Terminal software supports two types of modem — the CommuniTel/DaCom DSL2123AD intelligent autodialling modem, and any general 'dumb' viewdata (1200/75 Baud) modem. The Call function is described separately below for each of these types of modem.

Before Calling a remote database, you should of course ensure that your modem is connected both to the computer and to an unused telephone socket, as recommended for the particular modem in use.

Online/Offline Problems

Occasionally, things can go wrong in such a way as to fool the Terminal so that it displays 'on-line' when it is clearly offline, or 'offline' when it is still online. The configuration command ?71 must be used to set it right using **SHIFT** + **f 1**, followed by 71,0 sets it to offline, while 71,1 sets it to online.

Call using the CommuniTel intelligent modem

To Call a remote database, press **f 3** and press **RETURN** to confirm the function.

A flashing cursor appears, with the message 'Enter and RETURN' — at this point you should enter the telephone number of the remote database you wish to call, without any spaces or punctuation marks, and finish it with **RETURN**.

If you are calling a CommuniTel remote Host database, and wish to use the **Zip-Send** function, you should precede the telephone number with 'BBC' and a space — this tells the modem to enable its 'fast send' facility.

For example, if a CommuniTel Host database is on telephone number 01-234 5678, then you should enter:

BBC 012345678 and press **RETURN**

Having entered the telephone number, a small window appears at the bottom right of the screen, and the message 'DIALLING' appears, followed by each digit of the telephone number as it is dialled by the modem.

When the modem has dialled the number, the message 'WAITING' appears in the window, indicating that the modem is waiting for a reply from the remote database.

Finally, you may see the message 'CONNECTED' appear in the window for a moment, before the screen clears, the 'Call' legend is replaced by 'Online', and the 'welcome' page of the remote database is displayed on the screen.

At this point you are connected to the remote database, and should follow whatever instructions it gives you for logging-on and accessing its information. Also, the following section gives details of the additional Terminal functions that are available when 'Online' to help you make use of the database.

When you have finished your session on the remote database, use either the **Leave** or the **Hold** function to take the Terminal 'Offline' gracefully.

Problems with the CommuniTel modem

The CommuniTel/DaCom modem is extremely (and unusually!) reliable in operation, and the Call function is successful more often than not.

However, you will know from your own experience with the telephone network that making a call may sometimes be subject to a number of difficulties.

● Modem?

If the error message 'Modem?' appears in red, it could be because the modem is not connected to the computer, or to the mains, or that it has 'noise' in its buffer. To clear this error, try one, or preferably both, of the following:

1. Check your modem's connections.
2. Press the modem's RESET button (which amongst other things clears any buffer 'noise').

..... and try again.

● WHAT?

If the error message 'WHAT?' appears in red, then the modem could not understand the telephone number you entered, usually because it has been entered with spaces or punctuation marks in it. If this is the case, try again.

● DIALLING — no auto dialling

If the 'DIALLING' message is displayed, but is not then followed by each digit to be dialled in turn, then the modem is not connected to the telephone line, or if it is, it is not receiving dial tone. If this is the case, press **ESCAPE** to abandon the Call, check your connections and your telephone line, and try again. If the modem is simply not plugged in, plug it in immediately, and the modem should begin to dial as soon as it detects dial tone.

● WAITING — NO ANSWER

If the number you call is engaged or unobtainable, or if it does not answer, or if you accidentally obtain a wrong number, the 'WAITING' message will remain on display for an uncharacteristically long time, and eventually the error message 'NO ANSWER' will be displayed in red. If this is the case, try again. If you suspect that the number is engaged, you should wait for a reasonable time for the number to become available before calling again.

● Call — No reply

If the 'WAITING' message disappears, but the 'Call' legend remains on display and the screen does not clear, and eventually the error message 'No reply' is displayed in red, then the remote database has failed to respond normally, or your connection is suffering badly from 'line noise'. In either case, press **ESCAPE** to abandon the Call, and try again. If you experience this error persistently with a particular remote database, it is possible that the database is not transmitting the normal initial sequence of characters — if this is the case, use Configuration Command ?39,0 to disable the usual software checks for this sequence, and try again.

● DISCONNECTED

If your call is successful, but at some point the error message 'DISCONNECTED' is displayed in red, then your connection has been lost for some reason (usually because of persistent noise on the line), and the modem has disconnected itself. In this case, use Call again to reconnect to the database if required.

● Disconnected

If your call is successful, but the error message 'Disconnected' is suddenly displayed in red, it is because you have not touched the keyboard for about 10 minutes, and the software has disconnected the modem from the line to avoid incurring further telephone charges. The period of inactivity after which this occurs can be configured with Configuration Commands ?19 and ?20.

Call using a 'dumb' modem

To Call a remote database, press **f 3** and press **RETURN** to confirm the function.

A flashing cursor appears, with the message 'Enter and RETURN'. A telephone number is normally entered at this point, but as you will have to do the dialling yourself, there is not much point in entering a number (although no harm is done if you do) — just press **RETURN**!

At this point, the message 'Please connect ...' appears in a small window at the bottom right of the screen and remains on display for about 10 seconds before disappearing.

When the 'connect ...' message appears, you should manually dial the appropriate telephone number, and wait for the characteristic high-pitched 'carrier' tone from the remote database, and then, as soon as possible after you hear the carrier tone, follow whatever instructions apply to your modem for switching it Online and so on.

After a moment or two, if all is well, the screen is cleared, the 'Call' legend is replaced with 'Online', and the 'welcome' frame of the remote database is displayed.

At this point you are connected to the remote database, and should follow whatever instructions it gives you for logging-on and accessing its information. Also, the following section gives details of the additional Terminal functions that are available when 'Online' to help you make use of the database.

When you have finished your session on the remote database, use either the **Leave** or the **Hold** function to take the Terminal 'Offline' gracefully.

Problems with a 'dumb' modem

You will know from your own experience with the telephone network that making a call may sometimes be subject to a number of difficulties.

As the software is unable to check connections to a 'dumb' modem, it is particularly important that you check the modem's connections to the computer, the telephone and to the telephone line before you try to Call a remote database.

If when you try to dial a number, you do not receive dial tone, re-check the connections between the telephone, the modem and the telephone line, and try again.

If the number you call is engaged or unobtainable, or if it does not answer, or if you accidentally obtain a wrong number, or if you do not eventually hear 'carrier' tone, replace the handset and try again. If the number is engaged, you should wait for a reasonable time for the number to become available before calling again.

If you hear carrier tone and switch the modem 'online', but the 'Call' legend remains on display and the screen does not clear, and eventually the error message 'No reply' is displayed in red, then the modem is not connected to the computer, or the remote database has failed to respond normally, or your connection is suffering badly from 'line noise'. In any of these cases, press **ESCAPE** to abandon the Call, check your connections and try again. If you experience this problem persistently with a particular remote database, and you are sure your modem is connected to the computer, it is possible that the database is not transmitting the normal initial sequence of characters — if this is the case, use Configuration Command ?39,0 to disable the usual software checks for this sequence, and try again.

If your call is successful, but at some point the error message 'Disconnected' is displayed in red, then your connection has been lost for some reason (usually because of persistent noise on the line). In this case, you should press any key to clear the error message, and then switch the modem 'Offline' as requested by the 'Disconnect ...' message which follows. You can use Call again to reconnect to the database if required.

7 The Telesoftware Terminal

The 'Disconnected' error message will also be displayed if you have not touched the keyboard for about 10 minutes, in which case the software will ask you to disconnect the modem from the line to avoid incurring further telephone charges. The period of inactivity after which this occurs can be configured with Configuration Commands ?19 and ?20.

If you press **ESCAPE** at any time during the Call function, the message 'Disconnect' will appear in the sm2 window at bottom right of the screen. You should switch the modem 'Offline', and check that the modem has dropped the line by listening for dial tone at the receiver.

Options

In order to allow for the wide variety of 'dumb' viewdata modems in existence, there are several configuration commands that can be used to tailor the Terminal software to a particular 'dumb' modem.

Firstly, to select the software for a dumb modem, rather than the CommuniTel/DaCom modem, use ?90.

Most 'dumb' modems send a signal (called 'data carrier detect', or DCD) to the computer (on its 'clear to send', or CTS, terminal), and if this is the case, the default configuration will ensure that the Terminal can detect whether the modem is 'Online' and receiving carrier tone or not. If your modem does not supply this signal (in which case you will find that you cannot Call successfully), alter the configuration with ?89.

If the Terminal software is checking the DCD signal from the modem, then the period for which the software will tolerate loss of this signal can be configured by ?29 and ?30. The default period is 60cS (600mS), as recommended by BT, but this may be increased if your telephone line is subject to unusually long bursts of line noise.

Most 'dumb' modems communicate with the computer via the RS423 serial port at rates of 75 and 1200 Baud, and this is the default configuration. If your modem uses different Baud rates, use ?95 to reconfigure the software accordingly. However, note that the modem should communicate with the remote database at 1200/75 Baud receive/transmit, as these are the universal rates for viewdata systems.

The length of time for which the 'Please connect ...' and 'Disconnect ...' messages are displayed may be configured by ?91 and ?92, and ?93 and ?94 respectively.

Send Function — (Snd) key **SHIFT** + **f 3**

The Send function is used to transmit the contents of a prepared and saved frame to a remote database. The transmission is 'protected', in that any transmission errors are detected, causing an error message to be displayed, and the Send to be abandoned. It thus protects against the transmission of corrupted information.

Send can be used to transmit the text of Response Frames and Mailbox Frames to Prestel, and can also be used to transmit complete information frames to both the Prestel and the CommuniTel Host Online Editing systems. However, note that the Zip-Send Frame function can send complete frames to a CommuniTel host at much higher speed, given a CommuniTel/DaCom modem at each end of the link.

The Send function may take anything from a few seconds to transmit a few lines of message text, up to about three minutes to transmit a full frame of information.

However, even at these low transmission rates, it is usually quicker and easier to create a frame 'Offline' and then to transmit its contents using Send, than it is to create the frame manually while 'Online'.

The Send function operates by scanning a prepared frame, which has already been loaded onto the screen, 'over' the existing contents of the remote database frame, and transmitting each character as the cursor passes over it. In the case of a complete information frame, the cursor simply travels along each line of the frame until the end of the frame is reached. In the case of a message frame, the cursor skips from the end of one message field to the beginning of the next, so that only the *text* of the message fields is transmitted.

The following sections describe the use of Send to transmit complete information frames to the CommuniTel Host or Prestel Online Editors, and to transmit the text of Response frames and Mailbox frames to Prestel.

Sending Complete Frames

This section describes how to Send a complete frame to the CommuniTel Host or Prestel Online Editor. You are only likely to use this function to send a frame to a CommuniTel Host if you are using a dumb modem, rather than the CommuniTel intelligent modem as supplied with level 2. In the latter case, you are far better off using the fast **zip-send** function.

Before sending the frame, you should have created it and saved it in your own local database.

Go 'Online', enter the Online Editor (page *910# on both the CommuniTel Host and Prestel), and enter or select the frame name on the *remote* database under which you wish to save, or whose contents you wish to replace with, the frame you have pre-prepared in your *local* database.

See the separate Chapter, **Sending Messages and Frames to Another CommuniTel Host System**, or refer to the online editing documentation of other Viewdata systems for the precise details of entering the edit details if it is not self-evident from the screen.

Eventually, you should reach the point where the Online editor is waiting for you to start altering the frame contents, with the cursor flashing in the top left hadn corner of the screen.

Now use the **Load Frame** function to load your prepared frame 'over' the existing display.

Finally, press **SHIFT** + **f 3** and **RETURN** to confirm, to Send the frame to the Online Editor. As the contents of the frame are transmitted, you will see the cursor moving through the frame, until the end of the frame is reached.

At the end of the frame, the Send function transmits the sequence 'ESCAPE, J' (Interlock/End) to signal to the Online Editor that the frame has been edited, and the function ends.

7 The Telesoftware Terminal

In the case of the CommuniTel Host Online Editor, the frame contents are immediately re-transmitted back to the Terminal, and you are asked to check and then Re-Edit or Send the frame.

In the case of the Prestel Online Editor, you are returned to the main Editor menu at this point.

In either case, the correctness of the transmitted frame is guaranteed, as each character is checked as it is sent, and any transmission error during Send causes an error message to be displayed and abandons the function.

Note that if the Terminal is configured as supplied, it is possible to send part of a frame, by manually positioning the cursor before the Send function is selected, and by pressing **ESCAPE**, if necessary, when the required portion of the frame has been sent. The same effect can also be achieved without the use of Send, by manually running the cursor over the contents of the loaded frame using the **COPY** key.

Problems

If a transmission error is detected during the course of the Send function, the error message 'Noise' will be displayed in red, and the function abandoned.

If this is the case, you should manually clear the contents of the frame (optional), home the cursor to the top left of the screen, re-Load the prepared frame from your local database, and try again.

Alternatively, you can place the cursor under the white square which has appeared, correct it, press **RETURN** to set the cursor to the start of the current line, and restart the send from there.

Another alternative combines the last two methods. After reloading the frame and homing the cursor, use the down cursor key to bring the cursor down to the start of the line that it stopped on, and resend from there.

NOTE: These last two alternatives will only work providing you have not reconfigured ?69, or have reset it back to ?69,2 (the default).

If you encounter persistent 'Noise' errors, it is usually advisable to abandon the current call, and Call again in the hope of obtaining a better telephone connection.

Options

● Frames or Messages

As supplied, the Terminal is configured, via ?69, to send frames to a remote Online Editor, rather than Prestel message frame contents. This configuration allows Send to be used to transmit parts of frames as well as complete frames.

Optionally, it is possible to configure the terminal via ?69 so that either complete frames are sent, or message contents are sent, depending on the cursor position at the time of selecting the Send function. This scheme works quite well in practice, as complete frames are normally sent beginning with the cursor at the top left of the screen, while message frames rarely start with the cursor in that position. If you make use of both types of Send, it is probably better to configure your Terminal so that the selection of the type of Send is automatic, depending on the initial cursor position.

● Overwriting an Existing Frame

A further configuration option, ?35, allows you to select either complete transmission of frame contents, or transmission of each line only up to the last character in the line. The default setting is the latter. On reaching the last character in a line, it causes a Carriage Return and Line Feed to be sent instead of the trailing spaces, which generally speeds up frame transmission considerably.

However, if you are using the amend option, available on Prestel and some other Viewdata systems, to overwrite an existing frame, then it is possible to change the ?35 option to make it send the full frame contents, including all the trailing spaces in a line. This ensures that when overwriting a frame, none of the original frame 'shows through' the new contents.

To do this, enter **SHIFT** + **f1**, followed by 35,1 and press **RETURN**. Use ?35,0 to reset it back to sending Carriage Return + Line Feed instead of the trailing spaces.

Preparing Message Frames for Sending to Prestel

There are many different Mailbox message frames available on Prestel, and different people seem to prefer different Mailbox frames, so it is up to you to choose one or more frames — see Prestel page *7# for an index to the available message frames, and to the directory of Mailbox subscribers.

Having selected a particular blank message frame, use the Save Frame function to save it into your own local database. You might eventually build a small 'library' of different blank Mailbox frames in your local database.

To prepare an actual Mailbox message for transmission, you should when offline, **Load** and **Edit** one of your saved Mailbox blanks, to include the addressee's Mailbox number, and the text of the message.

It is important that you know the size, at least approximately, of each field of the message frame, and that you do not enter text which overflows any of the fields.

It is also *essential* that you enter a Hash (#) at the end of *each* field, immediately after the last character in the field. Failure to do this will cause the Send function to 'hang' when you try to send the message, and you will have to abandon the function.

Having prepared your Mailbox message using the OfflineEditor, **Save** the completed frame back into your database, using a different name from the mailbox blank.

Sending Message Frames to Prestel

First of all, if you have not already done so, in order to Send a message frame to Prestel, you should reconfigure the Terminal to allow this type of Send — the default setting only allows frame contents to be sent to an Online Editor.

Press **SHIFT** + **f1**, and use the Configuration Command function to enter the command

?69,1

Next, use **Call** to go 'Online' to Prestel, and manually select the *same* Mailbox frame as was originally saved as your blank message template.

Now **Load** your prepared message back onto the screen, and press **SHIFT** + **f3** to Send the message.

You will see the cursor move through each message field in turn, until the end of the frame is reached.

At this point, the Send function will transmit a '1', causing the message to be sent, and you will see a message from Prestel confirming this. The Send function then ends.

● **Problems**

If a transmission error is detected during the course of the Send function, the error message 'Noise' will be displayed in red, and the function abandoned.

If this is the case, you should manually return the cursor to the start of the current message field, using **CTRL** + **RETURN**, re-load the prepared frame from your local database, and try again from the start of the current field.

If you encounter persistent 'Noise' errors, it is usually advisable to abandon the current call, and Call again in the hope of obtaining a better telephone connection.

If the Send function appears to 'hang' towards the end of a field, it is invariably because a Hash (#) has not been edited onto the frame after the last character in the field, or because too many characters have been entered into the field, or because 'invalid' characters have been entered into the field — for example, some Mailbox frames do not allow colour and other control characters.

If this is the case, you must **ESCAPE** from the function, and either enter the rest of the message manually, possibly using the **COPY** key to transmit characters from the screen, or try again, starting with the preparation of your message 'Offline'.

Remember that if you include colour and other control characters into your message, each takes up *two* characters in the field (although the display only shows one character position used), and this reduces the space left available in the rest of the field.

● **Options**

As supplied, the Terminal is configured, via ?69, to send frames to a remote Online Editor, rather than Prestel message frame contents. This configuration allows Send to be used to transmit parts of frames as well as complete frames.

Optionally, it is possible to configure the terminal via ?69 so that either complete frames are sent, or message contents are sent, depending on the cursor position at the time of selecting the Send function. This scheme works quite well in practice, as complete frames are normally sent beginning with the cursor at the top left of the screen, while message frames rarely start with the cursor in that position. If you make use of both types of Send, it is probably better to configure your Terminal so that the selection of the type of Send is automatic, depending on the initial cursor position.

Leave Function — (Lve) key **f 4**

The Leave function is used to leave the current online session on a remote database, and to take the Terminal 'Offline'.

Leave exits from the database via page ***90#**, which causes the remote system to close down its own telephone connection properly.

In the case of a session on Prestel, the use of Leave also has the advantage of warning you if you have any Mailbag messages waiting for you — if so, you have the option to stay online and read your new messages.

From the point of view of the Terminal software, Leave is exactly equivalent to entering ***90#** — the only difference is that leaving directly via page ***90#** will cause the error message 'DISCONNECTED' to be displayed in red, because the terminal was not expecting the call to be lost, whereas Leave closes the terminal's end of the connection down more gracefully.

So, to finish your session online to a remote database, press **f 4** and RETURN to confirm, to Leave smoothly via page ***90#**.

Normally, you will receive a 'goodbye' frame, shortly after which the 'Online' legend will change to 'Offline'.

If you are using a 'dumb' modem rather than the CommuniTel/DaCom modem, you will also receive a message asking you to 'Disconnect ...', and you should switch the 'dumb' modem offline at this point, or otherwise disconnect it from the telephone line.

If you are leaving a session on Prestel, and you have Mailbox messages waiting for you, then you will receive a message to this effect, rather than the 'goodbye' frame. Follow the instructions either to look at your new messages, or to Leave Prestel.

Hold Function — (Hld) key **SHIFT + **f 4****

The Hold function is used to finish the current session online to a remote database and to take the Terminal 'Offline', *without* leaving via page *90#, but by disconnecting abruptly at the Terminal end of the link.

The advantage of this method of finishing the session is that the current frame remains on display — hence the name of the function.

So, to disconnect from the current session and Hold the current frame on display, press **SHIFT** + **f 4** and **RETURN** to confirm. The 'Online' legend will change to 'Offline', and the modem will disconnect the call.

If you are using a 'dumb' modem rather than the CommuniTel/DaCom modem, you will also receive a message asking you to 'Disconnect ...', and you should switch the 'dumb' modem offline at this point, or otherwise disconnect it from the telephone line.

Telesoftware Functions

This section deals with the Download and Save File functions, which automatically decode a data file, which may be a computer program, a word-processed document, a complete CommuniTel database, or any other file of data, and which is held in a remote database encoded in the CET telesoftware format, deposit the file into the computer's memory, and then optionally save the downloaded file onto your local filing system.

Download Function — (DId) key **f5**

When the Terminal is 'Online', the Download function is used to decode a data file which is held in a series of frames on a remote database and encoded in the CET telesoftware format, and to deposit the decoded data into the computer's memory.

Once downloaded, the decoded file can be saved onto your own local filing system using the **Save File** function, which is offered automatically after a successful download.

If it is not possible to fit the whole of a long file into memory at once, you are offered the option of saving the file direct to your filing system as soon as memory is filled.

To use the Download function, first locate in the remote database the CET-encoded telesoftware file you wish to receive.

There are usually a few frames of descriptive text before the telesoftware file itself, so read through these until you find a frame which has (usually at the bottom) a line of strange 'hieroglyphics' and an instruction to start the Download function, such as:

Now press **f5 to download.**

IIAIIgcIIIAnyFileII021IIZ012..SofMac

The 'hieroglyphic' line is called the 'Header Block' of the telesoftware file, and in this case tells you that the name of the file is 'AnyFile', and that it occupies the next 21 frames.

Because the space available to downloading is restricted in this version of the Terminal, **disk** users should always ensure they have sufficient space on disk to save a long downloaded file before they start the Download function.

When you are ready to Download, press **f5** and **RETURN** to confirm.

You will see successive frames of the telesoftware file being scanned and decoded, until the end of the file is reached.

The message 'Downloaded' will then be displayed in yellow, and you will be automatically offered the option of saving the downloaded file to your local filing system — see the next section on the **Save File** function.

Problems

If on pressing **f5** to Download, you are instead offered the Save File function, this is because you previously downloaded a file, but have not saved it. If you *do* wish to save the previous file, press **RETURN** to confirm the save (refer to the next section for details). Otherwise, press **ESCAPE** if you do not want to save the file for any reason, and press **f5** again to download the new file.

1. No room

If there is insufficient space in memory to store the whole decoded file, the error message 'No room' will be displayed in red, and you will be offered a version of the Save File function called **Open File**, which builds a file on your local filing system by transferring blocks of the downloaded file from memory each time it becomes filled, without ever holding the whole file in memory at any one time. This makes it possible to download data files far larger than could be stored in memory.

If this occurs you should press **RETURN** to confirm that a file should be Opened (unless you do not want to save the file for any reason).

The default name of the file, derived from the name in the 'Header Block', is then displayed, with the message 'Enter and RETURN'. Press **RETURN** to confirm the default filename, or enter your own filename and finish with **RETURN**.

Having started this Open File save of the downloaded file, you may see further occurrences of the 'No room' message, but the blocks of data will be saved automatically without you having to intervene.

This version of the Terminal has a very limited memory area for storing downloaded telesoftware, so the 'No room' message is likely to be a frequent occurrence. This should not cause you any problems, but it is important to ensure that you have sufficient space available in your filing system to allow for opening and extending a file. Disk users should remember that if a file grows beyond 16K bytes in length, there is a chance of the Open File function failing with a 'Can't extend' error, if the space allocated to the file on the disk is followed immediately by another file — and this means that the download will have to be abandoned! It is a good idea to maintain a disk specifically for downloaded files, and to keep this disk COMPACTed, so that new files are always added to the 'end' of the disk, rather than into empty spaces on it. You can always copy downloaded files onto another disk later on.

2. Data?

If the error message 'Data?' is displayed in red, then the current frame of telesoftware has been corrupted by line noise. However, the downloader will immediately request retransmission of the frame automatically, up to three times, until it is received uncorrupted. After a third unsuccessful retry, the downloader will stop, with the 'Data?' message on display, and you will be asked to press **RETURN** to confirm continuation of the Download. This will happen repeatedly until the frame is received uncorrupted, or until you press **ESCAPE** to abandon the Download.

3. Block Seq

If the error message 'Block seq' is displayed in red, then the Downloader has been forced to skip one or more frames by a burst of line noise, and has been unable to relocate the missing frame. This error is 'fatal', and the Download is abandoned.

4. Block Count

If at the end of the telesoftware file, instead of the yellow 'Downloaded' message, the error message 'Block count' is displayed in red, then the downloader has discovered a discrepancy between the number of frames specified by the 'Header Block', and the number of frames actually downloaded. If this is the case, you will still be able to select the Save File function manually, but it is possible that you have not received the complete file.

5. Can't open/extend

If the error message 'Can't open/extend' is displayed in red, after having confirmed an Open File save of the downloaded file, then the Terminal was unable to open or extend the file for some reason (please note this is *not* the same as the 'Can't extend' error referred to above). This error is normally caused by the Terminal being incorrectly configured for the type of filing system in use — see Configuration Command ?4.

The above list of possible problems makes downloading appear to be a dangerous business, whereas in practice the majority of telesoftware downloads run faultlessly. However, the comments above for disk users *should* be taken seriously!

Save File Function — (Sve) — key **SHIFT + **f 5****

The Save File function is used to save a *complete* downloaded file from memory onto your local filing system, and is normally invoked automatically immediately after a successful Download.

Otherwise, if you have previously ESCAPed from the Save File function, pressing **SHIFT** + **f 5** will give you another chance to save the file. **Tape** users might prefer to **ESCAPE** from the automatically-offered Save File, and wait until they have gone 'Offline' before saving a lengthy file to cassette.

If you wish to save the downloaded file, press **RETURN** to confirm the save.

The default name of the file, derived from the 'Header Block' is then displayed, with the message 'Enter and RETURN'. Press **RETURN** to confirm the default filename, or enter your own filename and finish with **RETURN**.

The downloaded file will then be saved to your local filing system.

Problems

If a standard filing error message (such as 'Disk full' or 'Cat full') is displayed in red, then correct the filing problem, and press **SHIFT** + **f 5** to retry the Save File function. You will not lose your downloaded program from memory, regardless of the number of times Save File fails.

Frame Filing Functions

This section deals with the Load Frame, Zip-Send Frame, Edit Frame, Save Frame, Delete Frame, Print Frame and Catalogue Frame functions in detail.

These functions are all concerned in one way or another with the filing of viewdata frame images in your own local database and on paper, and with their transfer between databases.

Load Frame Function — (LdF) key **f 6**

The Load Frame function is used to load a viewdata frame image from your local database onto the Terminal's screen display.

Once on the screen, you can Send or Zip-Send it to another database, Edit it, Save it under a different name, Print it, or simply look at it!

To Load a frame, press **f 6** and **RETURN** to confirm.

A flashing cursor will appear, with the message 'Enter and RETURN'. You should now enter the frame name, and press **RETURN**.

If your frame name ends in a lower-case 'frame letter' (eg 'STORYg'), then this title will be accepted by the Terminal.

If your title does *not* end in a lower-case letter (eg 'STORY'), then an 'a' will be added to the end of your frame name (eg 'STORYa'), the cursor will return to the beginning of the frame name, and the message 'Enter and RETURN' will be displayed again.

In this case, press **RETURN** to accept the modified frame name, or re-enter your preferred frame name and finish with **RETURN** — the name will again be checked for ending in a lower-case letter, and the whole process repeated if necessary. Note that you can use the **COPY** key to move the cursor through the frame name towards the 'frame letter' at the end.

When you and the Terminal have agreed upon the frame name, the frame image will be loaded from your local database and onto the screen.

Problems

If a filing system error occurs during loading, a descriptive error message will be displayed in red. If this occurs, check the filing problem and try again.

Zip-Send Frame Function 8 (Zip) key **SHIFT + **f 6****

When the Terminal is 'Online' to a CommuniTel Host Database, and both the Host and the Terminal ends of the link are using the CommuniTel/DaCom modem, the Zip-Send Frame function is used to transmit the contents of a prepared and saved frame in the local database, at very high speed to the remote database — a complete frame can be transmitted in less than 10 seconds.

Note that Zip-Send can currently *only* be used in conjunction with a *CommuniTel* Host database, which must have been Called using the prefix 'BBC' in front of the telephone number — see the Call function for details. Zip-Send cannot be used in conjunction with Prestel.

To Zip-Send a frame to a CommuniTel Host, first enter the Online Editor on page *910#, and locate an empty frame into which to send. Then Load the relevant frame from your local database, and press **SHIFT** + **f 6** and **RETURN** to confirm, to Zip-Send the Frame.

Please refer to the section on the **Send** function, 'Sending Complete Frames', for full information about this option. The main difference, apart from the speed, between the two options is that the fast send does not carry out error checking. This is because the Host's 'bounce back' is suspended during the send, and the whole frame resent from the Host end after the send has finished. If you see any errors, then you must either correct them by hand, or, if it is badly corrupted by noise, try reloading and resending the frame. See also the separate chapter, 'Sending Frames to a CommuniTel Host' with reference to sending frames to a CommuniTel Host.

Edit Frame Function — (EdF) key **f7**

The Edit Frame function is a close replica of the CommunITel Hey Presto viewdata editor, and can be used to edit frame images both 'Offline' and 'Online'.

Because of the strong resemblance to the familiar Hey Presto editor, full details of the Edit Frame function are not given here — rather, the differences between the two editors are highlighted, and the methods of editing 'Offline' and 'Online' are described in detail.

Comparing the Edit Function with the Hey Presto Editor

If you are familiar with the Hey Presto editor, you should have no difficulty in using the Edit function, but the following differences should be noted.

● **Routeing**

The most important difference to note is that the Edit function does not allow you to enter routeing for a frame. Instead, it has two options for handling the frame's routeing, and you should be clearly aware of these.

● **Null routeing (default)**

When a frame is saved, the routeing and other information in the frame table is set to null values. This works perfectly well for downloaded frames (Viewdata systems don't send the frame table part, only the image part), for storing messages to be sent and frames that define the function keys. However, if you load a frame from a local database, edit it, and then resave it, it will **lose its routeing**.

● **Preserve routeing**

To avoid this, it is possible to first set the frame save function to preserve the contents of the frame table using the ?3 option. But note, if this option is set and you save a frame (eg from another online system), it will be saved with whatever happens to have been left in the frame table.

● **The help window**, which appears as soon as the Edit function is selected, disappears as soon as a key is pressed. Press **f0** to restore the help window to the display. Although the various colour and other control characters are named slightly differently, all characters occupy the same positions on the function keys.

● **Function key **f0**** is used as follows:

f0	Restore help window
SHIFT + f0	Exit from Offline Edit Exit from Online Edit — sends 'Interlock/End'
CTRL + f0	Restore help window
SHIFT + CTRL + f0	Exit from Offline Edit Abandon Online Edit — sends 'Interlock/Start'

● **Function key **f8**** which enters Search/View in Hey Presto, is not used by the Edit Function.

● **User-defined function key strings** are still available by pressing **f9**, but operate slightly differently. When **f9** is used, the help window is redisplayed to reflect the new action of the unshifted function keys, and the legend 'Ky' appears in red at the bottom of the screen. To recover the normal actions of the unshifted function keys, press **ESCAPE** — the updated help window will again be displayed, and the 'Ky' legend will disappear.

- **Tab stops** are still set and unset by **f7**, but the tabs are not all shown at the same time. Instead, a red arrow (↑) appears at the bottom of the screen if the cursor is currently at a tab stop.
- **Graphics mode** is still selected by **CTRL + f8**, but operates slightly differently. A pixel block appears on the bottom line to represent the 'current' graphics character. When this is displayed in red, the editor is not in Graphics Mode. **CTRL + f8** changes the colour of the pixel block to green and puts the editor in Graphics Mode. Pressing **CTRL + f8** again takes the editor out of Graphics Mode again, and so on. Also, the character under the cursor is reflected in its 'graphics' form at the bottom of the screen next to the current graphics pixel block, or, if the character under the cursor is a control character, its abbreviation is displayed.
- **Concealed text** within the frame is 'revealed' as soon as the Edit function starts up, and 'reconcealed' when it ends, so that concealed text is normally visible during editing. Concealed text can be 'tested' whilst editing by using **SHIFT + DELETE**.
- **The shifted cursor keys** duplicate the insert/delete character/line functions on **f1** to **f4**, as follows:

SHIFT + Cursor Back (←)	Delete Character
SHIFT + Cursor Forward (→)	Insert Character
SHIFT + Cursor Up (↑)	Delete Line
SHIFT + Cursor Down (↓)	Insert Line

- **The shifted DELETE key** may be used as follows:

SHIFT + DELETE	Reveal/Conceal
SHIFT + DELETE	Clear all Tab Stops
SHIFT + CTRL + DELETE	Clear Insert Line overflow buffer

- **The shifted COPY key** may be used as follows:

SHIFT + COPY	Transfer character under cursor to 'current' graphics character
CTRL + COPY	Output 'current' graphics character

- **Additional control keys** are as follows:

CTRL + X	Erase Line (as f5)
CTRL + L	Cursor Home (as f6)
CTRL + S	Swap case (eg 'Q' ↔ 'q')

Using the Edit Function when 'Offline'

The Edit function can be used exactly as the Hey Presto editor when the terminal is 'Offline'. But in order not to destroy a loaded frame's routing table when it is reversed, you must first reconfigure the ?3 option. To do this press **SHIFT** + **f1**, followed by 3,1 and **RETURN** — (see the section on the Save Frame function for details).

Load the frame you wish to edit from your local database onto the screen using the Load Frame function, unless you want to create a new frame from 'scratch'.

Enter the Edit function by pressing **f7** and **RETURN** to confirm.

Edit the frame, and when you have finished, press **ESCAPE** (or **SHIFT** + **f0**) to exit.

On leaving the Edit function, you will automatically be offered the Save Frame function to allow you to save your edited frame back into your local database.

Using the Edit Function when 'Online'

You can use the Edit function when 'Online' to a remote database, on any frame where the cursor is **visible**, including Online Editor frames and Prestel message frames.

Online operation of the editor is almost identical to operation offline, with the exception that the Insert/Delete Character/Line functions on **f1**, **f2**, **f3** and **f4** cannot be used **directly**, because they only affect the local copy of the frame image — for this reason, these functions are displayed in red on the help window when editing online.

However, these functions can still be useful, as they can be used to adjust the position of characters and lines on the local screen, and then the **COPY** key can be 'run through' the altered lines, with the effect of transmitting the adjusted characters in their new positions.

When editing Prestel message frames online, the Hash (#) character is obtained by pressing **CTRL** + **RETURN**. You may also wish to reconfigure the software using ?78, so that pressing **RETURN** does not also generate a Line Feed character.

Generally speaking, it is usually quicker and easier to do all your editing while 'Offline', and to use the Send or Zip-Send Frame function to transmit your completed frames and messages. But when the need inevitably arises, the Online Edit function makes for relatively painless 'live' editing.

Options

The bottom-most line which is affected by the Insert/Delete Line functions may be set with ?77, and the right-most character which is affected by the Insert/Delete Character functions may be set with ?78. These options allow a degree of 'windowing' to be applied when editing.

The software is supplied so that pressing **RETURN** during editing also generates a Line Feed, but those more used to the Prestel Online Editor may wish to use ?79 to suppress the Line Feed. This should also be done when editing Prestel message frames 'Online'.

The normal automatic colour-wrapping effects may be turned on and off using ?79.

Swap Viewdata Base Function — (Swp) **SHIFT** + **f7**

This function enables you to move from, to, or between multiple frame per file Viewdata bases. (See Chapters 1 and 3 for more on these.)

Like other programs in this suite, when the Terminal starts in disk mode, it begins by looking for a valid random access Viewdata base file in the currently selected drive/directory, and, if it finds one, holds it open ready for use. The action of this function is to close an open Viewdata base file, and when **RETURN** is pressed, recheck for another, again holding it open if it finds a valid one.

This function is used to perform the following activities:

- Physically swap database disks in the current drive.
- Switch between databases on different drive surfaces/directories.
- Switch between disk and network filing systems.

Swapping Disks in the Current Drive

This function **MUST** be used whenever you want to physically swap the current Viewdata base disk when operating under the Disk Filing System.

On holding down the **SHIFT** key and pressing **f7**, first the message:

Swap RETURN to Confirm

appears, then, after pressing **RETURN**, the further message:

Swap disks, then press RETURN

appears at the foot of the screen. At this point, the file has been closed, and it is safe to replace the Viewdata base disk with another disk. When the new disk is ready, press **RETURN**. The new disk will then be checked and the filing system set to single or multiple frames per file accordingly.

Like the Hey Presto Editor, if you illegally swap a disk without following this procedure, the system checks and tries to recover. This generally works but is not guaranteed under all circumstances. In particular, if you replace a single frame per file database with a multiple frame per file one, it will not check and open the file and so its frames will not be accessible.

Changing Between Viewdata Bases in Different Drives

As explained at the beginning of this chapter, after the Terminal has started up and opened a database in the default drive, it is possible, using the operating system command function **f1**, to change the current drive. This enables you to download telesoftware into another drive, while still leaving the database open on the original drive for loading and saving frames.

However, if you have more than one drive, you may wish to have two databases accessible, for instance, one holding pre-prepared messages and frames for sending to other people, the other for downloading frames from other systems onto.

To switch between them, first change drive using the OS command function **f1**, issue the DR.n command, and then press **SHIFT** + **f7**, and **RETURN** to confirm. When the prompt:

Swap disks, then press RETURN

appears, simply press **RETURN**, and the change over will be made. This can be done when online as well as when offline.

Once you have switched from a database disk, it can be safely removed.

Switching Between Filing Systems

It is also possible to use **f1** to switch between the disk and network filing systems. It is important after doing so in either direction, to use the Swap Viewdata base function to reset the database mode appropriately.

After issuing the filing command, *NET or *DISK using **f1**, press **SHIFT** + **f7**. Again, when the message:

Swap disks, then press RETURN

appears, simply press the **RETURN** key.

If you forget to call the Swap Viewdata base function after switching from net to disk, it simply won't open a Viewdata base file and its frames will not be accessible. You will be left in single frame per file mode. If this happens, the solution is to select the function. Enter:

SHIFT + **f7**, **RETURN**, **RETURN**.

and all should be well. Life, however, is never that simple. Those with older DFS/NFS ROMs should note the paragraph on changing from Net to Disk under Problems below.

Problems

When selecting this function in disk mode, you may get an error message, "Invalid Database". This means that a file with the title 'VWDB' has been found, but that it is not a valid database file. This could be because either it is simply another kind of file (eg a single frame entitled 'VWDb' — try and avoid that as a frame title!), or, more seriously, your database has become corrupted, in which case you will have to recover using your last backup. In either case, you will be defaulted to single frame per file mode.

When physically swapping disks, you may also find that it has not opened the new database. The most likely cause is that at some earlier point you have changed drive or directory using the OS command function **f1**. Although you will still have been loading and saving frames from the original database, after closing the old file, the Swap Viewdata base function always checks the *currently selected drive/directory* for a new one after **RETURN** has been pressed. Thus, to physically replace disks, if you have changed drive/directory, you should always make sure that you have switched back to the Viewdata base drive before selecting this function.

When switching from Net to Disk, the main problem that can occur is that on earlier combinations of DFS and NFS chip when switching back to disk, the current drive/directory is always set back to the default, :0\$. This means that if your database is in drive 1, after switching back from the network, you will ALSO have to switch back to the drive using the OS command **f1** function, before the Swap Viewdata base function is carried out. If you are not sure of the machine you are using, a way to check after switching back to disk mode again, is to issue a Catalogue command and see whether you are in the drive/directory you were in when you switched to net. If it is NOT the drive holding the 'VWDB' Viewdata Base file, then you should change drives appropriately before calling the Swap Viewdata base function.

Save Frame Function — (SvF) key **f 8**

The Save Frame function is used to save a viewdata frame image from the Terminal's screen display and into your local database.

The function may be used at any time, whenever you wish to preserve a particular frame image. You might use it to save a frame seen while 'Online' to a remote database, or after creating or editing one of your own frames when 'Offline'.

To Save the current frame, press **f 8** and **RETURN** to confirm.

A flashing cursor will appear, with the message 'Enter and RETURN', and a default frame name appears, derived from the frame's existing name as displayed at the top of the screen. You should now either overwrite the default frame name with your own name and press **RETURN**, or simply press **RETURN** to accept the default frame name.

If your frame name ends in a lower-case 'frame letter' (eg 'STORYa'), the cursor will return to the beginning of the frame name, and the message 'Enter and RETURN' will be displayed again.

In this case, press **RETURN** to accept the modified frame name, or re-enter your preferred frame name and finish with **RETURN** — the name will again be checked for ending in a lower-case letter, and the whole process repeated if necessary. Note that you can use the COPY key to move the cursor through the frame name towards the 'frame letter' at the end.

When you and the Terminal have agreed upon the frame name, the Terminal will check for a frame with the same name already in existence within your database, and if there is such a frame, will display the message 'Press COPY to overwrite'.

If you *do* want to overwrite the existing frame, press **COPY** and the frame image will be saved from the screen and into your local database.

If you do not want to overwrite the existing frame, press any other key but **COPY**, and the Save will be abandoned — press **f 8** to try again, using a different frame name.

Otherwise, if the frame name does not already exist, the frame image will be saved into your local database immediately.

Problems

If a filing system error occurs during saving, a descriptive error message will be displayed in red. If this occurs, check the filing problem and try again.

Options

As supplied, the software will *overwrite* any existing frame routing, price, CUG and other information with null values. If you want to use the Terminal to Load, Edit and Save existing database frames which have already had routing information applied with the CommuniTel Hey Presto editor, you should use ?3 to prevent erasure of this information when saving the frames.

Delete Frame Function — (DIF) key **SHIFT** + **f 8**

The Delete Frame function is used to delete a viewdata frame image from your local database.

To Delete a frame, press **SHIFT** + **f 8** and **RETURN** to confirm.

A flashing cursor will appear, with the message 'Enter and RETURN'. You should now enter the frame name of the frame to be deleted and press **RETURN**.

If your frame name ends in a lower-case 'frame letter' (eg 'STORYg'), then this title will be accepted by the Terminal.

If your title does *not* end in a lower-case letter (eg 'STORY'), then an 'a' will be added to the end of your frame name (eg 'STORYa'), the cursor will return to the beginning of the frame name, and the message 'Enter and RETURN' will be displayed again.

In this case, press **RETURN** to accept the modified frame name, or re-enter the frame name with a correct 'frame letter', and finish with **RETURN** — the name will again be checked for ending in a lower-case letter, and the whole process repeated if necessary. Note that you can use the **COPY** key to move the cursor through the frame name towards the 'frame letter' at the end.

When you and the Terminal have agreed upon the frame name, the Terminal will delete the frame from your local database.

Problems

If a filing system error occurs during deletion, a descriptive error message will be displayed in red. If this occurs, check the filing problem and try again.

Print Frame Function — (PtF) key **f 9**

The Print Frame function is used to print a simplified version of the current frame image onto your printer.

To print the current frame, press **f 9** and **RETURN** to confirm. If your printer is connected, the frame image will be printed.

Please note that unless your printer has viewdata pixel-block graphics as part of its standard character set, it will not be possible to reproduce viewdata graphics. However, the Print function is useful for obtaining hard copies of Mailbox messages and general information frames that you do not want to Save into your local database.

Also please note that if printing is done while 'Online', your printer must either be connected to the computer's **'parallel'** printer port, or be an Econet network printer server, as the modem is occupying the computer's **'serial'** port.

Options

Please refer to the Configuration Commands section for a range of commands (?45 to ?67) which allow you to configure the action of the Print function to the requirements of your printer.

Catalogue Frames Function — (Cat) key **SHIFT + **f9****

The Catalogue Frames function is used to display a catalogue report of your local database.

To obtain a Catalogue report, press **SHIFT** + **f9** and **RETURN** to confirm, and the report will appear on the screen.

If you are simply using the computer's 'native' filing system, then you will receive a full catalogue listing of all files on the current medium, regardless of whether they are 'frame files' or not.

If you are using a disk with the CommuniTel random access frame filing system, then you will receive a report of the frames stored within your special local database file.

Please note that Catalogue normally **scrolls** the screen, and therefore loses the current frame image.

Problems

If a filing system error occurs during cataloguing, a descriptive error message will be displayed in red. If this occurs, check the filing problem and try again.

Part 3. Error Messages

The following error messages may be displayed when using the Terminal:

Data? indicates corruption of the current telesoftware block — this error is **non-fatal**, and is displayed before requesting retransmission of the block. If the block is not received correctly within three retries (default), this message is displayed, and the user invited to escape from, or continue with, the download.

No room indicates that the download buffer space has been filled. This error is **non-fatal**, and is displayed before offering the option of saving via Open File.

Escape (not reported) (#17) indicates that the ESCAPE key has been pressed. Although not reported, this error causes all usual BRK side-effects.

No reply (#61) indicates that no reply to the Call function was received within 90 seconds (default), when using a 'dumb' modem — Try again.

Block count (#62) indicates that the actual and expected number of telesoftware blocks don't match — the file can still be saved, but blocks may have been missed.

Block seq (#64) indicates either that a telesoftware block has been skipped, or the next block cannot be found — repeat download or contact the IP.

Can't open/extend (#65) indicates an attempt by Open File to use blockwise output to bitwise medium (eg TAPE) — reconfigure the Terminal.

Disconnected (#66) indicates that the current connection has been lost, when using a 'dumb' modem — try again.

O'flo (#69) indicates overflow of additional RS423 input buffering, if applied — increase the additional buffering.

? (#70) indicates an invalid configuration command — try again.

Modem? (#71) indicates an attempt to Call with DaCom modem disconnected — connect it, reset it and try again.

Noise (#72) indicates transmission error during Send — try again.

WHAT? (#73) indicates invalid command input to DaCom modem — try again.

NO DIAL TONE (#73) indicates dial tone not detected by DaCom modem — check line and try again.

NO ANSWER (#73) indicates no answer to Call with DaCom modem — try again.

DISCONNECTED (#73) indicates connection lost by DaCom modem — Call again.

Part 4. Configuration Commands

To change a Terminal configuration, enter **SHIFT** + **f1**. This causes a '?' to appear at the foot of the screen. Next, type in the desired configuration command, and press **RETURN**. This configuration will now hold until the end of the session, or until it is changed with another configuration command.

If you find you are frequently swapping back and forth between alternate configurations, you may find it worth making use of the function key programming facility outlined in this chapter, so that you can make the switches using **CTRL** and a single function key. You may also wish to make up your own function key strips to remind you of what is on what key.

The following is a complete list of the Configuration Commands available to this release of the Terminal:

Keyboard Interface

?0,FUNCTION KEY ALIAS (Default ?0,6)

Controls the character which can be used as an introductory alias for function keys. The default setting makes **|| F** the alias character, so that eg **|| F O** invokes the Help function (**f0**).

Telesoftware and Filing

?1,TELESOFTWARE DECODER (Default ?1,1)

This should no longer be required, but allows switching between 'old BBC' (decoder 0) and 'strict CET' (decoder 1) decoding. All 'old BBC' telesoftware on Prestel should have been removed by the end of August 1983.

?2,MAXIMUM DECODER RETRIES (Default ?2,3)

Controls the number of times a corrupted telesoftware block will be automatically re-requested, before the user is asked to continue or escape from the download.

?3,FRAME ROUTEING SWITCH (Default ?3,1)

Controls whether or not frame file routing data is cleared by Save. ?3,0 does not clear routeing, ?3,1 (default) does.

?4,FILING SYSTEM TYPE (Default ?4,0)

Controls the use of OSBPUT (bytewise) or OSGBPB (blockwise) in Open File. When ?4,0 is selected (default), OSBPUT is used if the current filing system is TAPE, otherwise OSGBPB is used. ?4,1 may be used to force the use of OSGBPB, and ?4,2 may be used to force the use of OSBPUT.

?5,DOWNLOAD BUFFER LOWER LIMIT (Default ?5,<OSHWM>)

Controls the lower limit of the telesoftware download buffer memory space. Normally set to default PAGE at OSHWM, as read by *FX131. The value is a 'page' number expressed in decimal form.

?6,DOWNLOAD BUFFER UPPER LIMIT (Default ?6, (codebase))

Controls the upper limit of the telesoftware download buffer memory space. Normally set to the first page used by the terminal software. The value is a 'page' number expressed in decimal form. Note that if extra RS423 input buffering is selected (via ?37,n), then the space available to downloading will be reduced by 'n' 256-byte pages.

Communications

?7,RS423 RECEIVE RATE CODE (Default ?7,4)

Controls the receive rate of the RS423 interface. Normally rate code 4 for 1200 baud reception.

?8,RS423 TRANSMIT RATE CODE (Default ?8,4)

Controls the transmit rate of the RS423 interface. Normally rate code 4 for 1200 baud transmission, as required by daCom DSL2123AD modem.

?9,RECEIVE PARITY TYPE (Default ?9,2)

?10,TRANSMIT PARITY TYPE (Default ?10,2)

Controls the receive and transmit parity checking, as follows:

?9/10,0 — no parity applied or checked, ?9/10,1 — odd parity, ?9/10,2 — even parity.

Timers

?11,TRANSMIT DELAY (LSB) (Default ?11,14)

?12,TRANSMIT DELAY (MSB) (Default ?12,0)

Control the minimum delay period between character transmissions. Normally 14cS = 140mS.

?13,RECEIVE DELAY (LSB) (Default ?13,15)

?14,RECEIVE DELAY (MSB) (Default ?14,0)

Control the maximum expected delay between consecutively received characters. Determines frame timeout period in conjunction with ?15 and ?16. Normally 15cS = 150mS.

?15,RESPONSE DELAY (LSB) (Default ?15,144)

?16,RESPONSE DELAY (MSB) (Default ?16,1)

Control maximum expected delay between transmission of character and reception of reply, including database seek time. Determines frame timeout period in conjunction with ?13 and ?14. Normally 400cS = 4S.

?19,LOGOFF DELAY (LSB) (Default ?19,96)

?20,LOGOFF DELAY (MSB) Default ?20,234)

Control the period of Terminal inactivity after which the adaptor will be automatically disconnected. Normally 60,000cS = 10 minutes.

?29,CARRIER DROP DELAY (LSB) (Default ?29,60)

?30,CARRIER DROP DELAY (MSB) (Default ?30,0)

Controls the period after which the software automatically disconnects, after loss of carrier has been detected. This is only effective when the Dumb Modem driver has been selected (see ?90 below), and when DCD-checking is applied (see ?89 below). The default value applies a delay of 60cS = 600mS.

Frame Sending

?35,FRAME SEND TYPE (Default ?35,0)

Controls the action of the Send function when sending a complete frame to the Prestel Editor, or similar (see also ?69). When ?35,1 is selected, the entire contents of each frame line are sent, including trailing spaces. If ?35,0 (default) is reselected, trailing spaces are not sent, and are replaced by carriage return, line feed sequences. The second option is obviously faster, but requires that the original frame into which the data is being sent is empty.

Error Handling

?36,ERROR ACTION (Default ?36,1)

Controls the closing of files after a 'fatal' error condition (BRK). When ?36,1 (default) is selected, any open files are closed when a BRK occurs, the intention being that EXEC (and SPOOL) files should be closed on error. If ?36,0 is selected, then open files are not closed (except that a telesoftware 'open file' will be closed if open). If closing all files causes a FURTHER error (as may occur under the NET filing system), then only the ORIGINAL error is reported, and the option is then automatically reset to ?36,0 to prevent further occurrences. The user may subsequently set the option again if required.

Remote Input Buffering

?37,BUFFER PAGES (Default ?37,0)

Controls the number of 256-byte 'pages' of memory allocated to extra RS423 input buffering. If zero (default), then no extra buffering is applied. If non-zero, then the specified number of pages are used as an additional remote input buffer. When the Terminal is being used via the Econet REMOTE facility, at least 8Kbytes of buffering should be allocated, via ?37,32. Buffer space is allocated from the Download Buffer Upper Limit downwards (see ?26), and so reduces the space available for telesoftware buffering.

Call Characteristics

?38,CALL TRANSMIT CHARACTER (Default ?38,0)

If non-zero, then the specified character code is transmitted repeatedly (at response timer intervals — see ?15 and ?16) by the Call function, as soon as carrier has been detected, until the character specified by ?39 is received.

?39,CALL RECEIVE CHARACTER (Default ?39,12)

If non-zero, then the Call function waits for the specified character code to be received before the Terminal considers itself Online — the default value waits for a clearscreen (&0C) character to be received from Prestel.

Miscellaneous Options

?40,CURSOR STATE (Default ?40,0)

Controls the state of the Terminal's Cursor On/Off flag directly.

?41,BLOB CHARACTER (Default ?41,31)

Select the keyboard character which generates the 'blob' (&7F) character. The default makes this character obtainable via the **CTRL** Underline (_).

?42,RETURN KEY ACTION (DEFAULT ?42,1)

Controls the action of the **RETURN** key, as follows:

config **CTRL** pressed Cursor **RETURN** gives

?42,0	No	Off	Hash	&5F
?42,0	No	On	Return	&0D
?42,0	Yes	Off	Return	&0D
?42,0	Yes	On	Hash	&5F
?42,1	No		Hash	&5F
?42,1	Yes		Return	&0D

To further complicate matters, the **RETURN** key always generates Return (&0D) during the Edit function!

Filing Characteristics

?43,EXTERNAL FRAME FILING (Default ?43,0)

Controls the filing system used by the Load, Save, Delete Frame and Catalogue functions. If ?43,0 is selected (default), then these functions are passed to the current filing system via the standard OSFILE and *CAT mechanisms. If ?43,1 is selected, then the use of these functions causes control to EXIT from the machine code terminal, so that frame filing can be handled by an external BASIC or machine code program. Before exit, the stack is rolled out and the contents of A are set to the corresponding OSFILE function value (&80 in the case of Catalogue), and X and Y are set pointing to a standard OSFILE parameter block (empty in the case of Catalogue). On completion of the filing routine, the external software should re-enter by calling address PCODE+3, where the stack is rolled back in again.

?44,FRAME FILE TYPE (Default ?44,1)

Controls the size of file generated by the Save Frame function, and expected by the Load Frame function, as follows:

- 0 — 920-byte frame files
- 1 — 1024-byte frame files

The larger file type (default) is compatible with CommuniTel LVS. Selection of the CommuniTel format also causes initialisation of the routing data, and filename and file existence checks to be performed.

Printing Characteristics

?45,LINE FEED SWITCH (Default ?45,0)

Controls whether or not line-feed characters (&0A) are sent to the printer (*FX6 cannot be used here). Normally 0 for no line-feed sent. Any other value sends line-feeds.

?46,SPACE SUPPRESSION SWITCH (Default ?46,1)

Controls whether or not trailing spaces are sent to the printer. Normally 1 to send trailing spaces. 0 will suppress.

?47,GRAPHICS REPLACEMENT CHARACTER (Default ?47,42)

Controls the character printed in place of block graphics characters. Normally 42 to print "" in place of graphics. 0 will cause graphics characters to be sent to the printer (albeit converted in some way — see below).

?48,LOW GRAPHICS BASE (Default ?48, 160)

?49,HIGH GRAPHICS BASE (Default ?49, 192)

Control the range of character codes output to the printer to represent block graphics characters. Only applicable if ?47,0 has been selected. Normally 160 and 192.

?50,ATTRIBUTE REPLACEMENT CHARACTER (Default ?50,32)

Controls the character output to the printer to replace graphics attribute codes. Normally ?50,32 to replace attribute characters with spaces. ?50,0 will output attributes as codes in the range &80 to &9F.

?51,PAGE DEPTH (Default ?51,66)

Controls the numbers of lines assumed per printer page. Normally 66 for a standard 11-inch page, 1/6 inch feed.

?52,INPUT	CHARACTER 1
?53,OUTPUT	CHARACTER 1
?54,INPUT	CHARACTER 2
?55,OUTPUT	CHARACTER 2
?56,INPUT	CHARACTER 3
?57,OUTPUT	CHARACTER 3
?58,INPUT	CHARACTER 4
?59,OUTPUT	CHARACTER 4
?60,INPUT	CHARACTER 5
?61,OUTPUT	CHARACTER 5
?62,INPUT	CHARACTER 6
?63,OUTPUT	CHARACTER 6
?64,INPUT	CHARACTER 7
?65,OUTPUT	CHARACTER 7
?66,INPUT	CHARACTER 8
?67,OUTPUT	CHARACTER 8

Control the conversion of up to 8 individual display character codes on output to the printer. The codes are arranged as 8 pairs, the first of each pair being the input character to be converted and the second being the replacement output code. Any pair whose first code is zero is ignored. The initial configuration is for the Acorn JP101 printer, and is as follows:

- 1: 'back arrow' (&5B) is replaced by
'left broken bracket' (&3C)
- 2: 'half' (&5C) is replaced by
'space' (&20)
- 3: 'forward arrow' (&5D) is replaced by
'right broken bracket' (&3E)
- 4: 'hash' (&5F) is replaced by
'plus' (&2B)
- 5: 'underline' (&60) is replaced by
'underline' (&5F)
- 6: 'quarter' (&7B) is replaced by
'space' (&20)
- 7: 'three quarter' (&7D) is replaced by
'space' (&20)
- 8: 'blob' (&7F) is replaced by
'space' (&20)

Miscellaneous Options

?68,LINE CHECK SWITCH (Default ?68,1)

Controls the continuous monitoring (by checking RS423 CTS) of the state of connection when Online. Normally 1 for continuous monitoring. 0 switches monitoring off. When used with the DaCom DSL2123AD modem, monitoring is applied, but is redundant.

?69,SEND TYPE (Default ?69,2)

Controls the action of the Send function, either to send the current frame contents complete (to the Prestel Online Editor or similar), or to send it as a multi-field message or response frame. ?69,0 allows the cursor position at the time of selecting Send to select the action type — if the cursor is at position (0,1) the frame will be sent complete, otherwise it will be sent as a message. ?69,1 forces the frame to be sent as a message. ?69,2 (default) forces the frame to be sent complete.

?70,*COMMAND ALIAS CHARACTER (Default ?70,255)

Selects the normal keyboard character which invokes the *Command function. Normally set to an unavailable value. ?70,42 will select '*' as the *Command alias character.

?71,TERMINAL STATUS (Default ?71,255)

Controls the state of the Terminal's Online/Offline flag directly. The initial "don't know" value of 255 is resolved into 0=Offline or 1=Online by a startup line test.

?72,CLEARSCREEN CHARACTER OFFSET (Default ?72,88)

Controls the OFFSET in page 03 of the BBC OS1.2 Mode 7 clearscreen character — this character is modified by the software. This offset should never change in practice.

?73,FRAME OVERWRITE SWITCH (Default ?73,0)

When the CommuniTel frametype is selected (?44,1), controls whether or not existing frames can be overwritten. If ?73,0 (default) is selected, then the message 'Press COPY to overwrite' is displayed by the Save Frame function if a file of the same name already exists. If ?73,1 is selected, then frames may be overwritten without this message appearing.

?74,ZIP TRANSIT DELAY (Default ?74,0)

Controls the delay introduced between each transmitted character during frame sending using the Zip function. The default value ensures that characters are transmitted as fast as possible. Another delay value in cS may be applied if necessary.

?75,SCROLL SWITCH (Default 75,1)

Controls scrolling of the current frame display when the *OS and ?Configuration functions are used. ?75,0 scrolls for neither function ?75,1 (default) scrolls for *OS only, ?75,2 scrolls for ?Configuration only, ?75,3 scrolls for both functions.

Edit Function Options

?76,EDIT INSERT/DELETE LINE LIMIT (Default ?76,22)

Controls the part of the screen which is scrolled by the Insert Line and Delete Line functions of the Edit function. The default value scrolls the whole screen from the point of insertion or deletion.

?77,EDIT INSERT/DELETE CHARACTER LIMIT (Default ?77,39)

Controls the part of a line which is horizontally scrolled by the Insert Character and Delete Character functions of the Edit function. The default value scrolls the whole line to the right of the point of insertion or deletion.

?78,EDIT CARRIAGE RETURN/LINE FEED SWITCH (Default ?78,1)

Controls whether or not a Linefeed is output when the Return key is pressed when using the Edit function. ?78,0 does not output an LF, ?78,1 (default) does output an LF.

?79,EDIT COLOUR-WRAP SWITCH (Default ?79,1)

Controls whether or not colour control codes are automatically copied onto the following line when typing over the end of a line, when using the Edit function. ?79,0 does not copy colour codes, ?79,1 (default) does.

Intelligent Modem Options

?80,MODEM ERROR CHARACTER (Default ?80,4)

Controls the character recognised by the software as an error signal from the modem — see ?81 below.

?81,MODEM ERROR CHARACTER COUNT (Default ?81,4)

Controls the number of modem error signal characters (see ?80 above) which the software must receive before treating following data as an error message from the modem. The default settings require at least 4 CTRL-D's (&04) to be received from the modem before treating the following data as an error message, which causes a BRK and is displayed.

?82,MODEM ERROR DELAY (LSB) (Default ?82,50)

?83,MODEM ERROR DELAY (MSB) (Default ?83,0)

Control the period of received silence after which the software considers a modem error message to have been fully received. The default values select a delay of 50cS = 500mS.

?84,MODEM RESET DELAY (LSB) (Default ?84,125)

?85,MODEM RESET DELAY (MSB) (Default ?85,0)

Control the delay required for the modem to recover after being forcibly reset. The default values select a delay of 125cS = 1.25S.

Miscellaneous Options

?86,SCREEN MODE OFFSET (Default ?86,85)

Controls the OFFSET in page &03 of the BBC OS1.2 screen mode value — this value is read by the software (see ?87 below). This offset should never change in practice.

?87,SCREEN FLICKER SWITCH (Default 87,1)

Controls whether or not Mode 7 is forcibly selected on startup of the software. ?87,0 selects forcible Mode 7, ?87,1 (default) selects Mode 7 only if the screen is not already in Mode 7. This allows a screen configured in Mode 7 with interface off by external software to be preserved when entering the Terminal software.

?88,BREAK KEY PROGRAMMING SWITCH (Default &88,1)

Controls whether or not the **BREAK** Key (KEY10) is programmed with a string (to recall PCODE) or not. ?88,0 does not program the **BREAK** key, ?88,1 (default) applies an internally-held string to KEY10. Any programming of KEY10 is removed by the Exit function.

Dumb Modem Options

?89,DCD CHECK SWITCH (Default ?89,1)

If the Dumb Modem driver has been selected (see ?90 below), controls whether or not strict Data Carrier Detect (on CTS) checking is applied. ?89,0 does not apply DCD-checking, ?89,1 (default) does.

?90,MODEM SWITCH (Default ?90,1)

Controls the selection of the Intelligent (DaCom DSL2123AD) modem driver or the Dumb Modem driver. ?90,0 selects the Dumb, ?90,1 (default) selects the Intelligent modem driver.

?91,DUMB MODEM CONNECT DELAY (LSB) (Default ?91,232)

?92,DUMB MODEM CONNECT DELAY (MSB) (Default ?92,3)

Controls the period for which the 'Please connect' message is displayed by the Call function when the Dumb Modem driver is selected. The default values select a delay of 1000cS = 10S.

?93,DUMB MODEM DISCONNECT DELAY (LSB) (Default ?93,244)

?94,DUMB MODEM DISCONNECT DELAY (MSB) (Default ?94,1)

Controls the period for which the 'Disconnect' message is displayed on disconnecting when the Dumb Modem driver is selected. The default values select a delay of 500cS = 5S.

?95,DUMB MODEM BAUD RATE CODES (Default ?95,65)

Controls the Receive and Transmit Baud rates used when the Dumb Modem driver is selected. These rates are applied when the Call function is used, overriding the rates selected by ?77 and ?8, and remain in force until manually reset. The most significant 4 bits of the value select the Receive Baud rate code, the least significant 4 bits the Transmit Baud rate code. The default value of ?95,65 (65=&41) selects rate codes of 4 (1200 Baud Rx) and 1 (175 Baud Tx).

APPENDIX A

REQUIREMENTS FOR RUNNING THE COMMUNITEL VIEWDATA SYSTEM

The Minimum Requirements

The minimum requirements are:

BBC model B.

BASIC 1.0 or above.

and either:

Acorn DFS 0.9 or above,

or:

Acorn NFS 3.34 or above,

or other filing system ROMs compatible with the above.

Filing Systems and Operating System Workspace

The system is capable of running with both DFS and NFS installed at the same time, ie with PAGE set at &1B00, and, within the offline Main Editor and the Online Terminal, of switching between the two.

If any other ROMs are installed that claim RAM workspace, then these must be lower priority than the DFS and NFS (ie the NFS and/or DFS chips must be nearer to the edge of the BBC circuit board than other chips claiming workspace), and PAGE must be set manually before booting the system:

PAGE=&1B00 RETURN

followed by either

***!BOOT RETURN**

or

CH."VSMENU" RETURN

Second Processor

All programs are compatible with the Acorn 6502 second processor.

Disk Configurations

The system can be configured to operate on any combination of the following:

40 or 80 track drives (100k or 200k per side).

Single or double drive units.

Single sided or double sided drives.

Network File Server

When used on an Econet, the System requires a Level 2 or Level 3 File Server. Level 1 File Servers are NOT capable of supporting the CommuniTel System.

APPENDIX B

PUTTING FUNCTION KEYS IN THE HEY PRESTO EDITOR

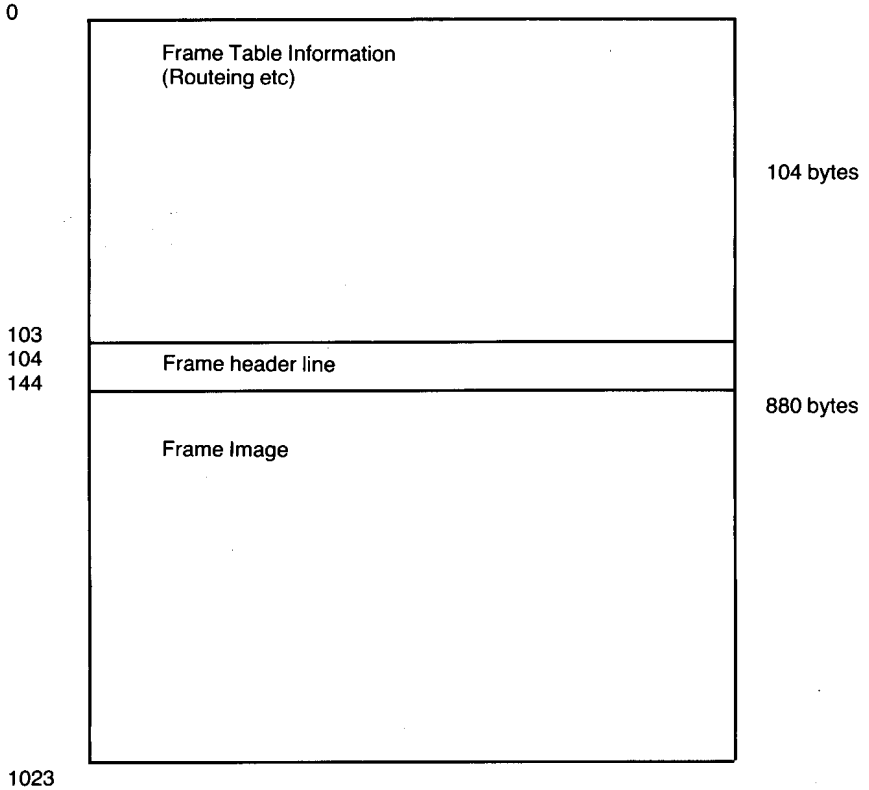
When defining a function key that is to call another function key within the Hey Presto editor, the following table can be used to code them, rather than pressing the function keys themselves. (See the Section 'OPERATING SYSTEM '*' COMMANDS' in Chapter 3 for more on this.) When a function key with any of these code sequences is used when editing a frame, the sequences are translated as the required function key. (Note: These sequences do NOT apply to the Terminal's inbuilt editor.)

EDIT FUNCTION/CODE	FUNCTION KEY	DEFINITION	CCODE
Help Window	f 0	P	
Insert Char	f 1	Q	
Delete Char	f 2	R	
Insert Line	f 3	S	
Delete Line	f 4	T	
Erase to End of line	f 5	U	
Home Cursor	f 6	V	
Set/Unset Tab	f 7	W	
Search Mode	f 8	X	
Own Definition	f 9	n/a	
Text Help Window	SHIFT + f 0	! (
Red Text Code	SHIFT + f 1	!)	
Green Text Code	SHIFT + f 2	! *	
Yellow Text Code	SHIFT + f 3	! +	
Blue Text Code	SHIFT + f 4	! ,	
Magenta Text Code	SHIFT + f 5	! -	
Cyan Text Code	SHIFT + f 6	! .	
White Text Code	SHIFT + f 7	! /	
Flash Code	SHIFT + f 8	! 0	
Steady Code	SHIFT + f 9	! 1	
Graphic Help Window	CTRL + f 0	! P	
Red Graphic Code	CTRL + f 1	! Q	
Green Graphic Code	CTRL + f 2	! R	
Yellow Graphic Code	CTRL + f 3	! S	
Blue Graphic Code	CTRL + f 4	! T	
Magenta Graphic Code	CTRL + f 5	! U	
Cyan Graphic Code	CTRL + f 6	! V	
White Graphic Code	CTRL + f 7	! W	
Graphics Mode On	CTRL + f 9	! X	
Put Graphic Code	CTRL + f 9	! Y	
Viewdata Effects Window	SHIFT + CTRL + f 0	! Z	
Double Height	SHIFT + CTRL + f 1	! [
Normal Height	SHIFT + CTRL + f 2	! \	
Separate Graphics	SHIFT + CTRL + f 3	!]	
Contiguous Graphics	SHIFT + CTRL + f 4	! ^	
Hold Graphics	SHIFT + CTRL + f 5	! _	
Release Graphics	SHIFT + CTRL + f 6	! (+ 1 space)	
Conceal Display	SHIFT + CTRL + f 7	!	
Black Background	SHIFT + CTRL + f 8	! "	
New Background	SHIFT + CTRL + f 9	! #	

APPENDIX C

COMMUNITEL FRAME FORMAT

The format of individual frames, whether held as multiple or single frame per file is shown below. All frames are 1024 (8400) bytes long.



Frame Table Information

Byte Position	No of bytes	Field	Type
0	1	Header Type (Unused but see below)	1 byte binary
1	2	Unused	
3-7	5	CUG	ASCII Left justified, Space filled
8	1	User Access	ASCII "y" or "n"
9	1	Frame Type	ASCII "i" or "r" or "a"
10-13	4	Price	ASCII Left Justified, Space filled
ROUTEING			
14-22	9	Choice 0	ASCII Left justified, Space filled
23-31	9	Choice 1	ASCII Left justified, Space filled
32-40	9	Choice 2	ASCII Left justified, Space filled
41-49	9	Choice 3	ASCII Left justified, Space filled
50-58	9	Choice 4	ASCII Left justified, Space filled
59-67	9	Choice 5	ASCII Left justified, Space filled
68-76	9	Choice 6	ASCII Left justified, Space filled
77-85	9	Choice 7	ASCII Left justified, Space filled
86-94	9	Choice 8	ASCII Left justified, Space filled
95-103	9	Choice 9	ASCII Left justified, Space filled

ROUTE CHOICES: These fields are straight ASCII to give the user a choice of using numeric names or alphanumeric names.

Header Line

The header line is generally blank if the frame is created locally, but if downloaded from Prestel, holds the downloaded IP's header line. This is displayed when used by the local system, except in the Editor, but the frame title displayed is the one used in the local Viewdata base. It is proposed that in future developments, the use of these 40 bytes should be determined by the value of the header type byte at the start of the frame. These are yet to be defined. Some suggestions are:

- 0 — Unused
- 1 — holds downloaded header image
- 2 — frame title only
- 3 — used to hold frame's Keywords
- 4 — bulk update transaction data
- 5 — inter-system source and destination codes, transmission time etc
- 6 — Announcement line' for messages/auto index routeing/etc.
- 7 —

Frame Image

This is held in the Teletext character set of the BBC micro. Characters thus have the top bit set, and are in the range 180-255.

The Viewdata/Teletext special effects codes are single bytes, in the range 129-159.

The lower character set, 32-127, is ASCII rather than Viewdata/Teletext and not used. (NOTE: Frames saved by other SoftMachinery Terminals only save DOWNLOADED spaces with the top bit set as 160. Trailing spaces in each line are coded as 32.)

Converting Between Teletext and ASCII

To convert from ASCII to Teletext, the following conversion on three of the ASCII character set (hash, underline and pound) must be performed:

ASCII	Teletext
35 →	95
95 →	96
96 →	35

Then any and all characters must be 'logically ORed' with &80, ie the top bit is set, which puts them in the BBC's upper or 'True' Teletext character set.

To convert from upper Teletext set to ASCII, the reverse exchange takes place: ignore all characters below 160, 'logical AND' all other characters with &7F, ie knock off the top bit, then swap the three odd ones back again:

Teletext	ASCII
35 →	96
96 →	95
95 →	35

Sample Procedures in BBC Basic for Displaying, Reading from and Writing into a Frame

These fragments demonstrate how this format can be used with frames saved in the single frame per file mode, to build up intelligent frame handling processes, or how frames can be used by other programs, facilitating screen layout, data entry, data capture, etc.

```
10 HIMEM=&7800 : image__start=&7800 + 144
```

```
1000 DEF PROCshow(frame$)
1010 command$="LOAD " + frame$ + " 7800"
1020 OSCLI command$ : REM new BASIC
1030 S%=image__start : REM S% points to start of image
1040 CLS : VDU 10 : REM centre image
1050 FOR I%=0 TO 879:VDU S%?I%:NEXT
1060 ENDPROC
```

```
2000 DEF FNread (row, column, number__of__characters)
2010 REM row and column must be in the range 0-21 9 0-39 respectively.
2020 LOCAL data__start + (row * 40) + column
2040 FOR I%=data__start TO data__start + number__of__characters
2050 string$ = string$ + CHR$(?I%)
2060 NEXT I%
2070 = string$
```

```
3000 DEF PROCwrite (row, column, string$)
3010 REM row and column must be in the range 0-21 & 0-39 respectively.
3020 LOCAL data__start
3030 data__start = image__start + (row*40) + column - 1
3040 FOR I% = 1 TO LEN(string$)
3050 data__start?I% = MID$(string$,I%,1)
3060 NEXT I%
3070 ENDPROC
```

```
4000 DEF PROCsave(frame$)
4010 LOCAL command$
4020 command$="SAVE " + frame$ + " 7800+400"
4030 OSCLI command$ : REM New Basic
4040 ENDPROC
```

NOTES

'row' & 'column' specify the start of the field in the frame, when displayed as a 22 by 40 screen. Their values must be in the range 0-21 and 0-39 respectively.

'number__of__characters' indicates the number of characters the read function is to fetch from the field.

Further refinements could include:

- Converting to ASCII;
- Replacing special effects codes with spaces;
- Removing any embedded screen commands; etc.

INDEX

access attributes 108, 111
ALTER CURRENT PAGE TITLE 32, 35, 37, 38
amend option on Prestel 146
ASCII 178, 179, 180
ASCII only printer 86, 93, 96, 100
autoboot 106, 109, 111
auto-dial 113
auto-indent 62
*ACCESS 108, 112

backing up disks 1, 7
backtrack limit 135
BASIC programming demonstration 180
baud rates 88, 94, 143
BBC, in phone number 140, 154
BLK BG 71
booting 1, 2
break key, by mistake 31
B.SETTING file 106, 107
bulk update on Prestel 41
*!BOOT 2, 12, 106, 107, 111, 175

CAROUSEL AUTOMATIC DISPLAY

adding a page to the cycle 80
adding or removing a complete section 83
adding or removing a frame from the cycle 83
completing the cycle 80
dynamic modification 83
network 81-83
remote control 82
removing a page from the cycle 80
setting it going 78
setting up/creating 41, 79
stopping it going 78
timing 80
case sensitivity 34
Cat 120, 163
Catalogue frames (Cat) 120, 163
catalogue of disks 32, 54
C.E.T.
 telesoftware downloader 113, 150
 telesoftware standard 6, 119, 150

CHANGE SYSTEM'S SETTINGS	6, 8-13, 111
CHANGE THE CURRENT FILER	32, 53
CHANGE THE CURRENT *DIR	32, 54, 112
changing between viewdata bases in different drives	158
changing disks	14, 53, 54, 55, 158, 159
changing the default directory and directory names	22-23, 43, 54, 158, 159
choice table	39
choice type	40
clear to send (CTS)	143
CII	118, 140-143
closed user groups	41
CNC DSP	71
colour wrap	62, 157
communications functions	
specific to CommuniTel	118, 123, 35-149
general for Viewdata bases	135-139
software	6, 113-173
COMPACT	151
conceal character	129
configure terminal software (?cf)	117, 122, 127, 140, 141, 143, 145, 146, 147, 157
call characteristics	168
communications	166
dumb modem options	173
edit function options	172
error handling	167
filing characteristics	169
frame sending	167
keyboard interface	165
miscellaneous options	168, 171
printing characteristics	169-179
remote input buffering	168
telesoftware and filing timers	167
CON GR.	71, 75
CONNECTED	140
control codes for viewdata	68, 74
convert DFS software to FS	105-106
COPYF	104-105, 112
COPYFILES	104-105, 112
copying a frame	37, 38, 54
COPY key	
general	44, 73, 74, 76, 153, 160
in terminal	147, 153, 157
core system	5
corrupted disks	4, 159
CREATE A NEW VIEWDATA BASE FILE	6, 14-23, 113
CTS	143
CUG	41, 80, 160
*CAT	106
*CDIR	104, 111

Dacom modem	114, 140-141, 144
capacity	14
default drives	7, 8-9
internal title	20
master copy	22
preparing one	15, 109
size	19-20
type	18, 20
data carrier detect (DCD)	143
data structures	14
DBL	71, 72
DCD	143
dead space	139
default settings	65, 126
defining function keys	49-50, 113, 176
delete a local frame (DIF)	120, 161
DELETE A PAGE FROM FILE	32, 46
delete character	66
DELETE key, SHIFTED in the terminal	121, 122
DFS/NFS ROMs	
installing	3, 175
problems	159
DIALLING	140
directory	
changing the default	22-23, 33, 158, 159
full specification	55
directory of mailbox subscribers	146
disk drive configurations	8-9, 15, 103, 175
disk users	
preparation for downloading	151
random access files	14, 114, 158, 163
startup	1
DISPLAY CATALOGUE	32, 58-59
Did	119, 150-151
DIF	120, 161
downloading telesoftware files (Did)	113, 119, 150-151
dumb modem	140, 142-143, 144, 148, 149
configuring software for	143
problems with	142-143
dump screen to printer ROM	86, 87, 93, 96, 99-100
dynamic Prestel frame	137
*DIR	32
*DISK	53, 104, 106, 107, 159
econet users	
autoboot	106, 109, 111
carousel on the network	81-83
installing the system	103-112

level 1 econet	175
level 2 or 3 econet	25, 52, 81, 82, 175
personalised system	12, 110
printer server	58, 90, 97, 162
startup	2
*FS	105
EdF	120, 155-157
editing frames within the terminal (EdF)	120, 137, 155-157
conceal/reveal text	156
graphics mode	156
help window	155
line feed	157
routing	155
nul	155, 160
preserving it	155, 160
tab stops	156
user defined function key strings	155
editor	5, 29-76
black background	71
conceal display	71
contiguous graphics	71, 75
double height	71, 72
edit functions	63, 64, 66-67, 175
end of line rule	68
escaping from this menu	31
flash/steady	68, 69
frames per file	30
graphic colour codes	63, 64, 70, 74
graphics mode	73-75
handling a single frame on the filing system	32, 43-46
handling the current page edit	32
handling the filing system	32, 47-59
hold graphics	71, 75
invisible characters	68
line feed within the terminal	157
menu	30-32
multiple editing of a viewdata base	112
new background	71
normal height	71, 72
own function key definitions	49-50, 67, 113, 176
pairs of functions	65
put graphics	70
release graphics	71, 75
returning to this menu	31
search/view mode	66, 76
separate graphics	71, 75
set graphics mode on special viewdata effects	63, 64, 71-71
starting up	29
the terminal	
online and offline	113, 117, 118, 135-149, 154, 157
using EdF	120, 155-157, 144, 145
text colour codes	63, 64, 69
workspace	35
end of line rule	68
ENTER page title	36

epson printers	94-95, 100
erase line	66
error detection, during transmission	144, 145, 147, 154
error messages	
Bad directory	23
Bad drive	23
Bad file name	23
Bad key	3-4, 128, 132
Block Count (no. 62)	151, 164
Block Seq (no. 64)	151, 164
Call — No reply	141
Can't extend	21, 151
Can't open/extend (no. 65)	151, 164
Catalogue (cat) full	42, 152
Data?	151, 164
Database full (no. 46)	43
DIALLING	141
DIM space	3
DISCONNECTED (nos. 66 & 73)	141, 148, 164
disk full	57, 152
Escape (no. 17)	164
File locked	46
Frame not found in database	34
Illegal disk swap	56
Intray stuffed full	20
Invalid database file	30, 159
Modem? (no. 71)	141, 164
NO ANSWER (no. 73)	164
NO DIAL TONE (no. 73)	164
No menu file	3-4
No reply (no. 61)	90, 164
No room	3, 151, 164
No such frame in database (no. 47)	43
noise (no. 72)	145, 147, 164
Not a valid database (no. 45)	43
No found	23
Not listening	90
O'flo (no. 69)	164
Page/frame does not exist	25
Setting file not found	3-4
Setting file too big	3-4
User printer handler file not found	3-4, 89
WAITING — NO ANSWER	141
WHAT? (no. 73)	141, 164
? (no. 70)	127, 164
errors due to hang-up	
of printer	89, 98
of terminal send	147
errors during search	27
ESCAPE J	125
ESCape sequence	137, 138
Exit from terminal (Ext)	117, 125, 155
whilst online	125, 126
EXIT THE VIEWDATA SYSTEM	6, 7
exit with SHWMENU	7
Ext	117, 125, 155

80 track disks	6, 9, 14, 175
*ENDTEXT	97
*EX	107
field	138, 139
file attributes	106, 107, 108, 111, 112
FILER	32, 53
filing systems, swapping between them	159
frame	
continuation	34, 38
copying	37, 38, 47
creating key definition	128-129
definition	34, 177
display by using BASIC program	180
editing in the terminal	
online	113, 117, 144, 145, 154, 157
offline	144, 145, 154, 157
field	138, 139
filing in the terminal	120, 123, 153-163
format	177
goodbye	148
header line	177, 178
-ID	33, 34, 38
image	35, 39, 177, 178
input	137
in tray	137
mailbox (inc multiple addressees)	137, 138, 139, 144, 146, 147, 148
blank frames	146
directory of	146
menu	113
message	137, 138, 139, 157
index for	146
sending to Prestel	146-147
multiple frame per file	43, 158
print a frame, in terminal mode (PtF)	120, 162
reading/writing into a frame with BASIC	180
response	137, 144
size	177
table	35, 36, 111, 157, 177, 178
tagging, in terminal	136-137
title/id exists	44
type	41
FRAMELISTa	101
frame printer	6, 91, 93-97 , 99
FRLISTa	101

function keys	49-50, 67, 113, 117, 122, 128-133, 176
defining	66
delete character	66
delete line	66
erase line	66
home cursor	66
in screen editor	61, 63-73
in the terminal	117, 122, 124, 128-133
insert character	66
insert line	66
pairs of keys	65
search/view	66, 76
set tab	66
functions, in terminal mode	116-122
funkey	50
future developments	178
*FS	105
*FX default values	126
*FX4	126
*FX5, 3	89, 97
*FX5, 4	90, 97, 126
*FX6, 0	91
*FX6, 10	91
*FX7	126
*FX8	126
*FX12	126
*FX18	50, 128, 129, 132
IIFK	130-132
40 track disks	6, 9, 14, 175
getting started	1
graphic colour codes	63, 64, 70, 74
graphics mode	73-75
hardware requirements	175
header block	150, 151, 152
headings for information providers	8, 9-10
help key	63
help window, in terminal (Hlp)	117, 122, 124, 155

HEY PRESTO VIEWDATA EDITOR	5, 29-76
editor menu	30-32
escaping from this menu	31
frames per file	30
returning to this menu	31
starting up	29
hex address	106
high speed transmission (Zip)	120, 137, 140, 144, 154
Hld	118, 149
Hlp	117, 122, 124, 155
HLD GR.	71, 75
hold last frame (Hld)	118, 149
home cursor	66
HOST	113, 154
intray file	18, 19
online editor	144, 145, 154, 157
program	6
housekeeping facilities	6
system menu	
terminal mode	117, 123-124
#	26, 135, 157
*HELP	97
*#	26

insert character	66
insert line	66
installing opn a network	103-112
access attributes	108
for public files	111
autoboot	106, 109, 111
COPYF	104-105
COPYFILES	104-105
preparation	
general	103-104
of the files	108
testing	
the system	110-111
transferred software	109
transferring software	104-107
with	
COPYF/COPYFILES	104-105
*FS convert DFS	105-106
manual transfer	106-107
users, setting up	
autoboot	106, 109, 111
individual viewdata bases	111-112, 158, 159
multiple editors	112
VIEWDATA, user name	109
\$.VIEWDATA	103, 105, 108
\$.VSMENU	108
\$.VWDB	103

integrex printer	86, 94, 102
intelligent modem	114, 140-141 , 144
configuring software for	143
intelligent viewdata terminal	113
internal title	20, 22
interrupting a display	26
intrad file	18, 19
I/O processor	106, 107
IP, Information Providers	41-42, 178
response frame to	137, 139
I.VWDB	21, 30
*I AM	2, 81, 104, 109
*INFO	106, 107

Kys	117, 122, 128-133
Ky0, Ky1,, Ky9	116, 124

LdF	120, 153
level 1 or 2 software	6, 9, 109
library	
currently selected	2, 108, 109
\$.library	2, 108
line feed to printer	91
load a frame in terminal mode (LdF)	120, 153
LOAD AN EXISTING PAGE	32, 45
LOCAL TELESOFTWARE FORMATTER	6
locking a file	51
Lve	118, 148
*LIB	2, 108
*LOAD	50, 106, 107

master database disk	22, 109
memory, space available	175
menu	
a general one	7
editor	30-32
the main (system)	5-13

microline printers	96
micronet 800	135
minimum requirements hard/software	175
modem	
configuration software for	143
Dacom	114, 140-141 , 144
problems with	41
dumb	142-143 , 144, 148, 149
problems with	142-143
IIM	130

network settings	103
NEW BG	71
new page	32, 35, 36
NML HT.	71, 72
note-base	66
number of page	33-34
*NET	2, 53, 104, 106, 107, 159
*NEWUSER	109
*NO BANNER	97

offline from a remote database	117, 118, 125, 140, 155
using Lve	118, 148
ONLINE HOST SYSTEM	6 , 144, 145, 154
online terminal	113-149
editing, on/off line	157
special keys	27, 155-156
to a remote database (CII)	118, 140-143
operating system star command (*OS)	117, 122, 126 , 158, 159
options to configure terminal	127, 132, 143, 146, 147, 157, 165-173
output to printer	85-92, 162
own function key definitions	49-50 , 66, <i>113</i> , 176
*OPTA4, 2	109, 111

PAGE, user memory base	106, 175
page	
changing the title	32, 35, 37, 38
definition	34
save the current one	32, 37, 38, 38
setting up a new one	32, 35, 36
title/number	33-34
paging or page mode	48, 58, 162
parallel printer interface	88, 162
pause (Pse)	117, 122, 134
personal viewdata bases	111
Prestel	
5, 6 26, 27, 33, 35, 41-42, 72, 80, 113, 125, 128, 134, 135, 137, 138, 144, 145, 146-147, 148, 154,	157, 178
price	41
print a frame, in terminal mode (PtF)	120, 162
printers	
abort printout	93
ASCII only	86, 93, 96, 100
baud rates	88, 94
colour choice menu	86
colour printing with an Integrex printer (with a centronix or RS232)	86, 94, 102
econet printer server	58, 90, 97, 162
epson printer	94-95, 100
FRAMELISTa	101
frame printer	93-97, 99
FRLISTa	101
line feed	91
local printer	90
microline printers	96
parallel interface	88, 162
save printer settings	92
save print list for multiple frames	93
serial interface	88, 102, 162
set configuration	8, 85-92
SETTING file	4, 11, 12, 89, 92, 98, 103, 106, 107, 108 , 110, 111
silver reed typewriter	96
size of printout	91, 95
switches in the terminal	169-170
typewriters	96
USERPH file	4, 89
user printer handler	89
word format	88
*ENDTEXT	97
*FX5, 4	90, 97
*FX6, 0	91
*FX6, 10	91
*NO BANNER	97
printing	
abort printout	93
frame	
normally	98-102
terminal mode (PtF)	120, 162
multiple frames	93, 101-102
of disk catalogue	53

routeing	93
rubbish bin	58
the frame list itself	101
PRINT VIEWDATA FRAMES	6, 98-102
problems, startup	1, 2-3
programming in BASIC, example	180
Pse	117, 122, 134
PtF	120, 162
put graphics	70
*<page-name>#	26, 33, 135
*PSERV	97
*PS n	90

?cf	
call characteristics	168
communications	166
dumb modem options	173
edit function options	172
error handling	167
filing characteristics	169
frame sending	167
keyboard interface	165
miscellaneous options	168, 171
printing characteristics	169-179
remote input buffering	168
telesoftware & filing	165
timers	167

random access filing system	
catalogue of	163
disk checking	56
disk users	14, 25, 43, 157, 158
econet users	15
errors	43
rubbish bin	46
with terminal	114, 158, 159
reading from a frame using BASIC	180
receive and transmit synchronisation	117, 122, 134

re-configuring	
the printer	85-92
the system	8-13, 103
the terminal	146, 147, 157, 165-173
refreshing the screen	27
remote database, connecting and disconnecting	118, 135-149
RETURN key	34
reveal key	27, 76
in the terminal	121, 122
RLS GR.	71, 75
ROM, screen dump to printer	86, 87, 93, 96, 99-100
root directory	54, 103, 104, 106
root page	25, 135
routeing	
local database	32, 33, 35, 39-41 , 76, 111, 160
remote database	157, 160
RS423	88, 114, 143
rubbish bin	46
*REMOTE	83
*RENAME	108
save a frame, using the terminal (SvF)	120, 160
save last telesoftware file received (Sve)	119, 152
SAVE THE CURRENT PAGE	32, 37, 38, 44
save the printer settings	92
screen editor	60-76, 176
auto indent	62
black background	71
bottom row	60
colour wrap	62, 157
conceal display	71
contiguous graphics	71, 75
double height	71, 72
edit functions	63, 64, 66-67
end of line rule	68
flash/steady	68, 69
function keys and the keyboard	61, 63-76 , 176
graphics colours	63, 64, 70 , 74
graphics mode	73-75
hold graphics	71, 75
invisible characters	68
new background	71
normal height	71, 72
put graphics	70
release graphics	71, 75
separate graphics	71, 75
set graphics mode on	70
tab key	62
tab stop row	60, 66
text colours	63, 64, 69
top row	60
viewdata control codes	68

screen flicker switch	8, 101
scroll, on/off in terminal	126, 127, 163
searching a viewdata base	135-139
SEARCH LOCAL VIEWDATA BASE	5, 9, 25-28
by continuation frames	26
by jumping directly to a page	26
by menu	26
by stepping back through previous frames	26
errors	27, 34
leaving the program	28
special keys	27
search/view	5, 9, 66, 76
second processor	107, 175
security of files	13
send a message or frame (Snd)	118, 137, 139, 144-147, 154
sending information	137-139
SEP GR.	71, 75
serial printer interface	88, 102
set graphics	70
SETTING file	4, 11, 12, 89, 92, 98, 103, 106, 107, 108, 110, 111
SET UP A NEW PAGE	32, 35, 36
SET UP A PAGE'S ROUTEING	32, 35, 39-41, 76, 111
SHWMENU	7
silver reed	96
single frame per file	
general	14
title size	34
with the terminal	113, 114, 158, 159
size of database	19
size of printout	91, 95
Snd	118, 137, 139, 144-147, 154
software requirements	175
special keys	27
standard viewdata base files	19
starting up	
disk users	1
alternative	2
problems	1, 3
econet users	2
alternative	3
installing	103-112
problems	2-3
status line, in the terminal	116, 122
Sve	119, 152
SvF	120, 160
swap between filing systems	159
swap between viewdata bases (Swp)	120, 158-159
swapping disks	14, 53, 54, 55, 98, 158, 159
switching between filing systems	159
Swp	120, 158-159
SYSTEMU file	4
system disk	1
system menu	1, 2, 5-13
system user	52

system's settings	8-13
personalised	12, 110
temporary	12
SYSTEM '*' COMMAND	32, 37, 8
2nd processor	107, 175
\$.SETTING	103, 109
*SAVE	50, 106, 107

TAB key	62
tab stops, set/unset	66
tagging a frame, in terminal	136-137
tape filing system	152
telesoftware	
downloading	113, 119, 150-151 , 158
functions	119, 123, 150-152
terminal	6, 113-173
teletext character set	178, 179
terminal	
amend option on Prestel	146
auto-dial	113
Catalogue frames (Cat)	120, 163
communications functions specific to CommuniTel	118, 123, 135-149
general for viewdata bases	135-139
conceal character	129
configure terminal software (?cf)	117, 122, 127 , 140, 141, 143, 145, 146, 147, 157, 165-173
call characteristics	168
dumb modem options	173
edit function options	172
error handling	167
filing characteristics	169
frame sending	167
keyboard interface	165
miscellaneous options	168, 171
printing characteristics	169-179
remote input buffering	168
telesoftware and filing	165
timers	167
CONNECTED	140
connections to modem	114
COPY key	147, 153, 157
Dacom modem	114, 140-141 , 144
configuring software for	143
problems with	141
delete a local frame (DlF)	120, 161
DIALLING	140
downloading telesoftware files (Dld)	113, 119, 150-151
editing frames on or off line (EdF)	120, 155-157

conceal/reveal text	156
graphics mode	156
help window	155
routeing	155
null	155, 160
preserving it	155, 160
tab stops	156
user defined function key strings	155
errors in transmission	144, 145, 147, 154
ESCAPE J	125, 144
Exit from terminal (Ext)	117, 125 , 155
file type	114
frame filing functions	120, 123, 153-163
frame tagging	136-137
functions	
an overview	113, 116-122
in detail	113
header block	150, 151, 152
help window (Hlp)	117, 122, 124 , 155
high speed transmission (Zip)	120, 137, 140, 154 , 144
hold last frame (Hld)	118, 149
housekeeping functions	117, 123-134
input frame	137
inray frame	137
Ky0, Ky9	116, 124
load a frame in terminal mode (LdF)	120, 153
mailbox frame	137, 138, 139
blank	146
directory	146
message frame	137, 138, 139
modem	
configuring software for	143
Dacom	114, 140-141 , 144, 148, 149
problems	141
dumb	142-143 , 144, 148, 149
problems	142-143
offline from a remote database	117, 118, 125, 140, 155, 157
using Lve	118, 148
online to a remote database (Cll)	117, 118, 122, 125, 140-143 , 154, 155
operating system star command (*OS)	117, 122, 126 , 158, 159
pause (Pse)	117, 122, 134
print a frame, in terminal mode (PtF)	120, 162
printer configuration	169-170
program	6
repeat transmission of frame	139, 151
response frame	137
reveal function	121 , 122
save a frame, from the terminal (SvF)	120, 160
save last telesoftware file received (Sve)	119, 152
scroll, on/off	126, 127, 163
send a message or frame (Snd)	118, 137, 139, 144-147 , 154
status line	116, 122
swap between viewdata bases (Swp)	120, 158-159
tape filing system	152
telesoftware functions	119, 123, 150-152
telesoftware and viewdata	113-173

transmission time	144, 154
user defined function keys	
automatically (Kys)	113, 117, 122, 128-133
creating definition frames	128-129 , 132
individually (*OS)	128
problems	132
size limit	132
using terminal key definitions	131-132
visible cursor	157
WAITING	140
exit remote database	148
#	135, 137
*	135
**	135
*BASIC	126
*DR	126
*EXEC	133
*FX	126
*FX4	126
*FX5, 4	126
*FX7	126
*FX8	126
*FX12	126
*FX18	128, 129, 132
*KEY	128, 132
*NET	126, 159
*00	135
*09	135
*07#	146
*90#	148, 149
*800#	135
*910#	144, 154
*#	135
#	146, 147
time for transmission	144, 154
title/number of current page	33-34
transferring frames between viewdata bases	14, 47, 55, 104-107
transmit and receive errors	144, 145, 147
repeat transmit	139, 151
synchronisation	117, 122, 134
time	144, 154
tutorial guide	10
typewriters as printers	96
*TAPE	53
*TAPE3	53

unlock a file	51
user access	41, 55, 111
user define the function keys in terminal mode	
creating definition fraems	128-129 , 12
problems	132
size limit	132
using Kys	117, 122, 128-133
using *OS	128
using terminal key definitions	130-131
using terminal edit key definitions	131-132
USERPH file	4, 89
*USERS	51

viewdata base, personal or individual	111
viewdata control codes	68
VIEWDATA/SOFTWARE TERMINAL	113-173 , 114
VIEWDATA/TELESOFTWARE TERMINAL	6
VIEWDATA, user name	109
VIEWS	111
VSMENU file	108, 175
VWDB	21, 30, 43, 159
\$.VIEWDATA	103, 108
\$.VSMENU	108
\$.VWDB	103, 109
*VBOOT	2, 12, 81, 106, 107, 108, 111
*VMENU	29

WAITING	140
word format, setting	88
workspace, filing and operating systems	175
wrap around	
in edit mode	66
in menu selection	30, 79
in terminal mode	157
writing into a frame using BASIC	180

*ACCESS	108, 112
*BASIC	126
*CAT	106
*CDIR	104, 11
*DIR	32
*DISK	104, 106, 107, 159
*DRIVE	126
*ENDTEXT	27
*EXEC	107, 133
*FS	105
*FX	126
*FX5, 3	89, 97
*FX5, 4	90, 97, 126
*FX6, 0	91
*FX6, 10	91
*FX7	126
*FX8	126
*FX12	126
*FX18	50, 128, 129, 132
*HELP	97
*I AM	2, 81, 104, 109
*INFO	106, 107
*KEY	128, 132
*LIB	2, 108
*LOAD	50, 106, 107
*NET	2, 53, 104, 106, 107, 126, 159
*OPT4, 2	109, 111
*OS	117, 122, 126, 158, 159
*<page-name>#	26, 33, 135
*PS n	90
*PSERV	97
*REMOTE	82
*RENAME	108
*SAVE	50, 106, 107
*TAPE	53
*TAPE3	53
*VBOOT	2, 12, 106, 107, 108, 111
*VMENU	29, 81, 107, 108, 111
*!BOOT	2, 12, 106, 107, 111, 175
*	32, 33, 37, 40, 114, 117, 122, 126, 135, 158, 159
*#	25, 135
**	26, 135
*00#	27, 135
*09#	27, 135
*7#	146
*90#	28, 148, 149
*800#	135
*910#	144, 154
#	146, 147
!IFK	130-132
!IM	130

