HEY PRESTO

THE COMPLETE VIEWDATA SYSTEM

for

THE BBC MICRO

Network

Group users

Multiple databases

Public access

technical note

HEY PRESTO

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for

THE BBC MICRO

PRINTER

1. STARTING UP THE SYSTEM

STARTING UP - THE SYSTEM MENU

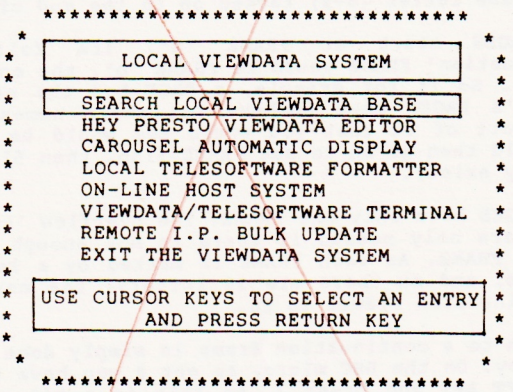
The current release is designed to work on a double disk drive.

It is necessary to have :

The system disk in drive Ø,
and a formatted disk to hold the database in drive 1.

The auto boot option is set on the system, so the system is simply booted by holding down the SHIFT key and pressing the BREAK key.

The following menu should be displayed on the screen:



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 program will be called in.

On exit from a program, the above menu is automatically recalled. The exception is the Viewdata/Telesoftware Terminal, from which the menu is recalled by holding down SHIFT and pressing BREAK. In both cases, the Viewdata SYSTEM disk must be in Drive Ø.

The following sections outline how each of the individual programs, called from the Main Menu, works.

2. SEARCHING A VIEWDATA DATABASE

INTRODUCTION

A Viewdata database consists of a number of screenfuls of information, with a very simple method of moving between them. Before going into the details of how to use such a system, it is worth looking at the way it is organised.

PAGES AND FRAMES

A T.V. screenful is the smallest unit of a Viewdata system, and is called a **FRAME**.

Because a T.V. screen is not very good for showing a lot of text, there is a larger unit, called a **PAGE**. This is made up of one or more **FRAMES** which have the same basic name. They are distinguished from each other by having a lower-case letter (a-z) tacked on to the end of the name.

All **PAGES** start at **FRAME** 'a'. Its follow on, or 'continuation' **FRAME** would be **FRAME** 'b', the one after that 'c' etc. So if for example, a **PAGE** had the name 513 (all Prestel's **PAGES** have numbers for their names), then the first part of it that you would see would be **FRAME** 513a. You could then go on to see **FRAME** 513b, then 513c and so on (if they exist).

Many **PAGES** have only one **FRAME**. The overflow 'continuation' **FRAMES** are only needed if there is not enough room on the present **FRAME**. As each **FRAME** is marked by a letter of the alphabet, and as there are 26 letters, the maximum number of continuation Frames is 26.

Going on to a continuation Frame is simply done by pressing the **#** key. On the BBC micro, to get **#** you have to hold down the **SHIFT** key and press 3. As this is a bit of a fumble, you can press **RETURN** instead. Both will work when you are searching through a database.

MOVING BETWEEN PAGES

As well as the continuation Frames, any Frame can be linked to up to 10 other Pages. You get to these by pressing one of the number keys, 1 to 9 and 0. The Frame you are looking at is replaced by the first Frame of the new Page.

Usually the choice of pages available from a frame is presented in the form of a Menu, with a brief description attached to each number.

An example might look like this:

```
**********************************
*  LOCAL VIEWDATA        0a      0p *
*                                   *
*    MAIN MENU                      *
*                                   *
*    1. News                        *
*    2. Whats On                    *
*    3. Entertainment               *
*    4. Leisure Activities          *
*    5. Sport                       *
*    6. Shopping                    *
*    7. Local Information           *
*    8. Forth coming events         *
*    9. Alphabetical index          *
*    0. How to use this system      *
*                                   *
*    Press number of your choice    *
*                                   *
**********************************
```

It is worth noting that the top line of a frame is a heading line, with a database title, followed by the Page name and Frame letter, (in this case 0a), and, at top right, is the price you are being charged for looking at this Frame, (in this case 0p). Page 0 is an important Page as it is the main menu for the whole database.

In this case, if you wanted to see what was on at the cinema, you would press the number 3, in which case you might get:

```
**********************************
*  LOCAL VIEWDATA        3a      Øp *
*                                   *
*   ENTERTAINMENT                   *
*                                   *
*   1. Theatre                      *
*   2. Concerts (Classsical and Rock) *
*   3. Cinema                       *
*   4. Discos                       *
*   5. T.V. and Radio               *
*                                   *
*                                   *
*                                   *
*                                   *
*  Press 9 for Sport                *
*  Press Ø for Main Menu            *
*                                   *
**********************************
```

You would then press 3 and so on until you reached the information you wanted.

REVEAL FUNCTION

Some Viewdata screens have 'concealed lines' and display a prompt to press the REVEAL key. On the LOCAL Viewdata system, you press R to reveal, while if you are using the on-line Terminal, you hold down the SHIFT key and press the DELETE key to perform the same function.

GETTING BACK

When you have found (or didn't find) what you were looking for, you need to be able to get back up to earlier menus or right back to the start. There are different possible ways of doing this.

a) **MENU** In the last Frame there is an example of one of the number choices (0) being used to offer a path back to the last menu. All well designed Viewdata Pages should offer some route back out. This might be a problem if several menus are routed to one Frame. In the above example there is a 'sideways' option (9) to take you to the Sports menu, so the Sports menu can be got to by different routes. What to do if the frame offers you no way back?

b) ***#** By Pressing the * key followed by #, (or RETURN on the BBC), it is possible to step back to the last Frame you were looking at. On Prestel, this can be repeated up to 3 times, which is often, frustratingly, not enough. On the BBC micro's local Viedata system you can *# your way back through the last 10 Frames that you looked at.

c) ***0#** When all else fails, it is possible to jump directly to Page 0 by typing *0#. After pressing the *, a green star will appear at the bottom left of the screen. This is the message line. The 0 will appear after it. When you press # (or RETURN), the main menu will reappear on the screen.

JUMPING TO ANY PAGE

Step c), jumping to Page 0 by typing *0#, is an instance of a more general method of jumping to a Page.

By typing *, followed by the Page name, followed by #, it is possible to jump directly to that Page. Typing *513# for example would take you directly to 513a.

Note that you always jump to the first Frame, Frame 'a', of the Page. The only way of getting to continuation Frames is by pressing # from the 'a' Frame. That is why the Frame letter ('Frame-ID') is not put in when jumping to a Page.

It is often worth noting the names of Pages of interest so that you can jump straight to them without having to go back and forth through the menus.

SEARCHING A LOCAL VIEWDATA BASE

In order to search a local Viewdata database on the BBC system, make sure the System disk is in Drive 0, and the database disk is in Drive 1. Then boot the Main Menu and select the option:

SEARCH THE LOCAL VIEWDATA BASE

The HALLOa page appears on the screen. Press RETURN (or #), and the 0a page should then come up. It is up to you to make sure that your database disk has a 0a page on it, set up as a root index or main menu page. (See later section on creating a database). If there is not one on the disk, the screen will go blank with the message:

PAGE/FRAME DOES NOT EXIST

at the foot of the screen. It is still possible to jump to a page on the disk by entering:

*<page name>#

and continuing from there.

LEAVING A VIEWDATA SYSTEM

The standard way of logging off a Viewdata system is by entering:

*90#

Usually a 'goodbye' Page is displayed and the session ends. If you are working over the telephone, you should then ring off as you are still connected... and being charged.

If you are working with the BBC local Viewdata system, the System Menu will be rebooted. You can also leave the BBC local system simply by pressing the ESCAPE key which also reboots the System Menu.

3. USING THE HEY PRESTO EDITOR FOR THE BBC MICRO

INTRODUCTION

The Editor 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 from a database. It enables you to store them on disk, 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. But a fuller explanation is useful at the start.

STARTING UP

In order to get into the Editor system, boot the main system menu from the system disk in Drive Ø.

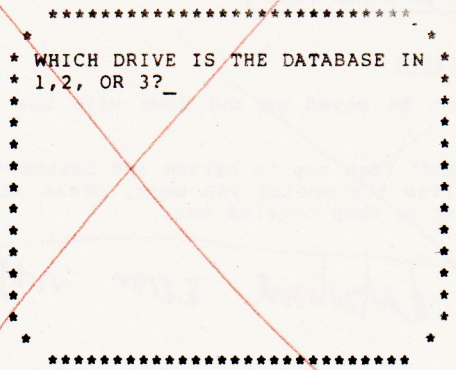
Use the DOWN cursor key to bring the red selection bar down to the option:

HEY PRESTO VIEWDATA EDITOR

A greeting page will come up.

Wait while the HEY PRESTO Editor is loaded.

The screen then clears to:

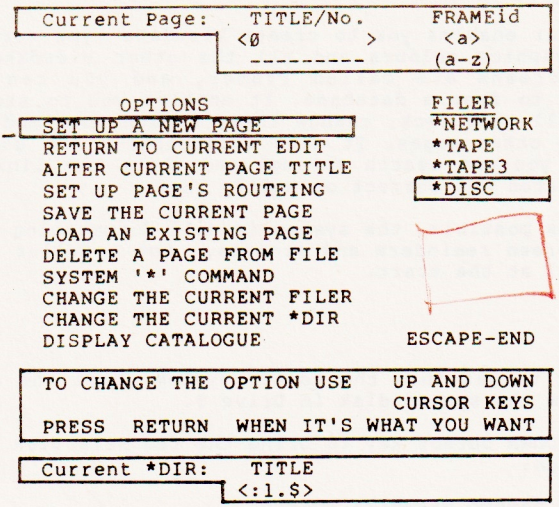


Generally, the database disk is in Drive 1, so press 1, followed by RETURN.

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

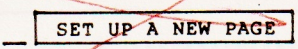
THE EDITOR MENU

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:



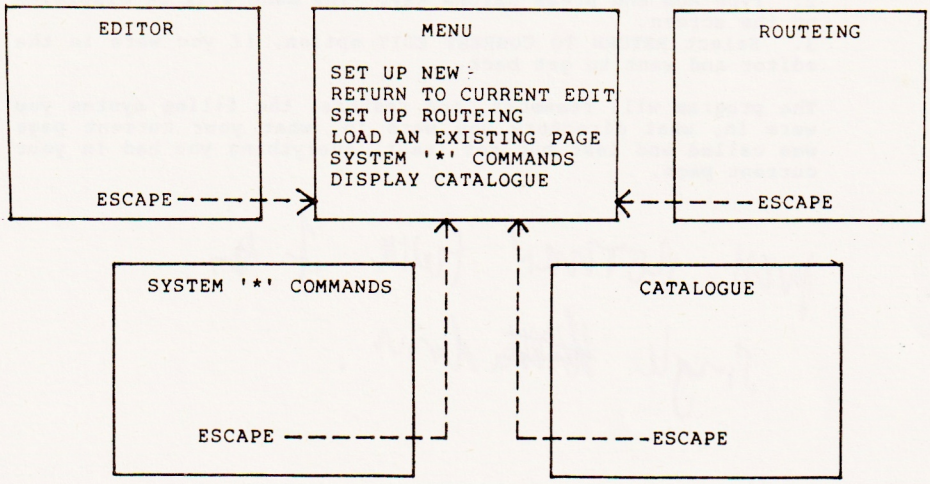
MAKING A SELECTION

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.

LEAVING 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.



ESCAPING BACK TO THE MENU

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

ESCAPING FROM THE PROGRAM

To escape from the program altogether,

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'. To prevent you from accidentally falling out of the menu, as well as one of the other four by holding the **ESCAPE** key down for to long, a prompt appears under the options when **ESCAPE** key is pressed from the menu which says:

PRESS RETURN KEY TO CONFIRM ESCAPE TO END

If you do press **RETURN**, the screen clears, and you are returned to System Menu. Pressing any other key (including **ESCAPE** again) returns you to the red option bar. This also happens after several seconds if NO keys are pressed.

KEY 10 close#0,

WHAT TO DO IF YOU PRESS BREAK BY MISTAKE

If you come out of the program by accidentally hitting **BREAK**, and want to get back:

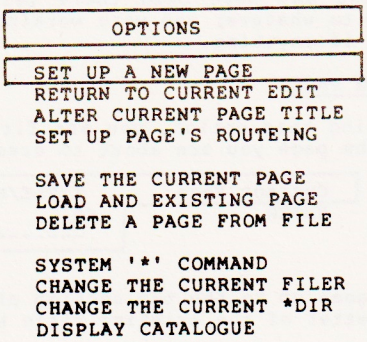
1. Type OLD and press **RETURN** key.
2. Type RUN and press **RETURN** key. The menu will be displayed on the screen.
3. Select **RETURN TO CURRENT EDIT** option, if you were in the editor and want to get back.

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 had in your current page.

press RETURN twice if on single drive.

THE MENU OPTIONS

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



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 file on the filing system.

3. (Blue) Handling the filing system, or FILER for short.

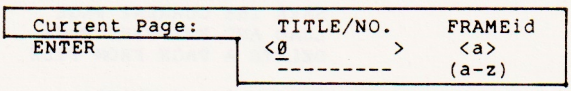
The next three sections deal with all of the options in turn.

1. HANDLING THE CURRENT PAGE

SET UP A NEW PAGE and RETURN TO CURRENT EDIT both take you to the Editor. 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, if anything.

SET UP A NEW PAGE

When selecting this option, you are first prompted to enter a title for the page you are about to create.



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 Ø.

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, you should stick strictly to numbers. The system leaves the choice, and the responsibility, to you.

You then 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.

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

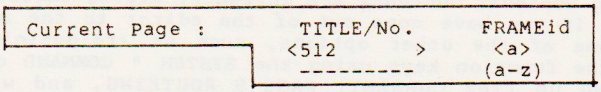
Pressing RETURN without typing anything accepts whatever is displayed as the page title.

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 ESCAPE (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.

ENTERING THE FRAMEid

If you pressed RETURN, the cursor moves onto the FRAMEid secton



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 FRAMEid was there already, escapes the option and returns you to the menu. If you pressed RETURN you are then placed in the editor with a blank text screen with the cursor in the top left hand corner (HOME).

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 1/6th of an A4 sheet of typing. 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 in the viewdata base mode, 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.

RETURN TO CURRENT EDIT

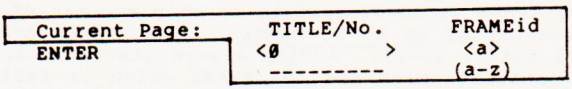
Selecting this option takes you directly to the editor, preserving whatever contents are currently stored there. This is useful if you have come out of the editor to the menu to perform one of the other options, such as (re)defining the text on the function keys using the SYSTEM * COMMAND option, or 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 and 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 make the change.
3. Select RETURN TO CURRENT EDIT, and change the text.
4. After that, press ESCAPE to return to the menu.
5. and SAVE THE CURRENT PAGE.

ALTER CURRENT PAGE TITLE

On pressing RETURN, this option puts the cursor in the top section of the screen and prompts you to ENTER a new title.



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
This 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.

SETTING UP ROUTEING

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. It is 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:

```
Page Ø                                Frame-Id
CUG                                   User Access
Frame Type                            Price

                  Choice Type_
Ø *                                   1 *
2 *                                   3 *
4 *                                   5 *
6 *                                   7 *
8 *                                   9 *

TO SELECT AN ENTRY, USE    UP AND DOWN
                           CURSOR KEYS
PRESS RETURN AFTER CHANGING AND ENTRY

                          ESCAPE → MENU
```

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, and the page you want the user to be taken to, is very simple: When the cursor is against the number, type in the title of the page and press the RETURN key. And that's it.

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 therfore always supply an 'a' frame-ID part automatically, so you don't need to bother entering it in.

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

CHOICE TYPE : STRICT

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

Choice type S

Ø ØØ	1 Ø1
2 Ø2	3 Ø3
4 Ø4	5 Ø5
6 Ø6	7 Ø7
8 Ø8	9 Ø9

CHOICE TYPE : NONE

Entering N (RETURN), for choice type means 'NO' routeing and every choice is set to a '*' automatically. However, it is in general, bad practice to set up a frame with no routeing to take the poor user out of it!

CHOICE TYPE : FREE

Pressing F (RETURN) for choice type means that you want to set up 'FREE' routeing it is then up to you to decide what page will be selected by each choice number. The cursor simply moves to choice Ø. The 'f' choice is kept mainly for consistency whith the PRESTEL on-line editor, but is a bit redundant in this editor as pressing RETURN or the DOWN cursor key has same effect.

A NOTE ON ENTERING TITLES

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.

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.

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 can cause 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.

PRESSING '*' TO CANCEL AN ENTRY

Pressing '*' in the Routeing 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 Routeing Section and entering one in the main menu.

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 nest one is called up.

To do this, Choice Number 9 is used to hold the follow on title and the CUG at the top is used to hold the time delay in 1/100 th 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 access
When using the network filing system,

2. HANDLING A SINGLE FILE 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.

SAVE THE CURRENT PAGE

Selcting this option saves the current contents of the editor, together with the "back page" information, (CUG, routeing etc.) under a filename 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.

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

Press COPY key to overwrite old frame

appears at the top of the screen.

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

Frame ØA overwritten

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

Frame ØA NOT overwritten

comes up. The cursor returns to the menu.

ERROR MESSAGES

Error messages, such as FILE LOCKED or DISC 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 dissapear as soon as you press RETURN to reselect 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. As with SET UP A NEW PAGE, you can press RETURN to accept what is displayed.

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
ERROR NUMBER :
```

in the top left of the screen.

There are several reasons why a page/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 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.

If you are in the Disk Filing System (DFS), the contents of the other directories if any, are also displayed with their directory name prefixed. So if you had saved a frame Øa in the directory "A" this would be displayed as:

```
A.Øa
```

providing 'A' is not the current directory. (See the DFS manual for further information on directories).

If you find that file you want is prefixed by a Directory letter in this way, it is necessary to select that directory in order to load the frame. See the later section,
CHANGE THE CURRENT *DIR on how to do this.

If frames are mixed up with other files, you can usually tell which are Viewdata files by their having a small Frame-ID letter (a-z) at the end of the title.

DELETE AN EXISTING PAGE

This option enables you to delete and exisitng 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

comes up on the screen.

These messages are removed when you change the option with the cursor keys or press **RETURN.**

ERROR MESAGES

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 frames.

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.

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:

```
**********************************
*                                *
*     SYSTEM '*' COMMAND         *
*                                *
*  ENTER COMMAND : *_            *
*                                *
*                                *
*                                *
*                                *
*                                *
*                                *
*                                *
*                                *
*  PRESS SHIFT TO SCROLL SCREEN... *
*  .... OR ESCAPE TO RETURN TO MENU.*
*                                *
**********************************
```

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

1. 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. Suppose you want function key f9 to generate the word 'KEY' when it is pressed. When you are prompted:

```
ENTER COMMAND: *_
```

Enter: KEY 9 "KEY"
and press RETURN

```
ENTER COMMAND *_
```

comes up a second time on the screen.

Pressing the red function key, f9, will now cause the letters KEY appear after the '*'.

```
ENTER COMMAND *KEY_
```

If you then wish to define the function key f0, press 0 followed by the letters you want to generate:

```
ENTER COMMAND : * KEY0"whatever you want it to produce"
```
and press RETURN

If you wish to have leading or trailing spaces you must enclose the whole string in speech marks e.g.

```
ENTER COMMAND : *KEY 1 "TOTAL:  "
```

Otherwise they are optional.

Colour codes can be entered using SHIFT or CTRL, and the function keys 1-7.

Cursor keys do not work in this context. Instead, they are coded and appear as blank spaces. They come into effect when the function key is used later. If you want to generate a CARRIAGE RETURN for the Menu, you must enter it using the double vertical bar key followed by upper case M.

The function keys can be used to produce text in either the SYSTEM * command function, or when 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. These are restored after a function key has been pressed. (See later section).

2. 'LOCKING' A FILE

In the disk operating system, it is often useful to 'LOCK' a file which prevents it from being overwritten by accident. In order to LOCK a file from the SYSTEM '*' COMMAND, when the prompt:

```
ENTER COMMAND :*_
```

appears, enter

```
ACCESS <filename>
and press RETURN
```

where <filename> 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 51b)

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. Each file has to be individually locked so it is useful to define one of the keys to produce 'ACCESS' if you are going to lock several.

To UNLOCK a frame, when the prompt

```
ENTER COMMAND :*_
```

appears, enter

```
ACCESS <file name>
and press RETURN.
```

Leaving the L out removes the LOCKED attribute and the 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.

3. 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 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

```
**********************************
*                                *
*      SYSTEM '*' COMMAND        *
*                                *
*  ENTER COMMAND : * USERS       *
*                                *
*    101  JOHN                   *
*    102  MARY                   *
*    105  SUE                    *
*    136  MIKE                   *
*    173  GLADYS       S         *
*                                *
*  ENTER COMMAND : *_            *
*                                *
*  PRESS SHIFT TO SCROLL SCREEN....*
*  ... OR ESCAPE TO RETURN TO MENU *
*                                *
**********************************
```

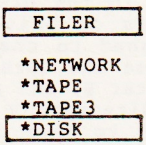
The 'S' after GLADYS would indicate that GLADYS is a 'System User' with special access to commands for controlling the filing system.

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



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. 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.
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 *TAPE3.
3. When in either cassette filing system two options are NOT available:

   DELETE AN EXISTING PAGE and CHANGE THE CURRENT DIRECTORY.

   If an attempt is made to select either, 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, while the directory size is reduced to 4 characters.
5. The page title size goes up to 9 characters when the network or either of the cassette filing systems are selected.
6. The size of the Current Directory is increased to 16 when the Network Filing System is selected.

CHANGE THE CURRENT *DIR

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. This option enables you to change the currently selected directory (and disk). 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 use the Cursor Right key (-) to move the cursor under the 1, enter 0, and press RETURN. If instead you wanted to change to directory V on Drive 1, you would use the Cursor Right key (-) to move the cursor to the $, enter V 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.

This function then serves the following purposes:

1. To display a reminder 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.$.

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. 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, the 0a frame is loaded in and then f8 pressed 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 to the frames.

If on the Network, you have been changing directories, and want to return to your User Root Directory, when the cursor gets to the foot of the screen, use the space bar to blank out any directory name that may be there, and press RETURN.

DISPLAY CATALOGUE

This option changes the screen to a display of the catalogue of the currently selected directory.

```
  ************************************
 * PRESS SHIFT TO SCROLL FOR MORE, OR..*
*                                      *
* VIEWDATA(29)        Option 3 (EXEC)  *
* DRIVE 1                              *
* Directory :1.$      Library :0.$     *
*                                      *
*       0a                  1a         *
*       21a                 22a        *
*       23a                 24a        *
*       24b                 2a         *
*       241a                2411a      *
*       24111a              24112a     *
*       24113a              24114a     *
*       BYEa                HALLOa     *
*                                      *
*                                      *
 *      ...PRESS ESCAPE FOR MENU.      *
  ************************************
```

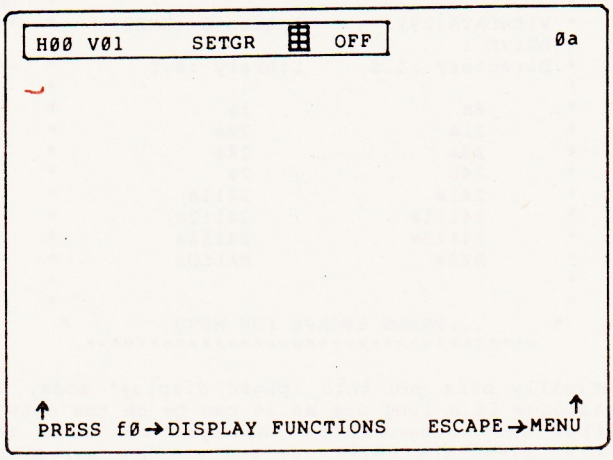
It automatically puts you into 'paged display' mode, so that if the catalogue is a long one as it can be on the network, it pauses after one screenful so that you can read it. To display more, press the SHIFT key and another screen's worth is shown.

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, "SETGR 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 foot 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 unsetting TABS for more.)

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 of 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 LOCK, 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 WARNING:

DONT LEAVE IT ON - IT ALTERS THE USE OF THE FUNCTIONS KEYS. WHEN POSSIBLE, USE 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 a special version of this editor can be made available for use with a viewdata keyboard, this is 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 above. 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.

N.B 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 goes 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 he 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 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.

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 ..... 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 preset 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 SHIFTed 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 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.

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. (N.B. 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 usrsor 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 is 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/VIEW" is displayed at the top of screen instead of "SETGR OFF" to show that you are no longer in EDIT mode and a prompt appears at the foot of the screen:

f0→EDIT #→NXT FRAME *#→GOBACK ESCAPE→MENU

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

GETTING STRAIGHT BACK TO THE MENU
Pressing ESCAPE key 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 routeing. If any mistakes are found, they can be corrected straight away 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 temoprarily lost. the following messages come up at the foot of the screen:

f0 f1 f2 f3 f4 f5 f6 f7 f8 f9
YOUR OWN PRESET 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 and 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.

WARNING(S) 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 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 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 somtimes bizarre effects. The worst is when your carefully set up graphics suddenly becomes a jumble of characters. (If this happens, DONT 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 genaral 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 + f8) 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 + f9), 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 the 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'.

RULES OF THUMB FOR PLACING CODES

It is clearly important to remember where you have put your codes so that you can change them if need be, and dont overwrite them by mistake.
The following are good rules of practice which you will find well worth the effort.

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 + fØ - 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 + f1 - RED	This enters the RED text code at the current cursor position.
SHIFT + f2 - GRN	This enters the GREEN text code at the current cursor position.
SHIFT + f3 - YLW	This enters the YELLOW text code at the current cursor position.
SHIFT + f4 - BLU	This enters the BLUE text code at the current cursor position.
SHIFT + f5 - MGN	This enters the MAGENTA (PURPLISH) text code at the current cursor positon.
SHIFT + f6 - CYN	This enters the CYAN (PALE BLUE) text code at the current cursor positon.
SHIFT + f7 - WHT	This enters the WHITE text code at the cursor position.
SHIFT + f8 - FLA SH	This enters the FLASH code and causes succeeding charactcters to flash.
SHIFT + f9 - STE DY	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 f8 and f9 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 diplays 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 SET GR 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 preceeded 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 [illegible] then by putting in a graphics colour code at the beginning of a line and holding down CTRL plus f9 then this 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 FUNCTIONS

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 +CTRL CTRL	This displays the SPECIAL EFFECTS WINDOW This message reminds you that both SHIFT and CTRL must be held down to obtain these effects from the function keys.
SHIFT + f1 - DBL +CTRL HT	DOUBLE HEIGHT. This is one of the most popular special effects, hence its 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 +CTRL HT.	NORMAL HEIGHT. This switches of the effect of DOUBLE HEIGHT. All succeeding characters appear in normal height in the top half of the double height line. N.B. Nothing can be *
SHIFT + f3 - SEP +CTRL GR.	SEPARATE GRAPHICS. This has the effect of making individual 'cells' of the following graphics pattern 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 +CTRL GR.	CONTIGUOUS GRAPHICS. This is used to 'switch off' the Separte Graphics effect and make the character cells appear joined up again.
SHIFT + f5 - HLD +CTRL GR.	HOLD GRAPHICS. When codes are entered, they cause a blank space to 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 preceeds them (if any).
SHIFT + f6 - RLS +CTRL GR.	RELEASE GRAPHICS. This is used to 'switch off' the effect of HOLD GRAPHICS. Special effects codes again appear as a blank space.

* entered in the bottom half. This is a property of the Viewdata display chip.

SHIFT + f7 - CNC +CTRL DSP	CONCEAL DISPLAY. This code has the effect of making the rest of the line 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 +CTRL BG	BLACK BACKGROUND. This code is is used to 'switch off' the NEW BACKGROUND code, and thus limits the new background colour to a limited part of the line.
SHIFT + f9 - NEW +CTRL BG	NEW BACKGROUND. This code is used to set a background colour for the line. It MUST be preceeded 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.

GRAPHICS MODE.

TO ENTER GRAPHICS MODE : Hold down CTRL, press f8, release CTRL
TO LEAVE GRAPHICS MODE : Press ESCAPE

When you enter this mode, the top line changes to:

```
H07  B12    SETGR  ▦  ON        0a
```

the ON flashes.

The bottom line changes to :

```
ESC→END   USE QW/AS/ZX TO UN/SET   COPY→PUT
```

This 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 ordingary text entry mode.

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 (32) 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 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 and the SPACE BAR all still work normally.

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.

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 graphis 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. We shall see how to hide this gap when we come to using 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.

Note codes for turning text characters to graphics

see table in user manual.

SPECIAL EFFECTS

Four of the special effects codes relate specificly to graphics.

These are the two pairs:

SEPARATE GRAPHICS	SHIFT + CTRL + f3
CONTIGUOUS GRAPHICS	SHIFT + CTRL + f4

and

HOLD GRAPHICS	SHIFT + CTRL + f5
RELEASE GRAPHICS	SHIFT + CTRL + f6

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 follow 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 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.

For instruction & hint in how to use the graphics mode to the full, see the tutorial manual.

4. CAROUSEL AUTOMATIC DISPLAY

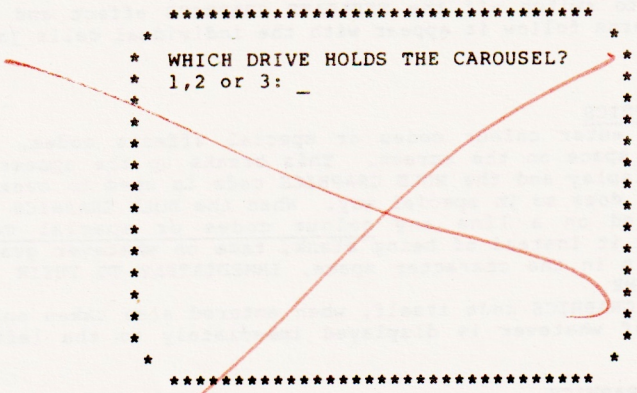
INTRODUCTION

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, a disk holding the Pages to be displayed must be in Drive 1. The program is run by selecting the CAROUSEL option from the main System Menu. The following will be displayed on the screen:

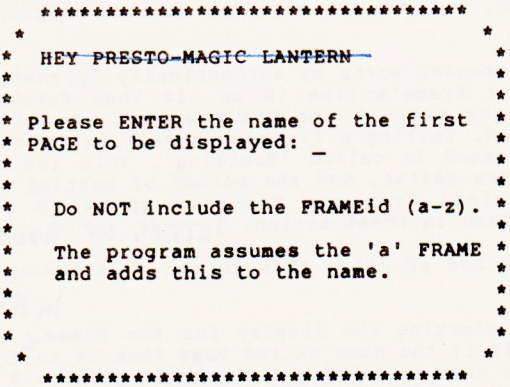


Enter the number of the Drive which holds the disk holding the Carousel Pages, and press **RETURN**.

Boot system menu. (see Ch. 1). Double disk dr. place V data base with Carousel in dr. 1. (See ~~not~~ later section for how to set up) Press RETURN. - Single Disk dr. replace otherwise automatic

A1 with search, the message - Wait a moment comes up while catalogue loaded.

The screen then changes to:



4 will photo

As prompted, you enter in the page name, leaving out the FRAMEid, and press **RETURN**.

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 overidden, 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 Ø, and press:

ESCAPE key

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

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 that section.

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

After creating the display for the Frame, 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:

```
**********************************
*                                *
*    PAGE          FRAME-id      *
*                                *
*    CUG           User Access   *
*    Frame Type          Price   *
*                                *
*          Choice Type_          *
*                                *
*       0             1          *
*       2             3          *
*       4             5          *
*       6             7          *
*       8             9          *
*                                *
* Use cursor keys to change entry*
*  Press return after entering.  *
*                                *
**********************************
```

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 the present Frame is to be displayed for.

1. 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.

2. 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 & THE NETWORK

When run ~~under~~ the Elan® level 2 system, the Carousel becomes a very flexible public information tool. It is possible to have a large number of different machines either ~~using~~ displaying the same Carousel in different locations, or completely different Carousels.

5. TELESOFTWARE FORMATTER

INTRODUCTION

This program enables you to take any file, and translate it into a series of Viewdata frames encoded into C.E.T. (Council for Educational Technology) Telesoftware format.

This format is the one currently accepted by all parties offering Telesoftware on PRESTEL, such as Micronet 800, Viewfax and others. It enables micros, with appropriate Viewdata adaptors and Telesoftware downloading capability, to automatically read the encoded data from the Viewdata frames and reconstitute the original for local use. The Viewdata Terminal software available with this system is an example of one.

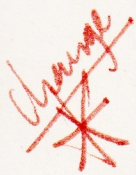
It is likely to become a major means of distributing software as it greatly reduces costs, and enables upgrades to be simply distributed. It can also be used for ASCII or data files as well. Future develoments include a 'Download-and-go' facilitiy which would enable a Viewdata system to provide additional services, such as downloaded programs which enabled the user to interact with constantly updated information.

In the context of this system, it provided for use with the HOST program, so that files can be exchanged between users. Because Viewdata and the CET telesoftware format are machine independent standards, it is quite possible to use the BBC HOST to distribute programs for other machines. As more machines, courtesy of Micronet 800, become provided with Viewdata telesoftware downloading facilities, users may want to make telesoftware for these other machines available via the BBC micros HOST. The trick is to transfer the file from the other machine to the BBC filing system and then use the Telesoftware Formatter to create local Viewdata frames.

In principle, it involves reading the file on the other machine byte by byte and sending it to an output port connected to the BBC, while the BBC reads byte by byte from its input port, and the file saved. As the BBC is well supplied with I/O facilities, the ease of doing this largely depends on the communicativeness of the other machine. If the other machine supports an RS232 port, this is relatively simple. If it has a parallel printer port or a VIA, it can also be done without too much difficulty. It gets progressively more difficult from there.

OUTLINE OF THE WAY TELESOFTWARE DOWNLOADING WORKS

Without going into the coding details, when the downloading routine is entered, it looks for some coding, usually on the bottom line of the frame, which gives it some information about the coded file. If it finds this, it automatically sends a # to call in the next continuation frame, and reads off the encoded data. The last item it reads is a check byte generated when the frame was first formatted. This is compared with a check byte that it itself has generated from the received data. If the two don't match, it assumes that there was a transmission error, and sends a *00 which causes the frame to be resent, and it tries again. If the two do match, it sends a # which causes the next continuation frame to be sent, and it repeats the process until it gets an End Of Data code. At this point it returns control to the user who can save the file and continue.



If the file is a long one, occupying more than 26 frames (a-z), the standard is to go on to a new Page which is created by adding the digit '1' to the end of the current Page name, and starting at the new Page's 'a' Frame. So for example, if a telesoftware file extends from 513a through to 513z and beyond, it will continue on 5131a, 5131b etc. If it were very large, it would then continue on 51311a, 51311b and so on.

This is important to note when starting to format a file. Not only should there not be an existing Page with the same name as the one you are going to format to, there shouldn't be one of the same name with 1 appended.

FORMATTING A FILE

Essentially the program needs to know the name of the file that it has to format, and the title of the Page that it has to give to the telesoftware frames that it will create and save in the database.

It will also need to know the title of a DUMMY Page.
The Dummy Page serves two purposes:

1) It provides the text of the 'a' Frame for the Target Page. Only the bottom line of this Frame contains telesoftware, the rest should provide information to the user about the file that follows, and what to do to download the telesoftware that follows.
2) Its Routeing information is copied to all the succeeding telesoftware frames.

This Frame must be created before the telesoftware formatting starts, but it should not have the same name as the target Page. An example is included on the System disk entitled DUMMYa.

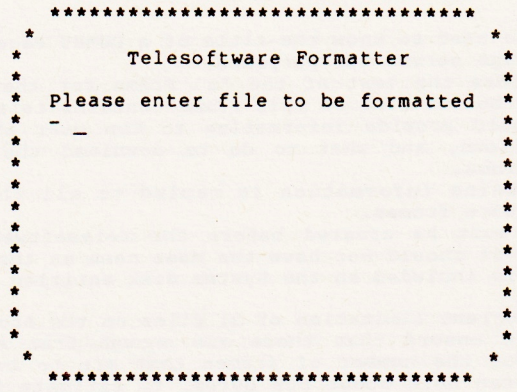
Given the current limitation of 31 files on the Acorn DFS, it is necessary to ensure that there are enough free spaces in the catalogue for the number of frames that are to be created. As each frame can hold about 880 bytes, to estimate the number of frames that will be created, divide the file length by 880, round up, and add 1 for the 'a' frame. It is then advisable to add a fudge factor as the telesoftware formatting adds a liberal sprinkling of control bars.

You start by selecting the TELESOFTWARE FORMATTER option from the system's Main Menu. The first thing that comes up on the screen is:

```
**********************************
*                                *
*  WHAT DRIVE IS THE DATABASE IN *
*  1,2 or 3:_                    *
*                                *
*                                *
*                                *
*                                *
*                                *
*                                *
*                                *
*                                *
*                                *
*                                *
*                                *
*                                *
**********************************
```

The database should be in Drive 1 as this is where the HOST will expect to find it, so make sure the right disk is in, enter 1 and press RETURN.

The screen then clears to:



Enter the name of the file that is to be telesoftware formatted.

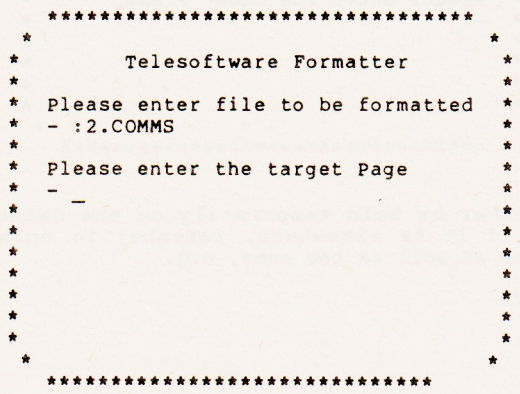
If this is not on the same drive as the database, which it may well not be, you have to give the full file specification. So for example, if the file to be formatted is called 'COMMS' and is stored on disk in Drive 2, it would be necessary to enter

```
:2.COMMS
```

Rather than transfer files already on other disks to either the Viewdata system disk or the database disk, you may well find it convenient to replace the System disk with the disk holding the file. If you do so, make sure that you change it before entering the file name, as the program immediately looks for it, and asks for the name to be re-entered if it cannot find it.

Also remember, if you do, to replace the System disk before leaving the program, as it will try to reboot the System Menu.

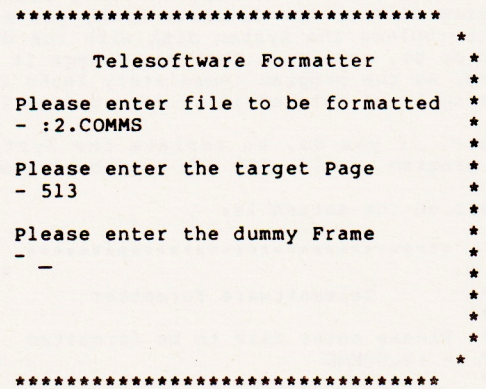
Next to appear on the screen is:



At this point, enter the name of the Page which it is to give to the Frames it is about to create. Do **NOT** enter the Frame-ID as this is supplied by the Formatter as the frames are created.

At this point, it does not check the database disk to see if all the possible frames it might create under that name already exist, so it is up to you to make sure that there are none. If there are any, the program stops rather than overwites them.

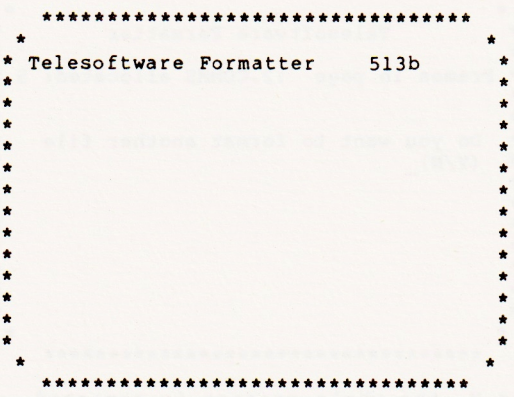
Finally it asks:



This can either be held temporarily on the database disk or elsewhere. If it is elsewhere, remember to enter the Drive specification as well as the name, e.g.

:0.DUMMYa

The screen clears to:



and formatting begins.

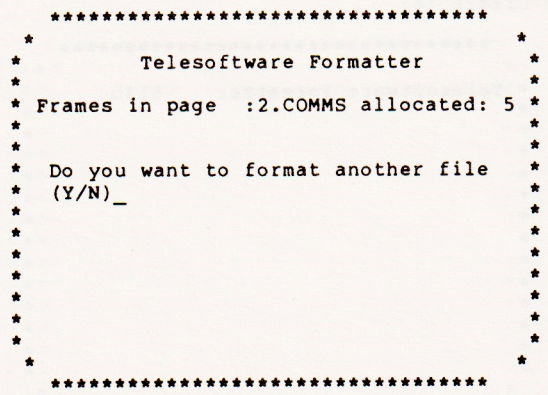
Note that it always begins on Frame 'b'. The 'a' Frame is created last because the 'a' frame, as part of its telesoftware data, has to include the number of frames that are to follow and it won't know how many that is until formatting has finished.

It continues creating and saving frames until it finishes on the 'a' Frame. At this point a message such as:

```
:0.COMMS done. Press RETURN
```

appears at the foot of the screen.

On pressing RETURN, the screen presents:



If you press Y, the whole process is repeated, while if you press N, the System Menu is rebooted.

(Remember if you have taken the Syetem Disk out of Drive Ø, to replace it).

6. SETTING UP THE VIEWDATA TERMINAL

INTRODUCTION

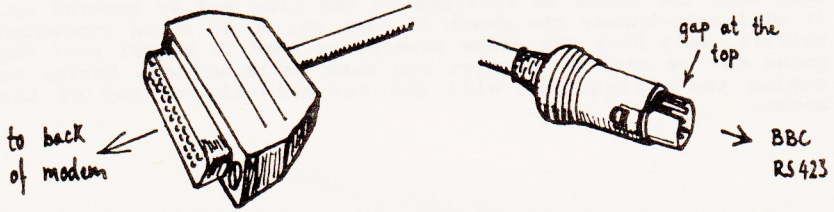
There is a another section describing the use of the Terminal. This part describes how to set it up with the Master Systems modem supplied with the software.

There are two parts to this:

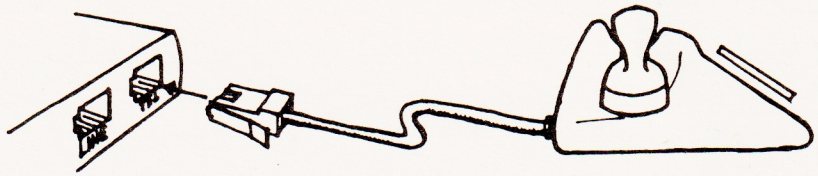
1. Setting up the modem.
2. Setting up the computer.

1. SETTING UP THE MODEM.

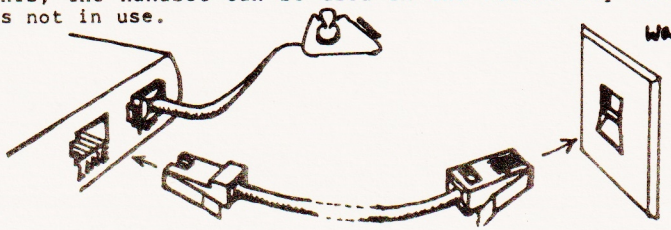
a) Make sure that modem's 25-way D-type socket is connected to the BBC's RS423 'Domino' DIN socket. Using the leads supplied, the gap on the Domino Plug must be at the TOP. If it is put in at the bottom, it WON'T work.



b) You MUST have the telephone handset connected to the modem so that you can dial out by hand and establish the call. The handset must have one of the new flat mini-jack plugs.
Step one is to disconnect the phone from the wall socket, and plug it into the back of the modem in the right hand socket marked TEL.

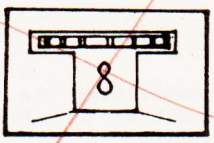


c) Then, make sure the modem is connected from its LINE mini-jack socket to the telephone wall socket. When set up like this, the handset can be used in the normal way when the modem is not in use.

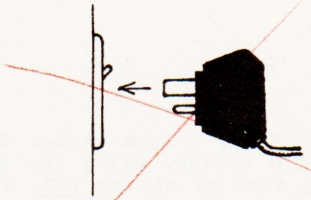


New photos/drgs.

d) Make sure that the modem's MODE switch is set to 8.



e) Make sure that the modem is plugged into the power supply!



N.B. When the modem is attached to the line and is powered up, it will auto-answer the phone if rung up, so to avoid confusing callers, only have the modem powered up when in actual use! The phone can be used to receive and make calls without having to unplug the wiring, and will sit conveniently on top of the modem.

2. SETTING UP THE BBC MICRO

a) Make sure the BBC's RS423 is connected to the modem. (The complement of a) above!)

b) Put the Viewdata disk in Drive 0.

c) Select VIEWDATA TELESOFTWARE TERMINAL option.

d) When it is loaded in, it carries out a machine test routine. Please Wait!

e) If you are going to download frames to disk or load frames from disk, there are two options:

1) Replace the System disk with a formatted data disk. (N.B. you will have to remember to replace the System disk to reboot the menu.)

2) Use the terminal's * command function to change the drive.

To do this, hold down the SHIFT key, and press function key f9. A * appears at the foot of the screen. Complete the command by entering DRIVE 1, and press RETURN. All saves and loads will now be to and from Drive 1.

DISKS SAVING FRAMES / SAVING T/S.
WDB
Blank formatted T/S
or VUDD + Space
or Double disks
:0. 'VUDD'

ESTABLISHING A CALL TO A VIEWDATA SYSTEM.

When the system has finished testing, the footing changes from:

TESTING

to

OFFLINE

Then press function key f1.

The footing shows:

CALL Confirm (RET) or ESCAPE

Press RETURN:

Connect at modem, make call, press RETURN
CALL

Lift the telephone receiver. Check for the dialing tone. (Try pressing the VOICE button on the front of the modem if you don't get one. If that fails, check the connections from phone to modem and from modem to wall socket).

Then dial PRESTEL or Viewdata Host system number manually.

Press RETURN on the BBC micro. The footing should become:

WAITING
CALL

When you hear the high pitch pre-carrier tone, press the DATA button on the front of the modem, and put down the receiver.

You should now be connected, and a welcome/log-on frame should be sent. Follow the log-on procedure for the system you are calling. After this, the database can be searched in the normal way.

LOGGING OFF

To leave a Viewdata system,

Press function key f4

The message

LEAVE Confirm(RET) or ESCAPE

appears. Press RETURN to confirm, and after the logg-off page has been sent, the message

Disconnect at modem and press RETURN

appears.

Press the VOICE button on the modem and switch off the power. REMEMBER you are still connected and paying until you do.

SoftMachinery's Prestel Telesoftware
Release 4.1 22/05/83

USER INTERFACE

The Telesoftware Terminal acts as a full Prestel alpha-keyboard terminal, with additional local functions available via the cursor controls and function keys.

Standard Prestel Functions

The digits 0 through 9, the hash (#) symbol and the star (*) symbol are all that are required to navigate a Prestel database. Response and message frames may be completed by using the terminal's alphanumeric keyboard. Interaction with the Prestel Online Editing System on page *910# is also feasible, display attribute codes being transmitted by means of escape-key sequences.

The cluster of keys on the right-hand side of the keyboard, including the cursor controls and the RETURN, DELETE and COPY keys, are available for single-key entry of common sequences.

The cursor-down (↓) key sends a star (*) to Prestel, normally signifying that a new page number is to be entered and accessed directly - this can be thought of as 'paging down' into the database.

The RETURN key sends a hash (#) to Prestel, signifying the end of page number or other data entry, or the selection of the next frame in order within a page. The hash symbol is also available on the cursor-forward (]) key, the assocation being with 'moving forward' through the frames of a page.

The cursor-backward (←) key sends the sequence star-hash (*#) to Prestel, which returns the previous frame to the display. This function may be repeated up to three times (this limit being a function of the central database system), allowing a limited backtracking capability. The Terminal has a more comprehensive local backtracking facility, as described below.

The cursor-up (↑) key sends the sequence star-zero-hash (*0#) to Prestel, which results in the display of the system's 'Zero Page', which is normally the master index page for the database. This may be thought of as going back up to the topmost node of the database.

The DELETE key sends the sequence star-star (**) to Prestel, which is normally used to cancel or delete an erroneous entry during direct page number access. The action of the cancel sequence is to delete the partly-entered page number from the display. This key may also be used to delete the entire contents of a partially-completed response or message frame. An identical effect is achieved by using the cursor-down (v) key twice in succession.

The SHIFT and DELETE keys in combination provide a local 'reveal/conceal' function. If a frame contains any 'concealed' text, the use of these keys will cause it to appear on the screen. Further use of these keys on the same frame will alternately re-conceal and re-reveal the hidden text.

The COPY key sends the sequence star-zero-zero (*ØØ) to Prestel, which results in a retransmission of the currently-displayed frame. In the case of a priced frame, this retransmission does not incur a further charge. This function is normally used to refresh a frame which has been corrupted by line noise on initial transmission. It may also be used to duplicate the contents of a response or message frame.

The SHIFT and COPY keys in combination send the sequence star-zero-nine (*Ø9) to Prestel, which results in the UPDATING of the currently-displayed frame. This function, which incurs a repeat charge when applied to a priced frame, is normally only used on frames of frequently-updated information, such as flight arrival and departuere times.

Response and Message Frames

When completing response and message frames (and when interacting with the Online Editor), the display cursor is visible, and the cursor control, RETURN and DELETE keys serve their normal editing functions whenever the cursor is ON.

The cursor control keys may be used to move the visible cursor, and hence the point of data entry, around within the confines of the message space. The RETURN key normally returns the cursor to the start of the message space. The DELETE key moves the cursor backwards, deleting previously-entered characters as it moves - because the central Prestel system does not support the 'delete' function, the Terminal generates the sequence cursor-back - space - cursor-back to achieve this effect.
Message frames normally require the hash (#) symbol to be entered to indicate successful completion of the current message space. The star (*) symbol and other sequences are also often required when using or escaping from a message frame. Whenever the cursor is ON, the accessing sequences normally available on the right-hand key cluster are obtainable by pressing the CTRL key at the same time as the appropriate control key.

For example, when the cursor is ON, RETURN transmits a 'carriage return' to Prestel, and CTRL-RETURN transmits a hash (#). The only exception is the COPY key, which performs its normal 'repeat' or 'update' function regardless of the state of the cursor. In the unlikely event that cursor control codes are to be transmitted when the cursor is OFF, the use of the CTRL key in combination with the appropriate control key will again cause the normal function to be inverted. The Terminal uses the state of the cursor and the CTRL key to 'toggle' the actions of the right-hand key cluster.

In-line editor

Frame 'Tagging' and Backtracking

In practice, the hierarchical organisation of a Prestel database facilitates the finding of a particular item of information via a series of index pages, without providing a simple means of backtracking and relocating interesting frames previously displayed. The star-hash (*#) sequence allows reselection of up to three previous frames, which is sufficient to cope with the results of key selection errors, but insufficient for true backtracking.

The Terminal supports a comprehensive backtracking facility by means of the 'Frame Tagging' function. This allows the identity of any displayed frame to be stored in an internal list, for retrieval at a later time. The internal storage space allows up to twenty-five or more frames to be memorised, the actual number depending on the accumulated length of the frame identities - for example frame 258a requires less storage space than 800116357a. The position ('a' to 'z') of a frame within a page does not affect the space required to memorise its identity, although frames towards the end of a page take longer to retrieve than earlier frames, as accessing is necessarily sequential, starting with the 'a' frame of the page.

To 'tag' a frame of interest, press the SHIFT and cursor-down (↓) keys in combination. The frame identity on the top line of the frame will flash, indicating that it has been memorised. If the identity fails to flash, it has been corrupted by line noise, and has been rejected by the Terminal software. If this is the case, press the COPY key to repeat transmission of the frame, and try again.

The tagging (SHIFT - cursor-down) function may be repeated on any number of interesting frames subsequently displayed. Although it is impossible to 'fill' the list of memorised frames, earlier identities will be overwritten by later entries as more frames are tagged. However, the organisation of the tagging functions ensure that early tags are seldom overwritten inadvertantly.
To return to the latest tagged frame, press the SHIFT and cursor-back (←) keys in combination. Allow a second or two for retrieval, especially when returning to a frame with a 'long' identity, or to one which occurs towards the end of its page. When the memorised frame is located, it is displayed with a flashing frame identity, to indicate that it is a tagged frame. Further pressing of the SHIFT - cursor-back keys will result in retrieval of the next earlier tagged frame, and so on. Whenever the Terminal is started-up, Page Zero (0a) is memorised as the first tagged frame, so repeated 'tagging back' will eventually locate Page Zero.

It is also possible to move forward through the list of tagged frames, by pressing the SHIFT and cursor-forward (→) keys in combination. If no frame is retrieved, this signifies that the end of the list of frames has been reached.

Only the ESCAPE, SHIFT ← cursor-back, and SHIFT - cursor-forward keys are active during retrieval of a tagged frame. The ESCAPE key abandons the retrieval, and displays whatever frame was current at the time of pressing the key. Use of the tagging-back and -forward keys during retrieval merely causes the next earlier or later tagged frame to be retrieved instead.

Tagging a new frame, or retrieving a tagged frame, results in that frame being considered as the 'end' of the memorised list, from which point any further newly-tagged frames will be added. Therefore retrieval of a frame in the middle of the list, followed by tagging of a new frame, will cause the loss of the entries following the retrieved frame. Although at first sight this may seem to be a disadvantage, this feature actually reflects the hierarchical structure of a Prestel database, and is found to work well in practice.

This feature also reduces the possibility of inadvertant overwriting of the earliest stored tags, by filling the list with an unnecessarily large number of tags. The earliest tagged frame still in the list can be retrieved at any time by pressing the SHIFT and cursor-up (↑) keys in combination - this will usually retrieve Page Zero.

WARNING - the retrieval of frames via the tagging functions will incur Prestel CHARGES if the tagged frame, or frames earlier in its page, are PRICED. Therefore, avoid the use of the tagging function on priced pages!

EXTENDED TERMINAL FUNCTIONS

The Terminal has a range of extended functions, which are selected via the red fuciuttons at the top of the keyboard.

The available functions can be divided into the following groups:

a) Terminal Help and Escape - key f0

The Help function (key f0) provides an aide-memoire display of the available Terminal key functions, and can be used at any time.

The Exit function (key SHIFT-f0) allows the user to return to the BASIC (or other language) environment, without terminating a remote database session.

b) Prestel Session Functions - keys f1, f2, f3, f4

The Call function (key f1) supervises the process of connection with a remote database, up to the point of successful 'logging-on'.

The Send function (key f2) is used to send the contents of a previously prepared frame currently on display, to the remote database. Only active when the cursor is ON, the Send function is mainly of use to Prestel Information Providers, and to users of private viewdata databases with editing facilities. The function also has some application to the transmission of prepared message frames. <<but gnot yet!>> The Send function ensures, as far as is possible, the secure transmission of frame contents.

The Test function (key f3) is used to dynamically test the state of the connection between the Terminal and a remote database.

The Leave function (key f4) is used to terminate the current remote session via the Prestel 'farewell' Page Ninety. In conjunction with Prestel, the function allows the user to receive notification of any waiting messages on the system, which can be dealt with before actually logging-off, or ignored. When the Terminal is OffLine (not connected), the Leave function provides an exit from the Terminal into the normal machine environment.

The Hold function (key SHIFT-f4) is similar to Leave, except that the currently displayed frame remains on display, while notification of waiting messages is not available.

The Call and Leave functions are necessarily associated with the control of the modem used to connect the Terminal to the remote database. The standard terminal assumes a manually-controlled device (although keyboard commands are also transmitted to the modem where appropriate), and the user is guided through the necessary stages of logging-on and -off. The Terminal software has provision for the integration of alternative modem driver software.

c) Telesoftware functions - key f5

The Download function (key f5) allows the secure downline loading of a computer program or other data file from the remote database and into the Terminal memory and/or filing system. The Terminal is capable of decoding telesoftware encoded on Prestel frames to the standard specified by the Council for Educational Technology (CET), this being the current major telesoftware encoding standard.

The Terminal's downloading software incorporates a variety of security features to eliminate the possibility of corruption of received data.

The SaveFile function is invoked automatically on successful downloading of a telesoftware file, to allow the option of immediately dumping the file from memory and onto the local filing system (FS). If the downloader fills all available memory space before the end of a telesoftware file is reached, the OpenFile function is invoked to allow an 'ongoing' save to the local FS. Therefore, any arbitrarily large file may be downloaded, subject to the capacity of the local FS.

d) Frame Filing Functions - keys f6, f7, f8

The SaveFrame function (key f6) allows the saving onto the local FS of the currently-displayed frame image, for later review offline. Frames may be saved either in 'compact' format, or in a format compatible with the Notting Dale ITEC Local Videotex Database (NDDB) system, allowing frames acquired from a remote database to be incorporated into a private local viewdata system.

The LoadFrame function (key f7) is the converse of SaveFrame, allowing a previously saved frame image to be reviewed offline.

The PrintFrame function (key f8) is used to obtain a hard copy of the current frame image, either 'live' or offline. The function can be interfaced to a variety of printers by means of internal reconfiguration of the Terminal software, or by the addition of specialised printer driver software.

e) User Functions, and Terminal Control - key f9

The OwnFn function (key f9) allows the transmission of a string of characters associated with any of the user-defined function keys f0 through f9. Although these keys are normally interpreted as Terminal controls, use of the OwnFn function (f9) followed by any other function key allows the user-defined string to be output. This facility may be used, for example, to output commonly-used strings of digits such as user identity and password, or a direct page access such as "*258#12".

The *command function (key SHIFT-f9) provides access both to the underlying machine operating system (MOS), and to the internal parameters of the Terminal itself. The function allows the user to input a command string which is then passed first to the Terminal configuring software, and then if not recognised, to the MOS. Typical uses of the function might be to program a user-defined function key (*KEY3,0126356987), to load in a prepared set of function key definitions (*LOAD keys), to reconfigure some aspect of Terminal operation (*FX250,5,3 - change the printer type), or to execute a specialised driver routine (*SofModm - load the SoftModem driver).

SENDING MESSAGES OR FRAMES TO A BBC HOST

If the Viewdata System that you are logged on to is another BBC micro running the HOST program, it is possible to send messages or pre-prepared Frames to it.

After logging on and entering the database proper, this is done by entering:

*910#

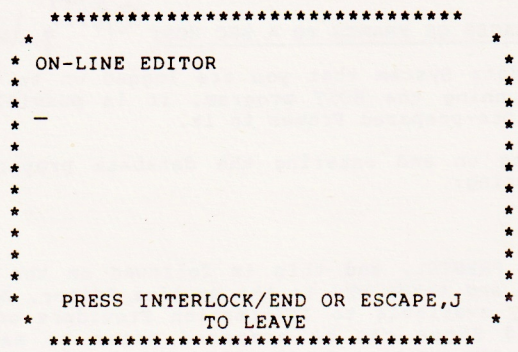
Page 910 on PRESTEL, and this is followed on the BBC, is a 'dummy' Page and takes you to the On-line Editor. On PRESTEL, this is only available to Information Providers on the Duke computer and Pages can be prepared prior to making them available to the public. On the BBC, Frames sent to the HOST go into an IN-TRAY and are only available to the operator of the HOST station. It is then up to the operator to decide whether a Frame is to be incorporated in the public database. It therefore differs from PRESTEL in acting as an electronic mail facility.

When you have entered the BBC micro HOST's Editor the following is displayed:

```
**********************************
*                                *
* ON-LINE EDITOR                 *
*                                *
*                                *
*                                *
*    Please enter:               *
*                                *
*                                *
*    PAGE NAME_       FRAME-ID   *
*                                *
*                                *
*                                *
*                                *
*                                *
*   PRESS INTERLOCK/END OR ESCAPE,J *
*              TO LEAVE          *
**********************************
```

At this point, enter a Page name for the Frame you are about to create, and press RETURN. Next enter a Frame-ID, pressing RETURN again. The HOST checks to see if there happens to be a Frame already with that title. If there is, it will ask you to enter another so that the first doesn't get overwritten.

After entering an acceptable title, the screen clears to:



At this point, there are two methods of creating the Frame, hand entry or automatic sending of a pre-prepared Frame.

HAND ENTERING A FRAME

This is the best method to use for quick messages, and simple Frames. The cursor keys behave in the same way as the offline Editor, with wrap around in all directions. The Return key takes the cursor to the start of the current line. The Delete key deletes the previous character. Apart from these, there are, as with the PRESTEL On-Line Editor, few editing facilities. The full range of Viewdata codes are available, but these at present have to be generated as escape sequences according to the Table at the end of this section.

AUTOMATIC SENDING OF A PRE-PREPARED FRAME

Assuming the pre-prepared Frame is on the currently selected disk (see above), a Frame is loaded by pressing function key f7. You will then be prompted to enter the title of the frame to be loaded. Enter this, including the Frame-ID, and press Return key. This is then loaded into the screen area. Press the function key f1. The cursor will then start travelling across the screen, line by line, transmitting to the HOST. This process takes just over two minutes, as the data is being transmitted at 75 baud or about seven and a half characters per second. It is necessary to press the ESCAPE key to stop the transmission as the cursor wraps around from the end of the screen back up to the top, and starts again.

The message:

Press RETURN to continue, ESCAPE to send

'send' should read 'end', so press ESCAPE a second time to return to the edit mode.

Next, enter the ESCAPE, J sequence to check the transmission, and send the frame by pressing 1 if it has been received correctly.

CHECKING THE TRANSMISSION

A problem with on-line editing is that noise on the line can cause the terminal's cursor to get out of step with the HOST's. If you continue editing, what appears on your screen is no longer in step with what the HOST is storing, resulting in your margins being thrown out. This is because your screen is only a reflection of what is being stored by the HOST which 'bounces back' to you the characters it receives. A transmission error can occur on the way to the HOST or on the way back. Noise on the way back can cause spurious characters to be generated, putting your cursor out of step with the HOST's.

If anything appears on you screen which you DIDN'T type (often a square appears), or the cursor moves without your doing anything, you should **IMMEDIATELY** check the transmission, rather than delteting or trying to change it.

To check the transmission, enter the sequence:

ESCAPE followed by J.

as if to end the edit session. This causes the HOST to resend the Frame as IT thinks it is, and the message:

PRESS: 0→RE-EDIT 1→SEND 2→CANCEL

appears at the foot of the screen.

Pressing 0 puts you back in the Edit mode, also restoring the cursor to where the HOST thinks it is. You can THEN make corrections, if necessary (quite often it is not, showing the error occurred only on the 'bounce back'), and continue editing.

Again it is possible with a bad line, for errors to occur on resend, usually shown by odd characters appearing that seemed ok before. Pressing 0 and repeating the ESCAPE, J sequence will show what are received errors and what are re-transmit errors, as it is very unlikely for the same error to occur twice on re-transmission. So if an error persists, it should be corrected.

If different 'errors' appear in different places each time you re-check the transmission, they are all occurring on the send back to you. It means that the HOST has probably got the frame correctly, but you've got a noisy line! If the line is very noisy, you should ring off and try to get a better line by re-dialling.

If the Frame is too badly corrupted, it may be necessary to start again, in which case, enter 2 instead of 0.

NOTE

Because the standards for communicating with a Viewdata system are to send to it at 75 baud (about 7 characters/second) and to receive from it at 1200 baud (about 120 characters/second), it is much easier for a low level of noise to interfere with the receive channel. In this context it means that errors appearing on your screen may have been sent correctly to the HOST at the slow speed, but been corrupted on the 'bounce back' from the HOST to you at the higher speed on your receive channel.

SENDING THE FRAME
After entering the Frame, it can be sent by entering the sequence:

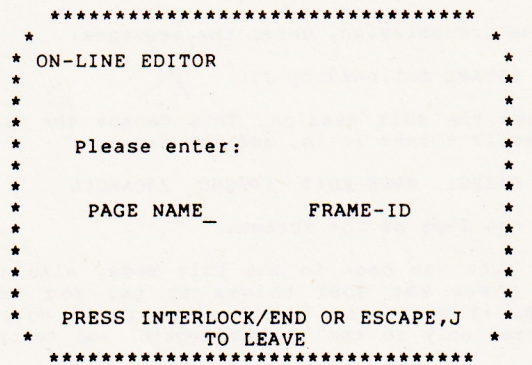
ESCAPE followed by J

This is the equivalent of INTERLOCK/END on a standard Viewdata Editing Keyboard.

The message:

PRESS: Ø-RE-EDIT 1-SEND, 2-CANCEL

appears at the foot of the screen. Pressing 1 causes the Frame to be saved to the Host's IN-TRAY, and the screen clears to:



You now have the option of entering another Frame, in which case enter a new NAME or FRAME-ID, or entering the ESCAPE,J sequence to return to the database. In this case you will be returned to the frame you left when you entered the on-line editor.

CANCELLING THE FRAME
If you change your mind about sending a frame, after entering the ESCAPE,J sequence, press 2. The frame will not be sent and you will be returned to the same screen as above. You can then in the same way, enter a new frame, or return to the database.

DOUBLE HEIGHT
If you go back to a double height line, either with cursor movements or after a re-send, only the top half will be changed. Don't worry. Although it looks wrong, the HOST is receiving it correctly. Check this when you have finished, by entering the ESCAPE,J sequence and you will see it correctly displayed.

USING TERMINAL FOR ON-LINE EDITING TO PRESTEL

If you have I.P. (Information Provider) status, you can also use the Terminal for On-line editing to PRESTEL. Once you have got into the screen editor, the terminal offers the same features as above. PRESTEL does not offer an error checking resend facility, and if you go off the bottom of the screen, it causes the Frame to be immediately saved. This means that the auto Frame send facility stops after end of the frame has been reached.

For futher information about On-line editing to PRESTEL, you are referred to the PRESTEL I.P. manual which all I.P.s should have. This covers topics such as entering the routeing and the other options available such as copying and deleting Frames. If you have sub-I.P. status, you will only be able to use the a)mend option to modify one of the Frames allocated to you.

Appendix

ESCAPE SEQUENCES FOR VIEWDATA CODES

When on-line editing, the special Viewdata codes, such as the colour codes, double height, new background etc., have to be generated by using an ESCAPE sequence, as presented in this table. It is worth keeping a copy of this by you while on-line editing.

To enter them, press the ESCAPE key, followed by the appropriate character.

All LETTERS following the ESCAPE key MUST be in UPPER CASE. As text entry is often done in lower case, it is worth developing the habit of entering the sequence: ESCAPE, SHIFT+letter.

	TEXT		GRAPHIC
ESCAPE, A	RED	ESCAPE, Q	RED
ESCAPE, B	GREEN	ESCAPE, R	GREEN
ESCAPE, C	YELLOW	ESCAPE, S	YELLOW
ESCAPE, D	BLUE	ESCAPE, T	BLUE
ESCAPE, E	MAGENTA	ESCAPE, U	MAGENTA
ESCAPE, F	CYAN	ESCAPE, V	CYAN
ESCAPE, G	WHITE	ESCAPE, W	WHITE
ESCAPE, H	STEADY	ESCAPE, X	CONCEAL DISPLAY
ESCAPE, I	FLASH	ESCAPE, Y	CONTIGUOUS GRAPHICS
ESCAPE, J	INTERLOCK-END	ESCAPE, Z	SEPARATED GRAPHICS
ESCAPE, K	INTERLOCK-CLEAR	ESCAPE, \	BLACK BACKGROUND
ESCAPE, L	NORMAL HEIGHT	ESCAPE,]	NEW BACKGROUND
ESCAPE, M	DOUBLE HEIGHT	ESCAPE, ^	HOLD GRAPHICS
		ESCAPE, _	RELEASE GRAPHICS

NOTES:

On the Viewdata/Teletext mode screen, some keyboard characters are displayed differently. It may be worth noting the relevent ones:

KEY PRESSED	DISPLAYED CHARACTER
\	half
]	forward arrow
^	up arrow
_	large hyphen

These are NOT entered using the SHIFT key in an ESCAPE sequence.

SoftMachinery's Prestel Telesoftware Terminal
Release 4.1 22/05/83

TECHNICAL DETAILS

Memory Usage

The Terminal makes the following use of the BBC Micro's memory map:

```
 PAGE..&5A70  -  Telesoftware downloading buffer
&5A70..&5C30  -  Variables and other buffer space
&5C30..&5C33  -  Jump to actual start address of code at &6EC0
&5C33..&5FC0  -  'Constants'
&5FC0..&7B98  -  Machine code program
&7B98..&7C00  -  NDDB frame header area
&7C00..&7FC0  -  Mode 7 viewdata display
```

The PCODE file occupies memory from &5C30..&7FC0, the program's 'front page' being loaded directly into the display memory area.

Reconfiguring the Terminal

All reconfiguration of the Terminal is via *FX commands entered at the Terminal keyboard by means of the *command function (key SHIFT-f9). The same facilities are available to external programs which make use of the Terminal, either via the *FX command, or by calls to the OSBYTE routine at &FFF4.

The same *FX or OSBYTE call is used for all reconfiguration functions - nominally this is *FX250 (LDA#&FA:LDX..:LDY..:JSR OSBYTE), although this can be changed if required. The following descriptions will refer to *FX250.

The second parameter of the *FX command (LDX..) controls the particular Terminal attribute to be altered - this is in the range 0..72.

The third parameter of the *FX command (LDY...) specifies the new value to which the attribute is to be set.

When accessed by a machine code program, the OSBYTE call returns the first parameter unchanged in A, the second parameter unchanged in X, and the original value which has been overwritten is returned in Y. For non-destructive reading of Terminal attributes, 128 is added to the nominal X parameter value, and the call returns X-128 in X, and the value of the attribute is returned in Y.

A *FX250 command or OSBYTE(&FA) call whose second parameter is outside the range 0..72 or 128..200 are passed to the MOS, which may or may not be able to make use of them.

The following commands are available for reconfiguration of the Terminal:

***FX250,0,y** - Change the OSBYTE trap value

This command alters the OSBYTE first parameter value which is trapped by the Terminal. For example, *FX250,0,0 would replace the trap value with 0, so that all sISequent reconfiguration calls would have to of the form *FX0,x,y. The default is *FX250,0,250.

***FX250,1,y** - Select filing system type

If y=0, the FS is assumed to be *TAPE or *TAPE3. If y=1, the FS is assumed to be *DISK, *NET, or another filing system which supports the OSGBPB block filing routine. Setting this attribute when using a high-order FS will considerably speed-up the action of the OpenFile function. The default is *FX250,1,0

***FX250,2,y** - Select modem type

If y=o, a manually or keyboard-controlled modem is assumed, and all modem functions are handled internally by the Terminal. If y=1, and the vector MODEMVEC at &5C2C is altered to point to a suitable modem driver, then modem functions will be handled externally. Two modem functions are currently implemented: 'connect and dial', indicated by A=1, and 'disconnect', indicated by A=0. Further functions will be required for extensions of the Terminal to handle auto-answering modems. The default is *FX250,2,0.

***FX250,3,y** - Select RS423 Receive Rate
***FX250,4,y** - Select RS423 Transmit Rate

These commands allow the Terminal to be configured for use with modems of non-standard receive and transmit rates. The y value represents a standard BBC Micro RS423 rate code. The defaults are *FX250,3,4 and *FX250,4,1 (1200baud receive, 75baud transmit).

***FX250,5,y - Select the Printer Type**

A value for y to suit the printer in use is calculated by adding four numbers together as follows, giving a value between 0 and 15:

+0 if Prestel block graphics are NOT to be sent to the printer, but are to be replaced with a standard replacement character, or
+1 if block graphic characters are to be sent to the printer.

+0 if LineFeed codes (10, &0A) are to be sent to the printer after each CarriageReturn code (13, &0D), or
+2 if LineFeeds are to be suppresed.

+0 if Prestel display attribute codes (128..159, &80..&9F) are NOT to be sent to the printer, but replaced by spaces (32, &20), or
+4 if attribute codes are to be sent to the printer.

+0 if all trailing spaces are to be output to the printer, or
+8 if trailing spaces are to be suppressed.

The default is *FX250,5,2

***FX250,6,y - Select the Printer Graphics Replacement Character**

If +1 was NOT added to the y value for *FX250,5,y, then this command specifies the character used to replace all graphics codes on output to the printer. The default is *FX250,6,32 (replace graphics with spaces).

***FX250,7,y - Select the Printer Lower Graphics Set Base Code**
***FX250,8,y - Select the Printer Upper Graphics Set Base Code**

If +1 was added to the y value for *FX250,5,y , then these two commands specify the printer's base codes for the two ranges of graphics characters, represented by the Prestel graphics codes 32, &20 and 96, &60. The defaults are *FX250,7,0 and *FX250,8,0, as the default printer type s 'no graphics'.

***FX250,9,y - Select the Telesoftware Downloader Type**

This command is reserved for future developments. The default is *FX250,9,1.

***FX250,10,y - Select the Maximum Number of Download Retries**

This command determines the number of times retransmission of a 'bad' telesoftware block is requested, before the software abandons the download. The default is *FX250,10,3.

***FX250,11,y - Select the Upper Limit of the Telesoftware Buffer**

This command may be used to limit the memory space available to the downloader by selecting a lower 'page' number than the default base of the terminal variables area at page &5A. The default is therefore *FX250,11,90.

***FX250,12,y - Select the Number of Post-Frame Lines**

This command allows control of the Print routine's paper usage. Each frame is printed as one blank line, followed by 23 line of frame contents, followed by a number of blank lines specified by this command. The default is *FX250,12,9 , giving 33 lines per frame, 2 frames per standard 66-line page.

***FX250,13,y - Select the Frame File Type**

If y=0, frames will be saved in 'compact' format, requiring 920 bytes.
If y=1, frames will be saved in the NDDB format, requiring 1024 bytes. The extra space in the NDDB format is required for local database frame details and routeing information. The default is *FX250,13,1.

***FX250,14,y - Select Maximum Filename Length**

This command specifys the maximum number of characters allowed in a Telesoftware- or Frame-file name. This is normally set to the maximum allowed by the local FS. The default is *FX250,14,7. The Terminal software modifies frame identities when generating default frame-file names to take account of this parameter, and attempts to generate a unique name whenever a frame identity is truncated.

*FX250,15,y - Select Communications Parity Type

This command allows the 'parity' used by the system with which the Terminal is communicating. If y=0, no parity checks are applied, and no parity bit is set on communications output from the Terminal. If y=1, odd parity is assumed. If y=2, even parity is assumed. As Prestel uses even parity, the default is *FX250,15,2.

*FX250,16..
..47,y - Select Printer Output Conversions

This set of 32 commands allow up to 16 specific character code conversions to be specified for sending frame contents to the printer. If the calls are considered as sixteen pairs, then the first value of the pair is the character code received from Prestel which is to be converted, and the second is the corresponding code to be output to the printer. For example, to convert the Prestel code 96, &60 to the printer code 35, &23, the following pair of commands might be used:
*FX250,16,96
*FX250,17,35
or, equally
*FX250,28,96
*FX250,29,35
Any pair whose first value is null (0, &00) is ignored. The defaults are *FX250,16..47,0 , that is no conversions are performed.

*FX250,48,y - Select Transmit Delay (LSB)
*FX250,49,y - Select Transmit Delay (MSB)

This pair of commands specify a 16-bit value in centi-seconds which determines the delay to be maintained between bytes being output to Prestel from NTerminal. Some modems require that characters are sent no faster than at a specific rate, others require no such delay. The default is *FX250,48,15 , *FX250,49,0 , giving a delay of 15cS, 150mS.

*FX250,50,y - Select Receive Delay (LSB)
*FX250,51,y - Select Receive Delay (MSB)

This pair of commands specify a 16-bit value in cS which is the MAXIMUM expected delay between successive characters received by the Terminal. The defaults are *FX250,50,15 , *FX250,51,0 , giving a maximum expected delay of 1cS, 150mS between successive bytes received. For the significance of this parameter, see the next pair of commands.

*FX250,52,y - Select Response Delay (LSB)
*FX250,53,y - Select Response Delay (MSB)

This pair of commands specify a 16-bit value in cS, which is the MAXIMUM delay expected between the transmission of a byte to Prestel, and the reception of one or more bytes in response (such as an echo character, or a new frame of data). The defaults are *FX250,52,100 , *FX250,53,0 , giving a maximum expected response delay of 100cS, 1S.

A combination of the Receive delay (see *FX250,50..51 above) AND the Response delay is used by the Terminal software to detect so-called 'frame timeouts'. Because Prestel does not send a special 'end-of-frame' character, the only way to detect that transmission of a frame has ended is by such timing considerations. A 'frame timeout' is said to have occurred if the Receive delay has expired since the last character was received from Prestel, AND the Response delay has expired since the last character was sent to Prestel. Frame timeouts are used extensively throughout the Terminal, and are of special significance to the Telesoftware downloader. The default timings have been tuned to the standard Prestel system, to combine greatest processing speed with smallest error rate. If the Terminal is used in communications with other viewdata systems, these timings may have to be adjusted.

*FX250,54,y - Select delay 4 (LSB)
*FX250,55,y - Select delay 4 (MSB)
*FX250,56,y - Select delay 5 (LSB)
*FX250,57,y - Select delay 5 (MSB)
*FX250,58,y - Select delay 6 (LSB)
*FX250,59,y - Select delay 6 (MSB)
*FX250,60,y - Select delay 7 (LSB)
*FX250,61,y - Select delay 7 (MSB)

This group of commands is intended for use by programs which utilise parts of the Terminal software, and allow various timing delays to be set. The Terminal maintains a set of eight independent timers, 0 through 7. Timer 0 is used for detecting frame timeouts (by combining Timers 2 and 3), Timer 1 is used for Transmit delays, Timer 2 is used for Receive delays, Timer 3 is used for Response delays (see *FX250,48..53 above). Timers 0 through 3 are therefore dedicated to special purposes. Timer 4 is a general purpose timer, which is occasionally used by the Terminal software (by the Call and OwnFn functions), but which is otherwise available for use by external software. Timers 5 through 7 are NOT used by the Terminal, and may be freely used by external software. Details of setting and testing all timers are given elsewhere.

*FX250,62,y - Select Call Timeout (LSB)
*FX250,63,y - Select Call Timeout (MSB)

This pair of commands specify a 16-bit value in cS which determines the length of time the terminal is prepared to wait for a reply to the Call function before a 'No reply received' soft event (BRK) occurs. The defaults are *FX250,62,0 , *FX250,63,36 , giving a timeout of 9216cS, approximately 90S. This corresponds to the timeout incorporated into many autodialling modems. This timeout is used via Timer 4.

*FX250,64,y - Select OwnFn Timeout (LSB)
*FX250,65,y - Select OwnFn Timeout (MSB)

This pair of comands specify a 16-bit value in cS which determines the length of time the OwnFn function is active. Between pressing the OwnFn button (key f9) and the expiry of this timeout, the function keys revert to their normal activity of generating user-defined strings of characters. The associated timer (Timer 4) is reset whenever any key is pressed, so it is possible to keep the OwnFn function active indefinitely. The defaults are *FX250,64,0 , *FX250,65,2 , giving a timeout after 512cS, approximately 5S.

*FX250,66,y - Select the Autosave Option

This command allows options to be set which automatically save a successfully downloaded telesoftware file. If y=1, then the user will not be invited to confirm or escape from, or change the filename for, the SaveFile function - it will be executed automatically. If y=2, then the OpenFile function, if invoked by shortage of downloading buffer space, will be executed automatically. If y=3, then either SaveFile or OpenFile will be executed automatically after/during telesoftware downloading. These options are intended to allow the Terminal software to be used within automated processes, but may also be useful to the general user. The default is *FX250,66,0.

*FX250,67,y - Select the Download Error Option

This command allows the error handling of the telesoftware downloader to be controlled. If y=0, then failure to secure a legible block after the maximum number of retries (see *FX250,10 above) will result in the user being requested to confirm or escape from the download. Similarly, detection of the escape key during downloading will request confirmation of or escape from the function. If y=1, either error will result in a soft event (BRK), and the download will be abandoned. Again, this option is intended to facilitate the use of the Terminal within automated processes. The default is *FX250,67,0.

*FX250,68,y - Specify Base of Help Buffer (LSB)
*FX250,69,y - Specify Base of Help Buffer (MSB)

This pair of commands are intended for use by external software wishing to make use of the Terminal's Help function. The Help buffer is a 240-byte area, into and out of which six lines of 'help' information, and rows 18 through 23 of the display, are swapped. Redirecting the address of the base of the Help buffer by these commands allows a different set of 'help' information to be displayed.

*FX250,70,y - Specify the Base of the Message List (LSB)
*FX250,71,y - Specify the Base of the Message List (MSB)

This pair of commands are intended for use by external software wishing to make use of the Terminal's message display routines. The message list is an arbitrarily long series of individual messages, delimited by nulls (0, &00). Redirecting the address of the base of the message list allows a different set of messages to be displayed.

*FX250,72,y - Set PAGE

This command allows the user to alter the BBC Micro's pseudo-variable PAGE, which specifies the (MSB of) the lowwest address used for program storage. The telesoftware downloader also uses PAGE as the bottom limit of the downloading buffer space. The default value is read from the prevailing value of PAGE at the time of starting-up the Terminal.

USING STANDARD *FX COMMANDS

As well as the *FX250,x,y commands listed above, all other standard *FX commands are available at the Terminal via the *command function (key SHIFT-f9). However, the following points should be borne in mind:

*FX2 should not be used - the Terminal initially uses *FX2,2 to read from the keyboard and enable the RS423 input, and expects these conditions to be maintained.

*FX3 can be used, but should be restored to *FX3,0.

*FX4 should NOT be used.

*FX5 may be used to select a parallel printer, or the user print routine. A serial printer should not be selected, unless printing is being done offline, and the modem's RS423 connection is replaced by the printer.

*FX7 and *FX8 should not be used - use *FX250,3,Rxrate and *FX250,4,Txrate instead.

*FX12 should not be used - the Terminal relates key repeat rate to the Transmit delay (Timer 1), so use *FX250,48/49 instead.

*FX225/226/227/228 should NOT be used - the Terminal assumes the function key code ranges to be as set on starting-up.

*FX229 should not be used - the escape-key action is disabled while the Terminal is active, and should not be re-enabled.

---

7. SETTING UP THE HOST

INTRODUCTION

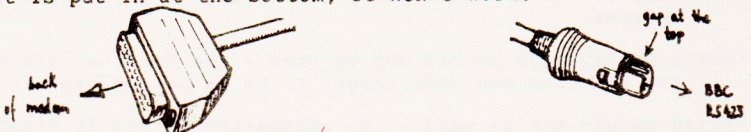
The HOST program allows a locally created Viewdata base to be made available to outside callers who have standard Viewdata terminals. It also allows those with full keyboards terminals to compose and post messages or full Frames to an IN-TRAY. Currently, the database and IN-TRAY are located on opposite sides of the same double sided disk, placed in the second drive. On the Acorn Disk Filing System, these are referred to as Drive 1 and Drive 3 respectively. As the system operates automatically after it has been set up, the rest of this section covers the setting up procedure.

There are two parts to this:

1. Setting up the modem.
2. Setting up the computer.

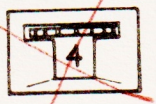
1. SETTING UP THE MODEM.

a) Make sure that modem's 25-way D-type socket is connected to the BBC's RS423 'Domino' DIN socket. Using the leads supplied, the gap on the Domino Plug must be at the TOP. If it is put in at the bottom, it WON'T work.

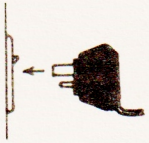


b) Make sure the modem is connected from its LINE mini-jack socket to the telephone socket.

c) Make sure that the modem's MODE switch is set to 4.



d) Make sure that the modem is plugged into the power supply!



2. SETTING UP THE BBC MICRO

a) Make sure the BBC's RS 423 is connected to the modem. (The complement of a) above!)

b) Put the Viewdata SYSTEM disk in Drive Ø. Put the Viewdata DATABASE disk in Drive 1. As well as a database, starting at Frame Øa, the following frames MUST also be on the database disk:

HALLOa BYEa MESSAGe

The HALLOa frame is sent out at Log-On, and requires the name and phone number fields as currently set up, although the rest of the frame can be customised using the Editor. The Message frame is sent out between logging on and the Øa frame being sent. It can be used to send out general messages to all callers, and can be changed using the Editor, as can the BYEa frame which is sent out at Log-off.

c) Select the ON-LINE HOST SYSTEM option. The following HOST menu is called up:

```
Initialise the INTRAY
Set up the HOST
Review callers
Display the INTRAY catalogue
Return to Main Menu
```

The HOST program records callers as they log in, and there are two files files, CALLERS and INFRMS that have to be initialised ready to receive this data. So first, select:

Initialise the INTRAY

After a few moments of disk whirring, you are returned to the menu.

d) Next, select the option:

Set up the HOST

When the program has booted in, you will be asked to check that the modem has been properly connected, and to then press RETURN.

Next, you will be prompted to enter the time in the format:

hour min secs

hhmmss

After entering the time and pressing RETURN, the disks should load in HALLOa and BYEa frames and the message:

WAITING FOR CALLER

should be displayed.

From this point the system will answer the phone automatically, sending out and receiving frames, and can be left unattended.

STOPPING THE HOST

To stop the Host program, press the BREAK key. The following messages appears on the screen:

DO YOU WANT TO RECALL THE MAIN MENU (Y/N)

Enter Y if you want to recall the HOST menu.

If you wish to see the callers and frames they've sent, select the option:

Review Callers

READING FRAMES RECEIVED

To see frames sent to you, retrun to the manin system menu and select the Editor. When prompted for the database drive, enter 3, and press RETURN. When in the Editor, the first step is to select the DISPLAY CATALOGUE option.

The frames displayed can be loaded in and read, transferred to another disk etc. using the various editor facilities.

CLEARING THE INTRAY

It is necessary to regularly delete frames from the INTRAY surface (Drive 3), so that room can be made for further frames to be received. Again this, is best done from within the Editor, using the DELETE PAGE option.

8. USER GUIDE FOR THE ITeC UPLOADER

INTRODUCTION

This uploader takes frames that constitute a local database and places the frames into a defined position on the Prestel database.

PREPARING A DATABASE

If you have an area on Prestel, it is advisable, if possible, to keep a copy of this section as a local database. All Prestel Information Providers have a 3 digit prefix number, and ITeCS coming under the Consultancy Unit's 482 node have an additional 3 digit sub-node e.g. 482314. ALL pages stemming from the node or sub-node must be prefixed by those digits. The ITeC Consultancy Unit cannot put any pages up starting with the numbers 483 or 481. Indeed, there are checks on Prestel which prevent this from happening. As far as the local copy of the ITeC database held at the Consultancy Unit, is concerned the first three digits are redundant. The local copy therefore drops the first three digits and these are added dynamically at run time by the Bulk Uploader Program.

If you are keeping a copy of a database that starts with a six digit sub-node, you have control of this page and all pages that are prefixed by this six digit sub-node up to the number of frames you have been allocated. Your local database copy of frames should drop the six digit sub-node prefix, and allow the Bulk Uploader to add these. This is particularly important in the case of ITeCS as below the 3 digit node level Prestel does no checking and it is quite possible to overwrite pages belonging to other ITeCS accidentally, if an attempt is made to upload pages beginning with another six digit sub-node number.

The Bulk Uploader also adds its set prefix number to all the routeing belonging to the Frame it is updating as well as to its title. This allows you to have an integrated database locally, with all routeing checked there, and then transferred to the Prestel database but integrally off-set.

There are two problems with this system. The first is that the six digit node itself has to be uploaded separately, using at least a FIVE digit sub-node, with all its routeing modified accordingly. As your main entry page is usually fairly stable, this is not a major problem. The second problem concerns the routeing of frames to pages outside of the allocated node or sub-node. As the Bulk Update program adds the prefix digits to the routeing as well, routeings to other areas have to be changed subsequently by using the Viewdata Terminal software, and using the On-Line update facilities on the Prestel Duke computer and changing the routeing by hand. This would be necessary if you wanted to route to other parts of the ITeC database, or indeed other parts of the Prestel database.

ENTERING THE UPLOAD PAGES

There are three programs associated with the uploader. They are the data entry program, a program that attempts to upload the requested frames to Prestel, and a data file which is filled by the first program and contains all the parameters needed for the second program to run. This parameter file also stores the results of all the attempts to upload each frame as well as more general test and monitoring details.

The frame upload data entry program is called from the local videotex database main menu. It has another menu and each option on its menu is selected by pressing the key on the keyboard displayed next to the option. All other data is entered into the program in a normal computer manner. All entries are typed in and finished with a carriage return.

This program allows for the standard parameters to be retained in the parameter file and only the file names of the new frames need be added. These standard parameters are:

the systel number showing that the user has an account with Prestel
and
the user password.

As most users of a tool like this will be uploading to the same root page most of the time, this root page can also be retained in the parameter file.

As mentioned before, the parameter file also stores the results of an upload and the data entry program is used to report these results. When the data entry program is run a display of the results is something like this:

```
Last upload  24/06/83 at 00:20:40
**FAILED 01 Some programs not updated

IP Systel no: 019992047
   Password : KOSI
Root page : 3515
Option    : 4

Page/frame                  filename
2a                          0a
 --UPDATED
21a                         DUMMYa
 --UPDATED
22a                         unetie
 --UPDATED
23a                         23a
 **FAILED NF File does not exist
24a                         24a
 **FAILED NF File does not exist
24b                         24b
 **FAILED NF File does not exist
25a                         25a
 **FAILED NF File does not exist
25a                         25z
 **FAILED NF File does not exist
```

The database to be uploaded has to be defined in two ways for the data entry program. The first way is the position each frame will have on Prestel. The second way is the local filename, which need not have any association whatsoever with the pages on Prestel. However the notes in section 1 on preparing a database should be borne in mind. The problem arises when named pages rather than numeric pages are referred to. The frame uploader cannot allow this to go to Prestel so any name references for options are removed completely.

The systelno and password are the standard Prestel IP variables and will be allocated by Prestel. The root page is the area of the Prestel database that the user wishes to concentrate on. This may be any number and will be the lowest page number that can be uploaded to Prestel.

For each frame to be uploaded there are three parameters to be entered. The first, which asks for a frameletter defines the existence of a frame to upload, if carriage return is typed for the frameletter then the program assumes that it has the complete list of frames to upload. The next parameter asked for is the page number. This page is an offset from the root page and is simply appended to the root page number given earlier to the data entry program. In answer to this request the user can type simply carriage return and the resultant page number will be that of the root page.

The final request for a frame upload is the local filename. The system attempts to create the filename from the page and frameletter and it is displayed for your pleasure (sorry translation error). If this is the correct name of the local file then you may type carriage return and that will be used. If another name refers to the frame you want then type that in and then return.

When all of the frames you want to upload have been entered into the program, type return at the next frameletter request and the list is finished. If you request a display of these parameters before they are uploaded they will be displayed like this.

```
IP Systel no: 019992047
   Password : KOSI
Root page : 3515
Option    : 4

Page/frame                filename
23a                       23a
24a                       24a
24b                       24b
25a                       25a
25a                       24a
24b                       24b
25a                       25a
25a                       25z
```

Option

The option is mainly for diagnostic purposes during development and need never be altered. The system works no faster or slower with any sort of monitoring, when data is being sent to Prestel the slowest part of the whole equipment is the modem, and everything else waits for it.

When the user is happy about the list of frames to be uploaded the next program may be called. This is done by pressing key 9 to start the upload.

USING THE MODEM

The computer communicates to Prestel via a modem. This has to be of a certain sort and is usually supplied by British telecom on a rental basis. For the technically minded the Prestel bulk update will work with either half or full duplex 1200 baud modems.

MODEM + appendix

FRAME FORMAT appendix

APPENDIX - REQUIREMENTS FOR RUNNING THE SYSTEM

MINIMUM REQUIREMENTS FOR RUNNING THE SYSTEM

The following are required:

a) BBC micro Model B, + O.S. 1.0 or later, +Disk Filing System fitted.

b) Double 80 track disk drives.

c) Modem/s capable of operating at:

Rx	Tx	Function
1200	75	Terminal Mode
75	1200	Host Mode
1200	1200 (half/duplex)	Bulk update

d) The Viewdata System Software.

THE MODEM

A single modem meeting these requirements is the Master Systems V21/23 auto-answer modem.

The modem offers the following modes:

Rx	Tx	Function
1200	75	Terminal Mode
75	1200	Host Mode
1200	1200 (half/duplex)	Bulk update
+		
300	300 (full duplex)	

The 1200/1200 and 300/300 can be in the originate or answer modes.

These modes are switch selectable from the back.

(In addition there is a link that can be made inside which converts it to the American Bell telephone standards when operating at 300/300 or 1200/1200.)

The modem is auto-answer which means that in conjunction with the Host program in the Viewdata suite, incoming calls are automatically dealt with, the system resetting itself after calls.

As supplied, the modem has to be used in conjunction with a phone that has a new flat 'mini jack' phone socket connecter that B.T. is currently installing.

WARNING

If all currently installed phones have published numbers, i.e. members of the public are likely to call on it, it would be advisable to have a new line installed to act principally as a data line. When called, the auto-answer modem responds with a carrier tone whistle (like PRESTEL's) and people not expecting it will sometimes report a fault to B.T. It can also cause varying degrees of aggravation if they were wanting to TALK to you!

SOFTWARE

The software is as outlined in ITEC Equipment Update 2.24 (Please ask for this if you have not received it or need another copy.)

It comprises:

Viewdata Editor
Local Search (emulating PRESTEL in use)
Carousel (Automatic display of frames)
Telesoftware Formatter (Files to CET telesoftware format frames)
Viewdata Terminal and Telesoftware Downloader
Viewdata Host
Bulk Update to Prestel

LEADS

RS232 BBC to modem lead.
Modem to phone socket lead.