DESKTOP **E**NVIRONMENT **S**YSTEM
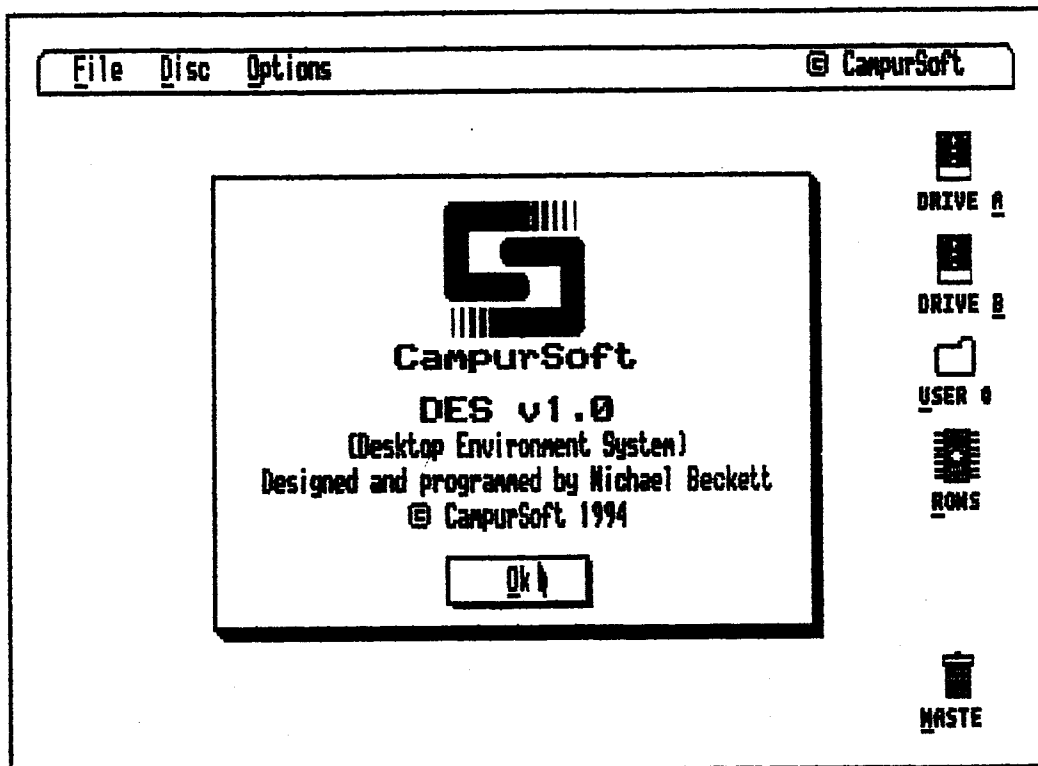
THE ADVANCED GRAPHICAL USER INTERFACE FOR ALL AMSTRAD CPC COMPUTERS WITH DISC DRIVE.

REFERENCE MANUAL

File Disc Options	© CampurSoft

DRIVE A

DRIVE B

USER 0

ROMS

CampurSoft

DES v1.0
(Desktop Environment System)
Designed and programmed by Michael Beckett
© CampurSoft 1994

Ok

WASTE

FOR: 6128 PLUS

CPC 6128

CPC 664

CPC 464 PLUS AND DISC DRIVE

CPC 464 AND DISC DRIVE

DESKTOP ENVIRONMENT SYSTEM USER MANUAL

CONTENTS

DES v1.0

(Desktop Environment System)

A Graphical User Interface on ROM for the Amstrad CPC

(c) CampurSoft 1994

Designed & Programmed by Michael Beckett

1: INTRODUCTION

Congratulations. You have purchased DES, the most comprehensive and easy to use Graphical User Interface ever available for the Amstrad CPC range of home computers.

The most exciting feature of DES is that it automatically takes over control of the computer on power up, so no loading from disc or typing of commands is necessary. Simply turn on your computer, and instantly you have a powerful set of disc utilities at your fingertips.

DES incorporates many of the features and concepts used in Graphical User Interfaces on more powerful and expensive computers, in a bid to make using your CPC easier. So now, for the first time, you can really give your CPC a facelift.

Compatibility

DES will work on any disc-based CPC or CPC+, with a Rombox. It doesn't require 128k RAM. It is compatible with the AMX/DATEL mice and is also compatible with ROMDOS large-capacity discs.
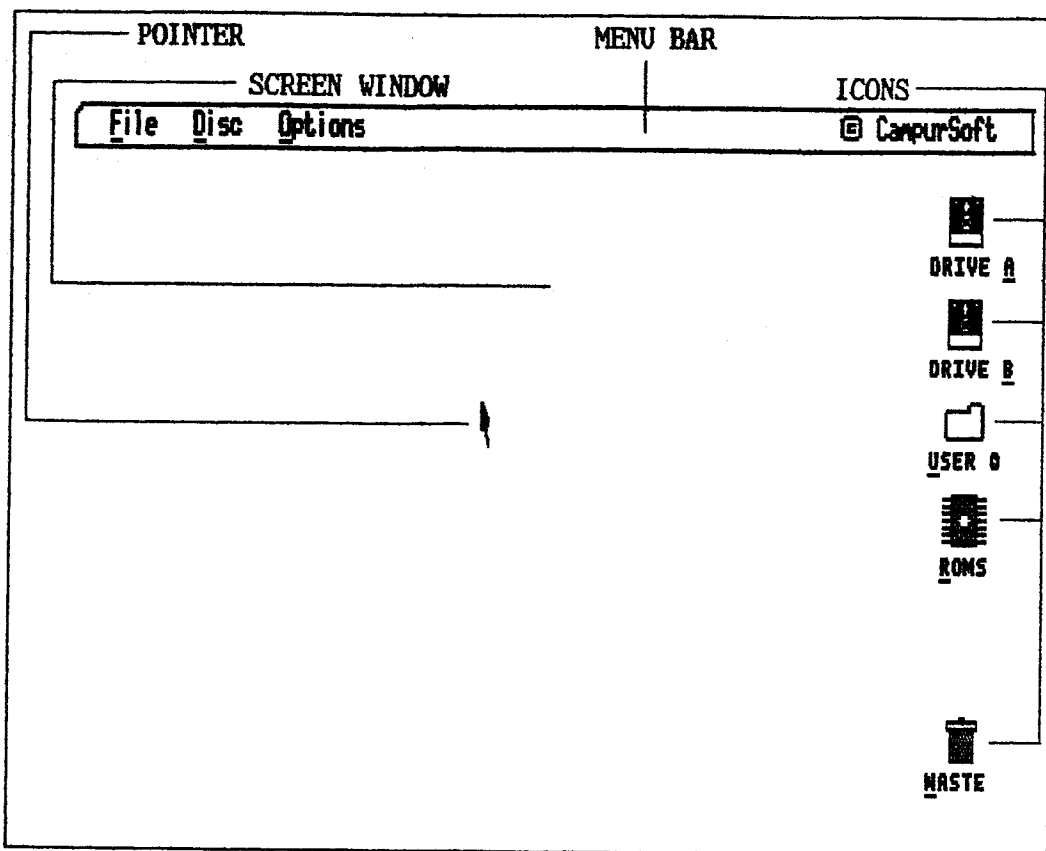
Background

In the mid seventies, a team of American computer scientists working for Xerox at Palo Alto noted that many non-technical computer users found using the keyboard to communicate with their computer systems, difficult and laborious. This was mainly because users had difficulty with the concepts used in computing, as many of these are far removed from real-world processes.

In 1978 the Xerox team arrived at a solution to this problem - they designed an alternative control system for a computer. In this new system, the computer screen represented a traditional desktop. On this desktop were files and documents, represented by icons - little pictures of real-world files and documents. These files could be manipulated using a pointer, just like you would use your hand on a real desk, and, if you wanted to get rid of a file, you simply moved it into the on-screen waste basket. Thus was the GUI (Graphical User Interface) born.

Since then, GUIs have rapidly gained popularity, with international computer corporations battling to win customers over to their system. Most modern computers operate such a system. However, due to the massive amounts of memory required, and the need for heavyweight processing power, 8-bit computers have largely missed out on this revolution - until now!

2: DES CONCEPTS

DES uses many of the standard GUI concepts, which form the WIMP environment (WIMP is an acronym for "Windows, Icons, Menus, Pointer"). Operations in a GUI are controlled by moving a pointer around the screen, & using it to select certain objects.

```
┌──── POINTER                    MENU BAR              ┐
│     ┌────── SCREEN WINDOW          │     ICONS ──────
│   ┌─┴─────────────────────────────┼─────────────────┐
│   │ File  Disc  Options           │      ⊞ CarpurSoft│
│   ├───────────────────────────────┴──────────────────┤
│   │                                            ▓──────
│   │                                          DRIVE A
│   │                                            ▓──────
│   │                                          DRIVE B
│   │                                            ▱──────
│   │                    ▐                     USER 0
│   │                                            ▦──────
│   │                                          ROMS
│   │
│   │                                            ▆──────
│   │                                          WASTE
└──────────────────────────────────────────────────────┘
```

The pointer

In DES, the pointer is a small arrow, which can be moved using either the keyboard or the AMX/DATEL mice. You can use either control method at any time - you don't need to specify which method you want to use.

Keyboard control:

Use the cursor keys to move the pointer UP, DOWN, LEFT and RIGHT. You can move the pointer diagonally as well, by holding down two cursor keys at once, for example, holding down UP and RIGHT will move the pointer diagonally towards the top right of the screen.

If you want to move the pointer more quickly, hold down either SHIFT or CONTROL when you are pressing the cursor keys.

To select the object which the pointer is currently on, press RETURN, ENTER or SPACE. This selection is known as "clicking".

Mouse control:

Using the mouse couldn't be simpler; just move the mouse in the direction you want to

```
┌─────────────────────────────────────────────────────────┐
│                                                         │
│  ╔═══════════════════════════════════════════════════╗  │
│  ║ File  Disc  Options                 © CampurSoft  ║  │
│  ╚═══════════════════════════════════════════════════╝  │
│    │     │    │                                          │
│    │     │    │                          [===]          │
│    │     │    │                          DRIVE A        │
│    │     │    │                          [===]          │
│  SHORTCUT KEYS                           DRIVE B        │
│                                          [==]           │
│                           SHORTCUT KEYS──USER 0         │
│                                          [###]          │
│                                          ROMS           │
│                                                         │
│                                          [===]          │
│                                          WASTE          │
│                                                         │
└─────────────────────────────────────────────────────────┘
```
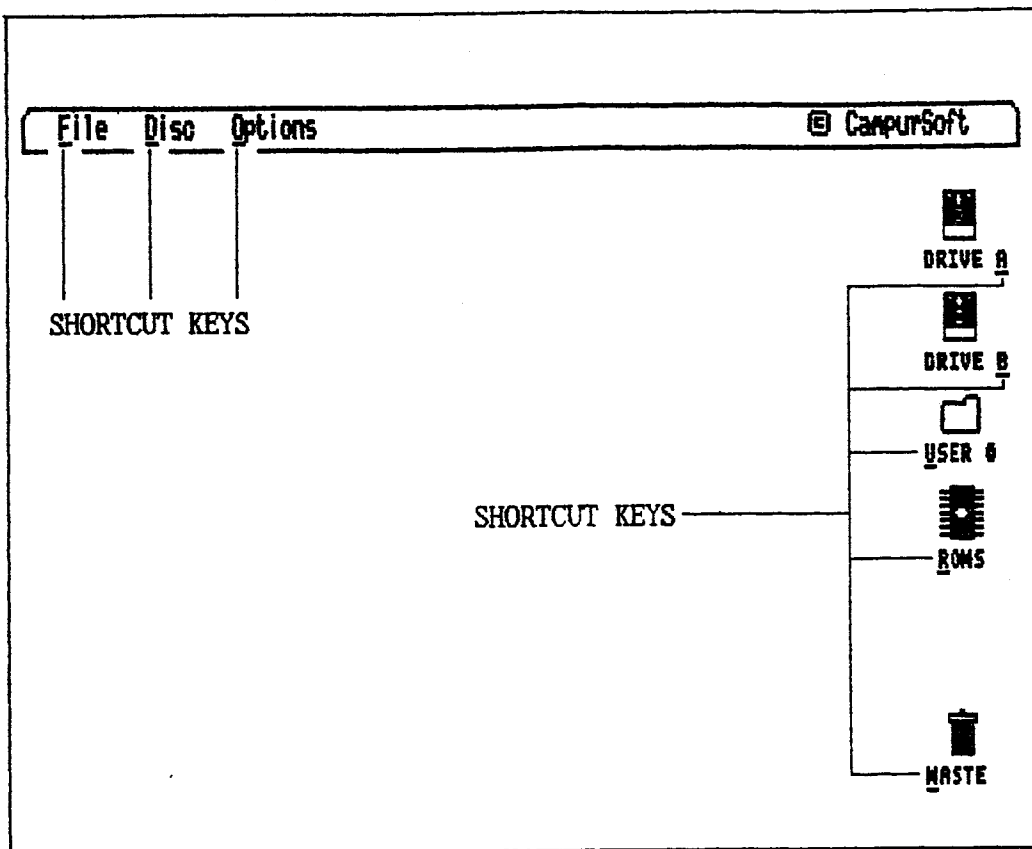
move the pointer. To select ("click") an object press either the left or right mouse buttons.

Note that if you click somewhere that isn't selectable, you will hear a "bong" warning noise.

Shortcut keys
───────────────

Although using a pointer is a very user-friendly way of controlling a program, there are times when it would be nice to be able to select something without having to move the pointer to the other side of the screen. This is where shortcut keys come in.

A shortcut key is a key that you press to activate a process on the desktop, as an alternative to moving the pointer to it and clicking. In DES, shortcut keys are indicated on-screen by an underlined character. Keys are logically defined, so, for example, you would press "A" for disc drive A, or "U" to change user numbers.

Experienced computer users normally prefer to use shortcut keys wherever possible, as it is a lot faster than the pointer method.
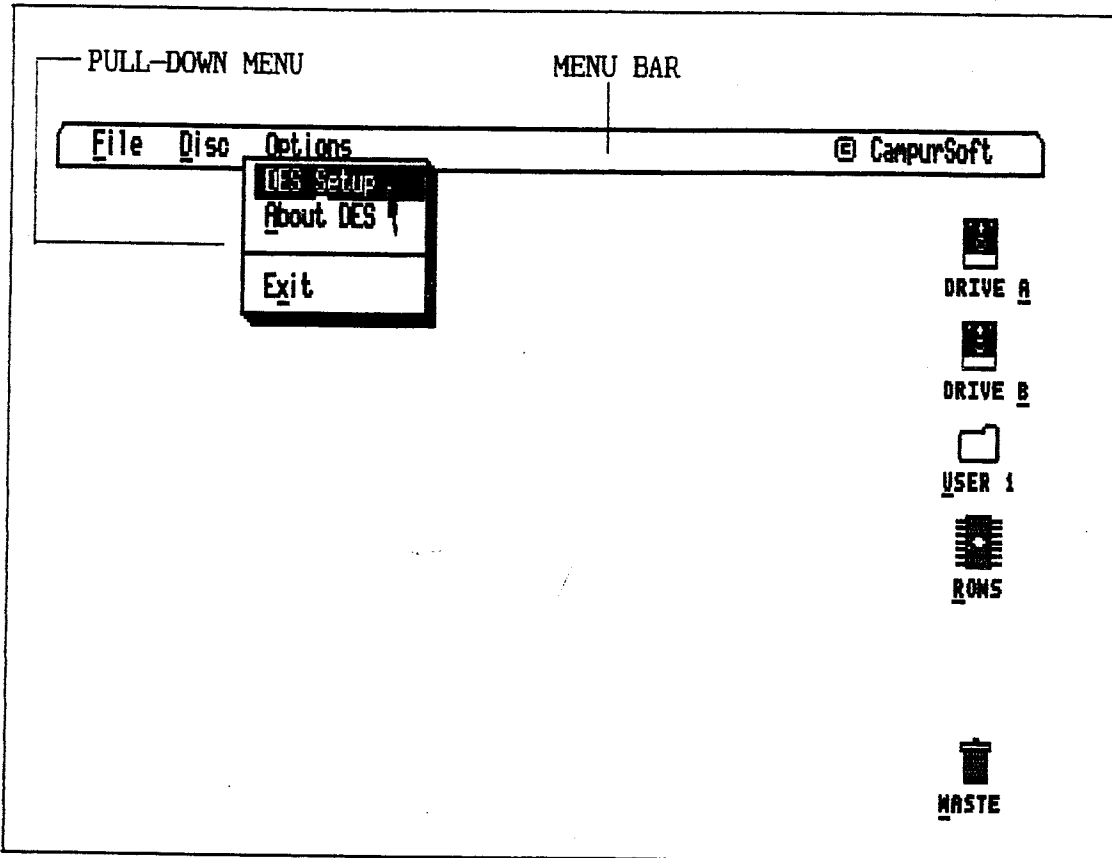
Icons
─────

An icon is a small picture which you click on to perform some operation, or it can be used to convey a message. For example, the question mark icon is displayed when DES is asking you a question, and the exclamation mark icon is displayed when DES is giving you a warning message.

The Menu Bar

The menu bar is a box running along the top of the screen, with a number of words in it. Each word represents a menu, and when you click the pointer on the word (or press its shortcut key) a menu will be displayed underneath it.

Pull-down menus

A pull-down menu is a list of options which are displayed for you to choose from, after clicking on a word in the menu bar.

```
┌──────────────────────────────────────────────────────────────────────┐
│  ┌─PULL-DOWN MENU              MENU BAR                                 │
│  ┌──────────────────────────────────────────────────────────┐         │
│  │ File   Disc   Options                          © CampurSoft│        │
│  │           ▐DES Setup .▌                                     │        │
│  │           ▐About DES ▌                                      │        │
│  │           ┌──────────┐                               ▣      │        │
│  │           │ Exit     │                             DRIVE A  │        │
│  │           └──────────┘                               ▣      │        │
│  │                                                    DRIVE B  │        │
│  │                                                      ▭      │        │
│  │                                                    USER 1   │        │
│  │                                                      ▦      │        │
│  │                                                     ROMS    │        │
│  │                                                      ▇      │        │
│  │                                                    WASTE    │        │
│  └──────────────────────────────────────────────────────────┘         │
└──────────────────────────────────────────────────────────────────────┘
```

To select an option in the menu, move the pointer up and down the list. If the pointer is over a valid menu option, then that option will then be highlighted. Simply select the option using the normal clicking method.

Alternatively , you can select a menu option by pressing its shortcut key.

Once you have selected an option, it will flash briefly, then the menu will disappear and the option will start running.

If you have selected a pull-down menu by mistake, and want to leave the menu, you can simply click on another object outside the menu, and this will be activated; you can also click on a blank area, where there are no objects, and the menu will disappear. If you are using the keyboard, pressing ESC will exit from the current menu.

In a pull-down menu you may see horizontal lines running across the menu, between sets of options. These lines exist only as a visual break, seperating groups of options, and cannot be selected.

Sometimes, in menus, you may see options which appear in a dotty, grey text. These are known as "dimmed" options, and cannot be selected, because they cannot be run with the current program setup. For example, if you haven't selected any files, you won't be able to select any file processing options.

Note that for referencing menu options throughout these instructions, the format MENU NAME|OPTION NAME is used. For example, if the "Run" option on the "File" menu was been discussed, the description FILE|RUN would be used.

Buttons

A button is a small box on the screen which you click on to perform some function. Buttons fall into a number of different categories.

```
 File   Disc   Options                        © CampurSoft

                                                          DRIVE A

                                                          DRIVE B
         ┌─────── Select drive to verify: ───────┐
         │                                        │        USER 0
         │              ○ Drive A                 │
         │              ◉ Drive B                 │        ROMS
         │          [ Ok ]    [ Cancel ]          │
         └────────────────────────────────────────┘
                                                          WASTE
RADIO BUTTONS                              PUSH BUTTONS
```

Push Button:

A push button represents an action - if you click on it, then something will happen. The action is described by text within the button. If the text is dimmed, then the button cannot be selected.

Radio Buttons:

These are small, round buttons, which are arranged in groups. Only one button from the group can be selected at once - like the channel buttons on a traditional car radio.

Radio buttons are used for mutually exclusive choices, i.e. where it would only be possible to select a single option from a list. An example would be selecting disc drive A or B, where you can have one or the other, but not both.
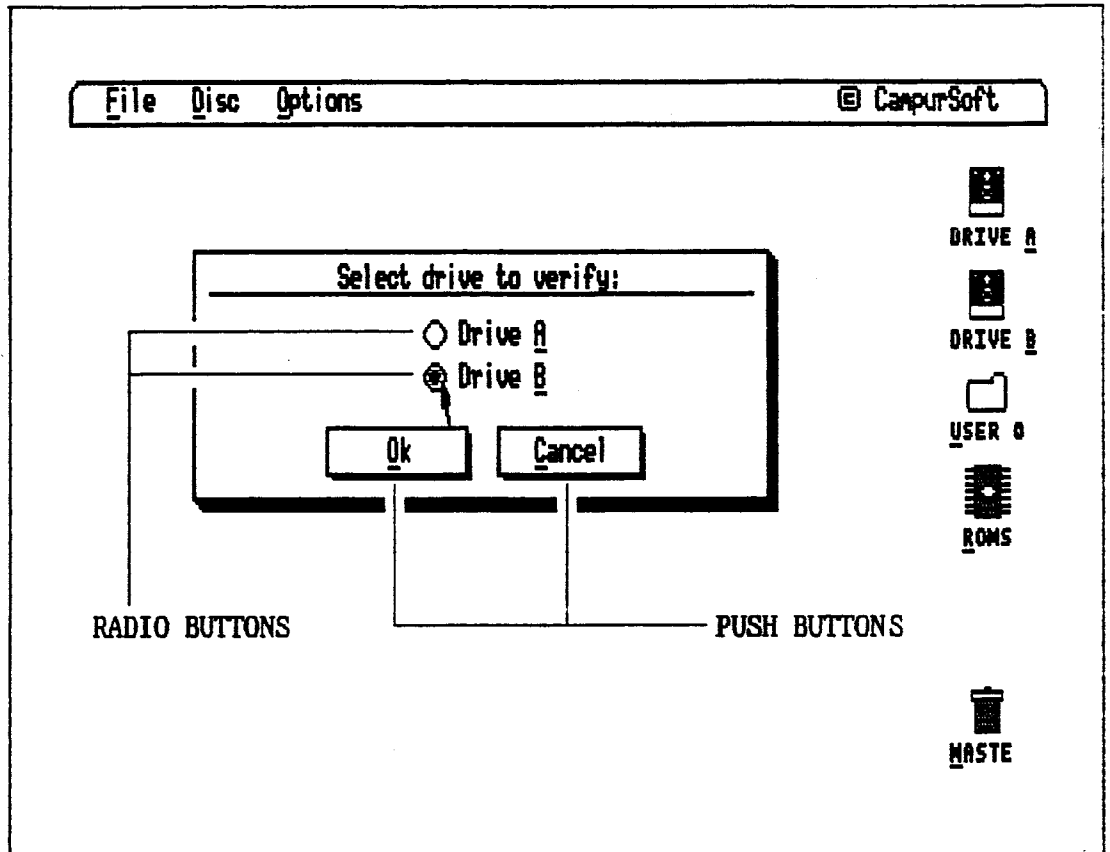
Check Boxes:

These are small, square boxes, and may be single or grouped together. In a group of check boxes, any of the boxes can be selected or unselected. A selected check box is indicated by being filled in with a cross.

Check boxes are used for selecting multiple items from a list of options - an example would be the font settings in an art package; it could have a set of check boxes for bold, italic, underline etc, any of which can be selected or not.
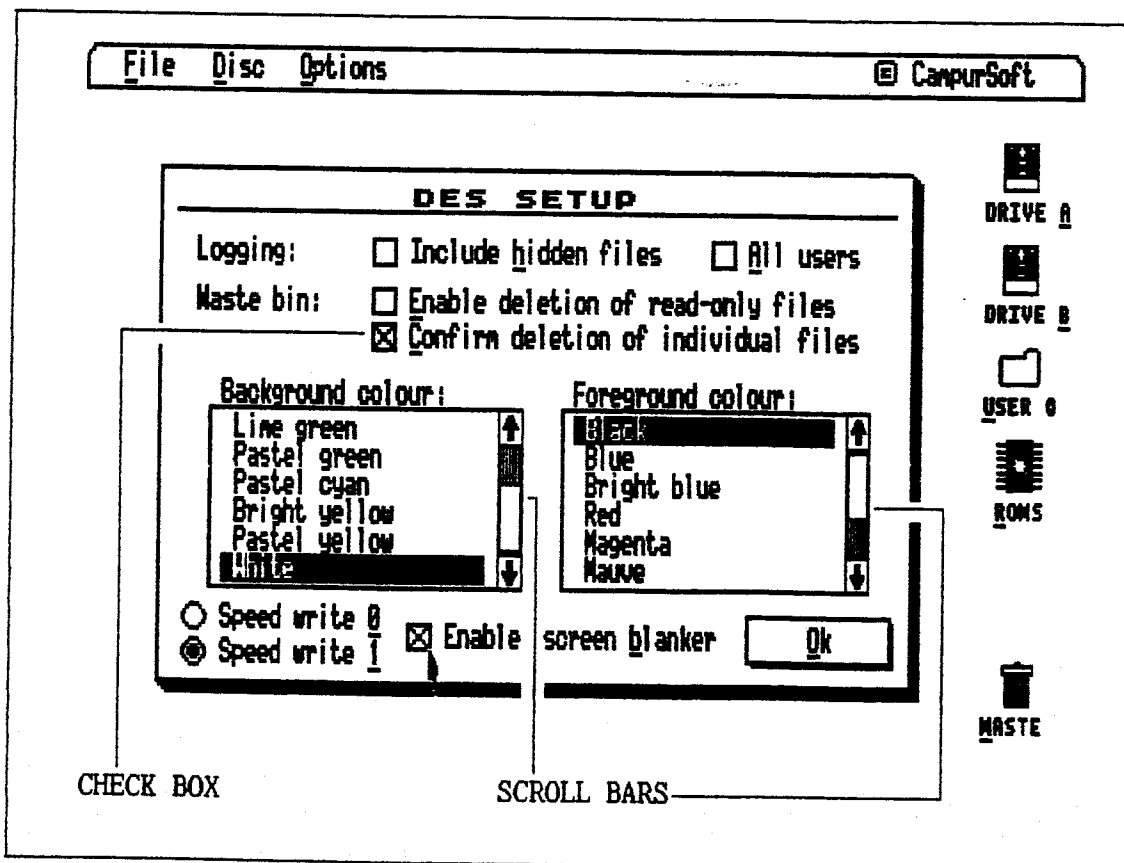
Alert boxes

An alert box displays a message, one or two buttons and an icon. It is simply a means of conveying important information to the user, or getting a response to an essential query. To get rid of the box, you have to respond to it by selecting one of the buttons.

Alert boxes are commonly used for displaying important error messages, or confirming a course of action. For example, before you delete files from a disc, you will be asked for confirmation.

Scroll bars

A scroll bar is used when you have the option of scrolling up and down a list or group of items that is too large to be displayed on-screen all at once.

In DES, a scroll bar consists of an upwards-pointing arrow at the top of the area and a downwards-pointing arrow at the bottom of the area.

CHECK BOX   SCROLL BARS

You click on these arrows to scroll up and down. Joining the arrows is a box which gives a graphical representation of the current position in the list. If the box is blank, it means that the list cannot be scrolled; otherwise the box is shaded in, with an indicator to show the current position.
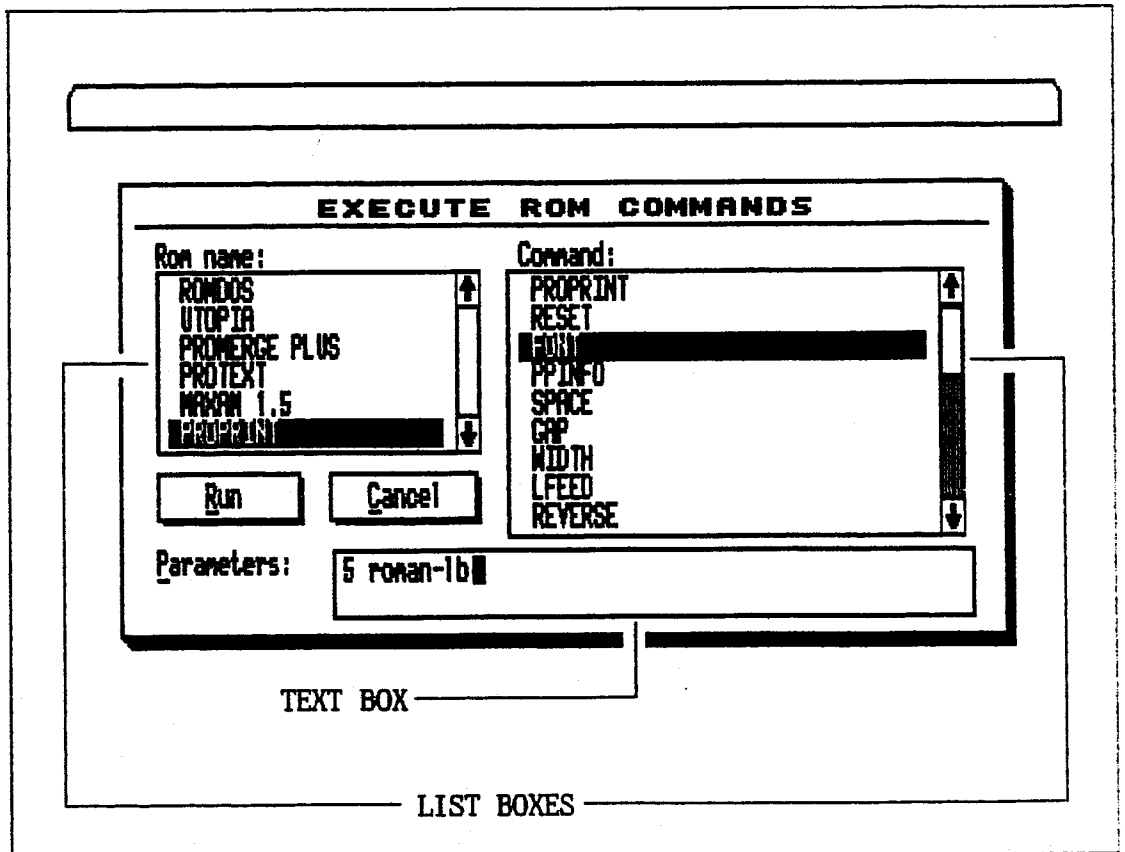
List Boxes
_____

A list box is a standard WIMP object which allows you to select a single item from a list. The list may be too big to be displayed all at once, so a scroll bar is attached to the side of the list. Scroll the list using the method outlined previously. Select an item from the list by clicking on it.

There is a keyboard alternative for selecting from listboxes. This uses the function keypad (numeric keypad on CPC464s). The top row of function keys (f7, f8, f9) is used to move the cursor up the list by 1 position, and the middle row (f4, f5, f6) is used to move down the list by one position. If there is only one list box on-screen, then f8 and f5 are used; if there are two list boxes, then f7 and f4 control the left hand box, and f9 and f6 control the right hand box.

The list box will stay on the screen until a confirmation button outside the list box is clicked on, so if you make an incorrect selection, all you have to do is select another item from the list.

Text Boxes
_____

A text box is a box in which a piece of text or a number is displayed, for editting by the user. To edit the contents of a text box, all you have to do is to activate it

EXECUTE ROM COMMANDS

Rom name:
ROMDOS
UTOPIA
PROMERGE PLUS
PROTEXT
MAXAM 1.5
PROPRINT

Run   Cancel

Command:
PROPRINT
RESET
FONT
PPINFO
SPACE
GAP
WIDTH
LFEED
REVERSE

Parameters: 5 roman-1b

TEXT BOX

LIST BOXES

```
┌─────────────────────────────────────────────────────────┐
│                                                          │
│  ┌─────────────────────────────────────────────┐        │
│  │  File   Disc   Options            © CampurSoft │)      │
│  └─────────────────────────────────────────────┘        │
│                                                    ▣      │
│        ┌────────────────────────────────┐        DRIVE A │
│        │  Format disc in drive B to DATA. │                │
│   ┌────┤                                  ├───     ▣      │
│   │    │                                  │       DRIVE B │
│   ┌────┴──────────────────────────────┐  │               │
│   │  ⊘  Are you sure you want to format this disc? │  ▢   │
│   │                                    │      USER 0      │
│   │    ┌─────────┐    ┌─────────┐      │               │
│   │    │   Yes   │    │   No    │      │    ▦      │
│   │    └─────────┘    └─────────┘      │   ROMS    │
│   └────────────────────────────────────┘          │
│   │                                                │
│   │                                                │
│   └──────────────────── WINDOWS                    │
│                                               ▆    │
│                                              WASTE  │
│                                                     │
└─────────────────────────────────────────────────────────┘
```
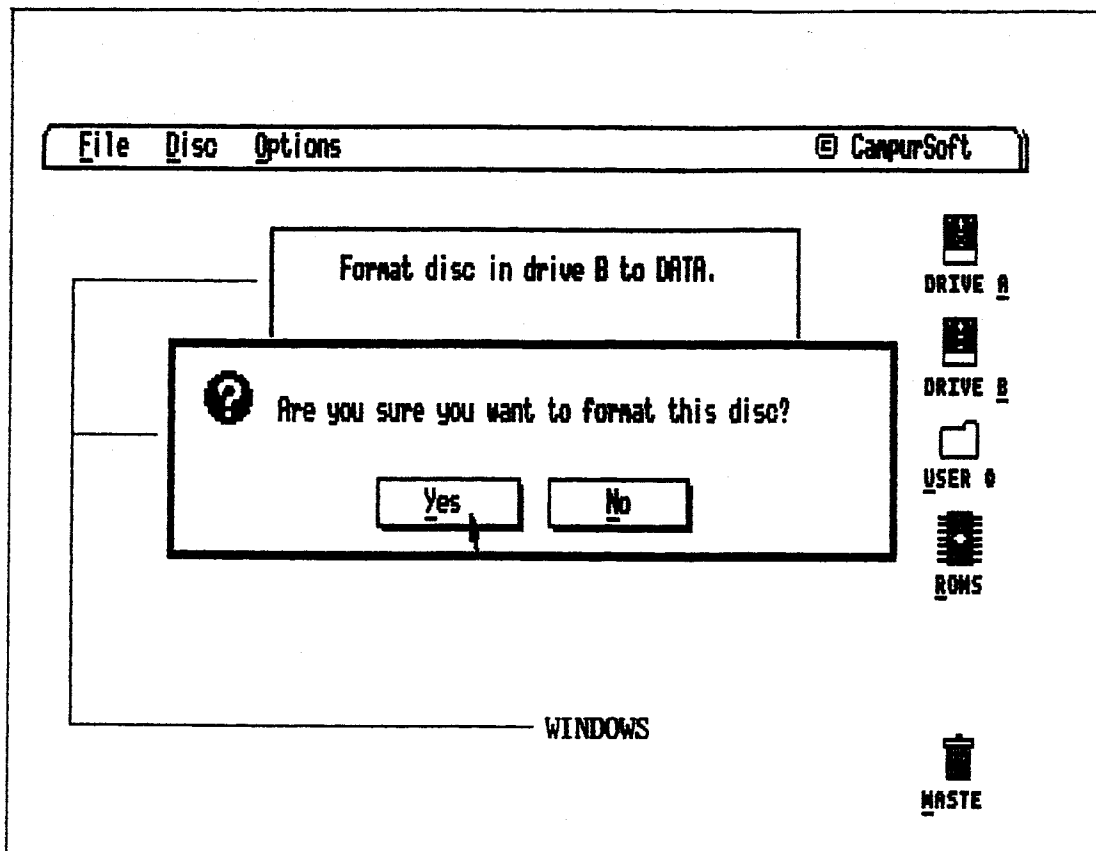
by clicking the mouse on it, or by pressing the associated shortcut key. This will put you in to edit mode.

When you are editting the data, you have full cursor movement within the box, using the cursor keys. Pressing CTRL or SHIFT and a cursor key will move the cursor to that side of the box. CLR deletes the character underneath the cursor; DEL deletes the character to the left of the cursor. Press RETURN when you have finished editting.

If you are entering numeric data, you will only be able to type the digits 0 to 9; the text editting features are still available. If you enter a number which is too small or too large, an error message will be displayed, and you will have to change the number.

Windows

A window is a boxed-off area of the screen in which the current process is taking place. On more powerful computers, such as PCs, many windows can be displayed at once, running different programs simultaneously - the CPC is incapable of this.

3: INSTALLATION

Firstly, as DES is a ROM program, you will need a Rombox. DES comes on two ROMs, so you will need two free slots in which to put it.

It doesn't matter which sockets the DES ROMs are placed in, or what order they are
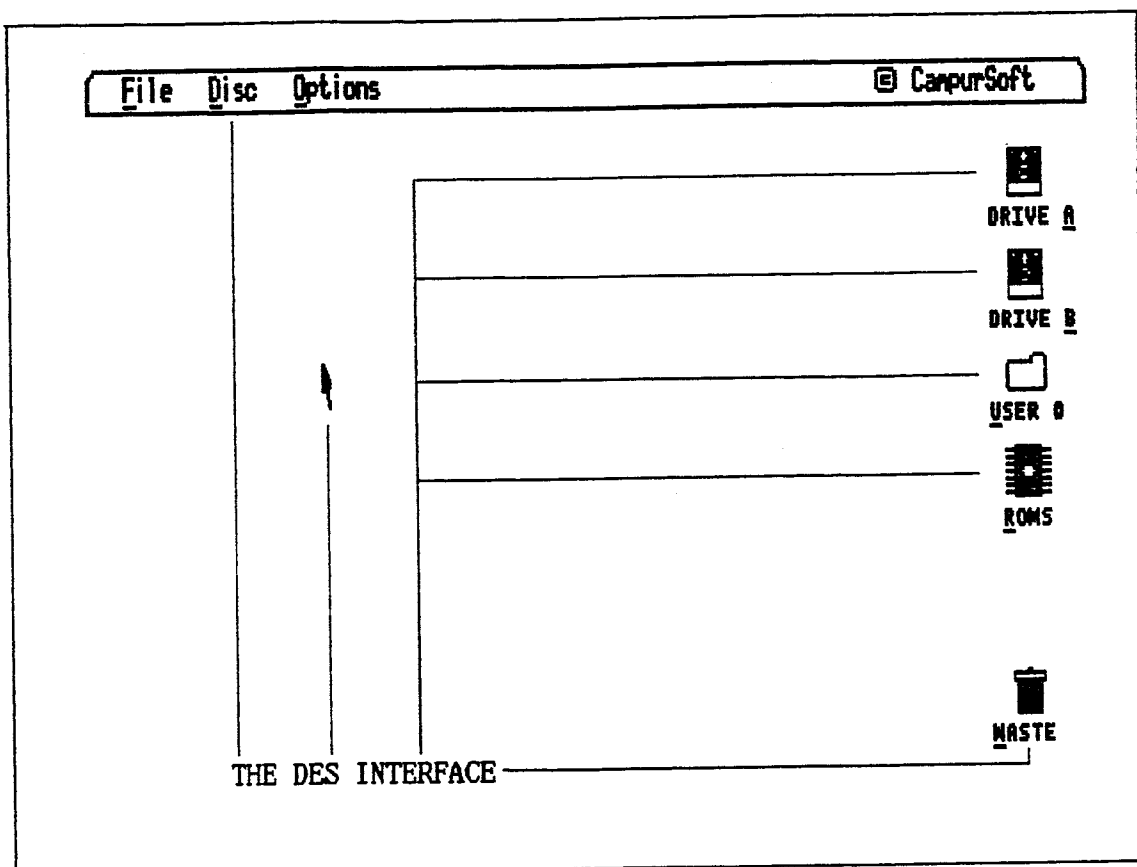
placed. DES will always work; it waits for all ROMs to initialise before it takes over control.

CPC464:
DES can be inserted in sockets 1 to 6.

CPC664,6128 & 6128+
DES can be inserted in sockets 1 to 6, or 8 to 15.

```
┌─────────────────────────────────────────────────────┐
│  ┌─────────────────────────┐          ⓒ CanpurSoft   │
│  │ File  Disc  Options      │                         │
│                                               ▣       │
│                                            DRIVE A    │
│                                               ▣       │
│                                            DRIVE B    │
│           ▮                                   ☐       │
│                                            USER 0     │
│                                               ▦       │
│                                            ROMS       │
│                                               ▮       │
│                                            WASTE      │
│           THE DES INTERFACE──────────────────         │
└─────────────────────────────────────────────────────┘
```

THE DES INTERFACE

Before inserting the ROMs, examine them carefully for damage to the pins; do not handle the pins, as this could cause damage to the ROM.

Before installation, make sure that the computer and all peripherals are switched off, as damage could be caused by inserting ROMs whilst the power is on.
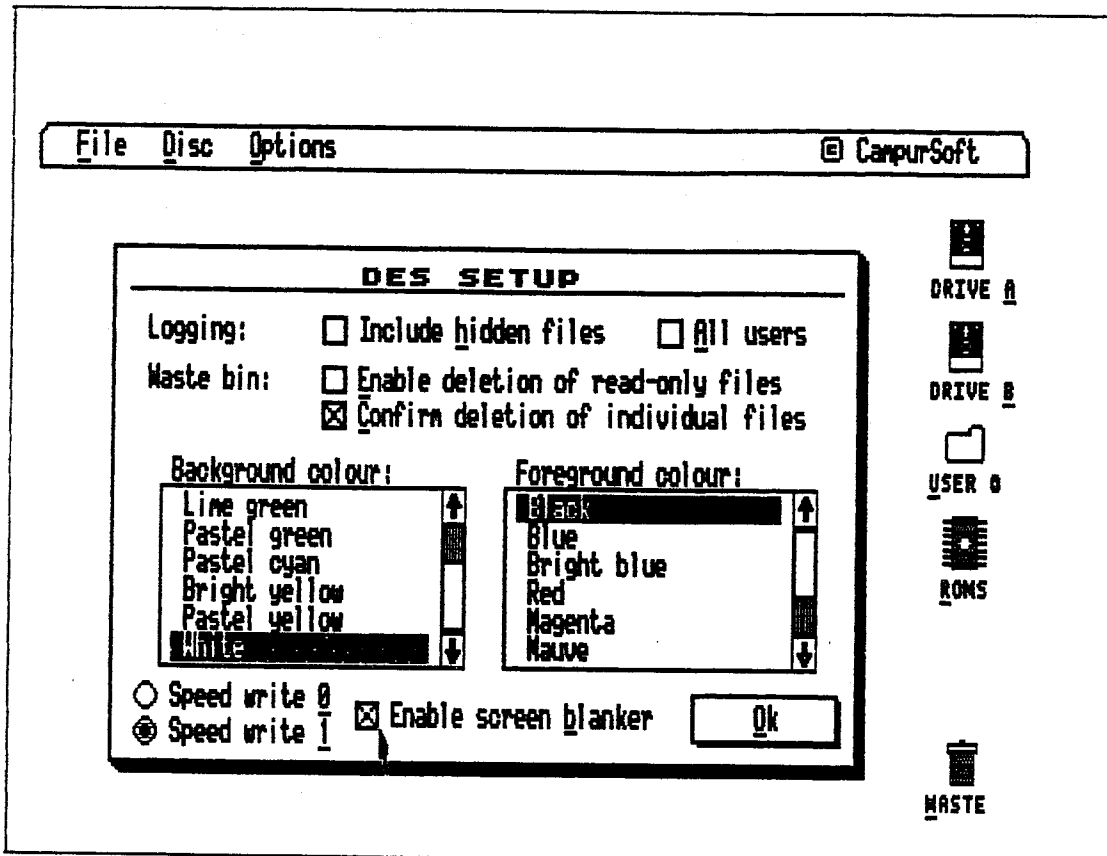
Now insert the ROMs carefully into their sockets on the ROM box - make sure that they are fitted the right way round; follow the instructions which came with your Rombox. You will probably have to set switches on the Rombox to enable the two sockets which DES is installed in.

Turn the computer back on. If all is well, you should be greeted with the DES front end. If this doesn't happen, turn the power off, check all connections, and try again.

4: GETTING STARTED

As soon as you switch your computer on, DES takes over control and displays its own interface, instead of the BASIC "Ready" prompt. There are a couple of things to note first.

File Disc Options   © CampurSoft

DES SETUP

Logging: ☐ Include hidden files   ☐ All users
Waste bin: ☐ Enable deletion of read-only files
            ☒ Confirm deletion of individual files

Background colour: Foreground colour:

Lime green	Black
Pastel green	Blue
Pastel cyan	Bright blue
Bright yellow	Red
Pastel yellow	Magenta
White	Mauve

○ Speed write 0
◉ Speed write 1   ☒ Enable screen blanker   Ok

DRIVE A
DRIVE B
USER 0
ROMS
WASTE

If you leave
DES waiting
for you do
to something
for too long,
without any
p o i n t e r
movement or
keypresses,
you'll find
that after a
while the
screen is
b l a n k e d .
Don't panic!
T h i s   i s
supposed to happen. All you have to do is press any key and the screen will be
redisplayed, and you can continue with your work.

There is a reason for this; if you leave the same static display on your computer
screen for too long, it is possible that your screen could become damaged. This screen
blanking prevents that from happening.

If you don't want the screen to blank, you can disable the screen blanker using
OPTIONS|DES SETUP.

Powerup Keypresses

When you turn your computer on (or reset it, using CTRL-SHIFT-ESC), there are a number
of settings you can change, before DES appears on your screen.

DES defaults to a black-on-white display. If you find this hard to read, try holding
down TAB and turning on the computer, and release TAB when the DES desktop appears.
This gives you an inverse display, i.e. white text on a black background.
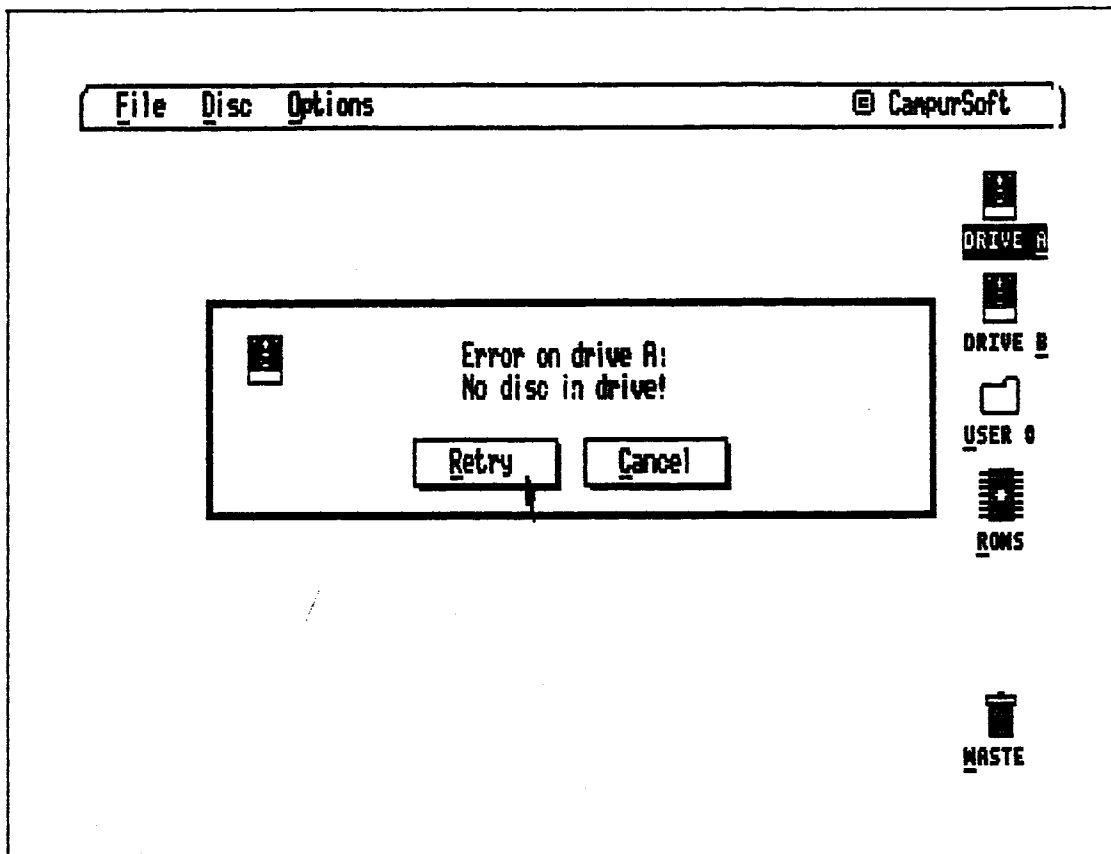
If you don't like a black and white display, hold down COPY instead of TAB. This will
give you a black-on-orange display - some people find this easier to look at than harsh
white. If you hold COPY and TAB, you'll get an orange on black display.

If none of these colour schemes suit you, you can alter the colours to whatever combination you like, using OPTIONS|DES SETUP.

Sometimes you may prefer to by-pass DES and go straight into BASIC, without having to use OPTIONS EXIT. To do this, hold down SPACE when the computer is being turned on or reset. When you see the "BASIC 1.0" or "BASIC 1.1" message, release SPACE and you will enter BASIC.

Note for 6128+ owners

If you are using a 6128+, you may find it difficult to use the above keypresses, because of the " f 1 Amstrad BASIC / f 2 Burnin Rubber " selection. The trick is to hold down the required setup key and then press f1 for BASIC. You should find this produces the desired effect.

```
┌──────────────────────────────────────────────────────────────┐
│                                                                │
│  ┌────────────────────────────────────────────────┐           │
│  │ File  Disc  Options              Ⓔ CampurSoft │)          │
│  └────────────────────────────────────────────────┘           │
│                                                         ▐▌      │
│                                                        DRIVE A  │
│                                                                 │
│                                                         ▐▌      │
│       ┌──────────────────────────────────────┐        DRIVE B  │
│       │  ▦      Error on drive A:             │                 │
│       │         No disc in drive!             │         □       │
│       │                                       │        USER 0   │
│       │     ┌─────────┐    ┌─────────┐        │                 │
│       │     │  Retry  │    │ Cancel  │        │         ▦       │
│       │     └─────────┘    └─────────┘        │        ROMS     │
│       └──────────────────────────────────────┘                 │
│                                                                 │
│                                                         ▐▌      │
│                                                        WASTE    │
└──────────────────────────────────────────────────────────────┘
```

Disc errors

If a disc error occurs when DES tries to access the disc drive, an error will be displayed in an alert box, instead of an ugly AMSDOS message.

If the error is of the "Retry, Ignore or Cancel?" type, (e.g. disc missing) the alert message will have "Retry" and "Cancel" buttons - these act just the same as pressing R or C in AMSDOS.

If the error is of the message-only type, such as "File does not exist", then the alert box will contain only an "Ok" button.

The DES display

When you turn the computer on and DES takes over, you will see the following objects on the screen:
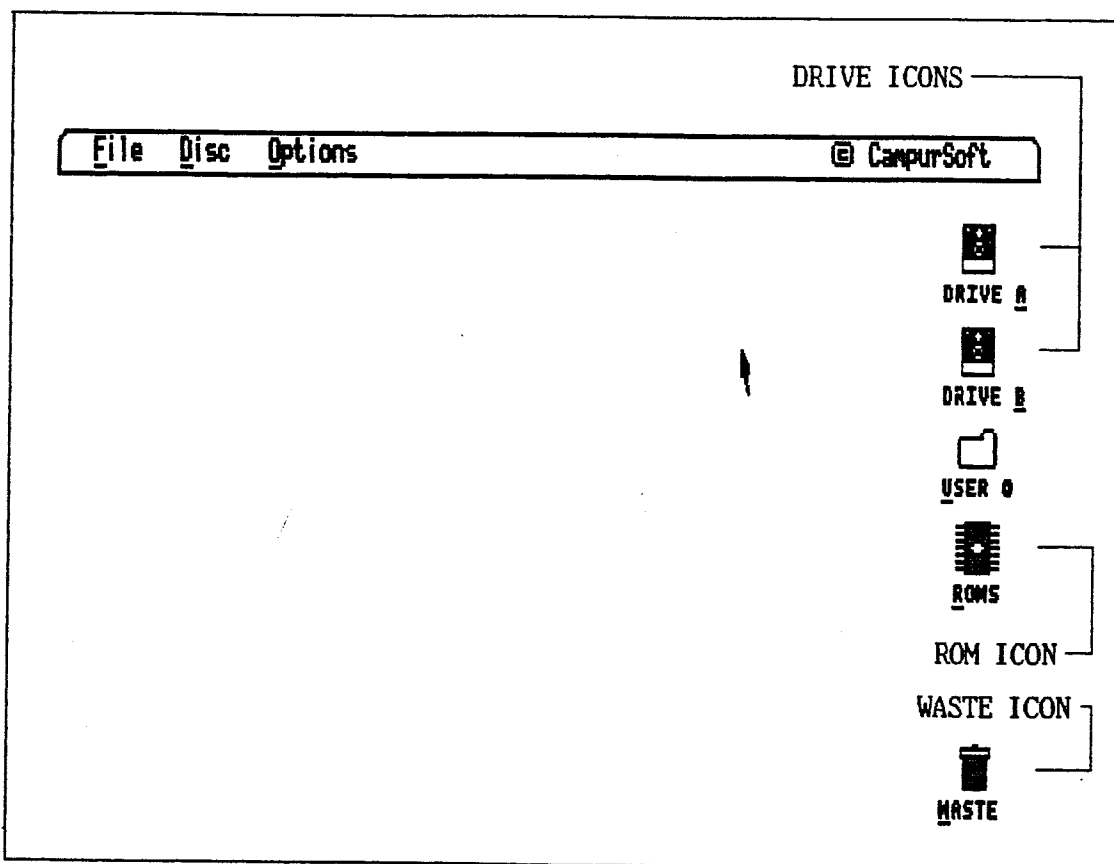
Menu bar

Drive A icon

Drive B icon

User icon

Rom icon

Waste bin

The menu bar contains the labels "File", "Disc" and "Options". If you click on one of these labels, a menu will appear below it.

```
                                          DRIVE ICONS ─────┐
  ┌─────────────────────────────────────────────────────────┐
  │  File  Disc  Options                    © CampurSoft      │
  │                                                           │
  │                                              ▓▓          │
  │                                             DRIVE A  ─┐   │
  │                                              ▓▓          │
  │                                 ▶           DRIVE B  ─┘   │
  │                                              ⌐┐          │
  │                                             USER 0        │
  │                                              ▓▓          │
  │                                             ROMS    ─┐   │
  │                                          ROM ICON ──┘   │
  │                                          WASTE ICON ─┐  │
  │                                              ▓          │
  │                                             WASTE   ─┘  │
  └─────────────────────────────────────────────────────────┘
```

Drive A and Drive B icons

If you select one of these icons, DES will look for a disc in the relevant drive, and scan it for details of all the relevant files. As this scanning is taking place, a percentage indicator will be displayed.
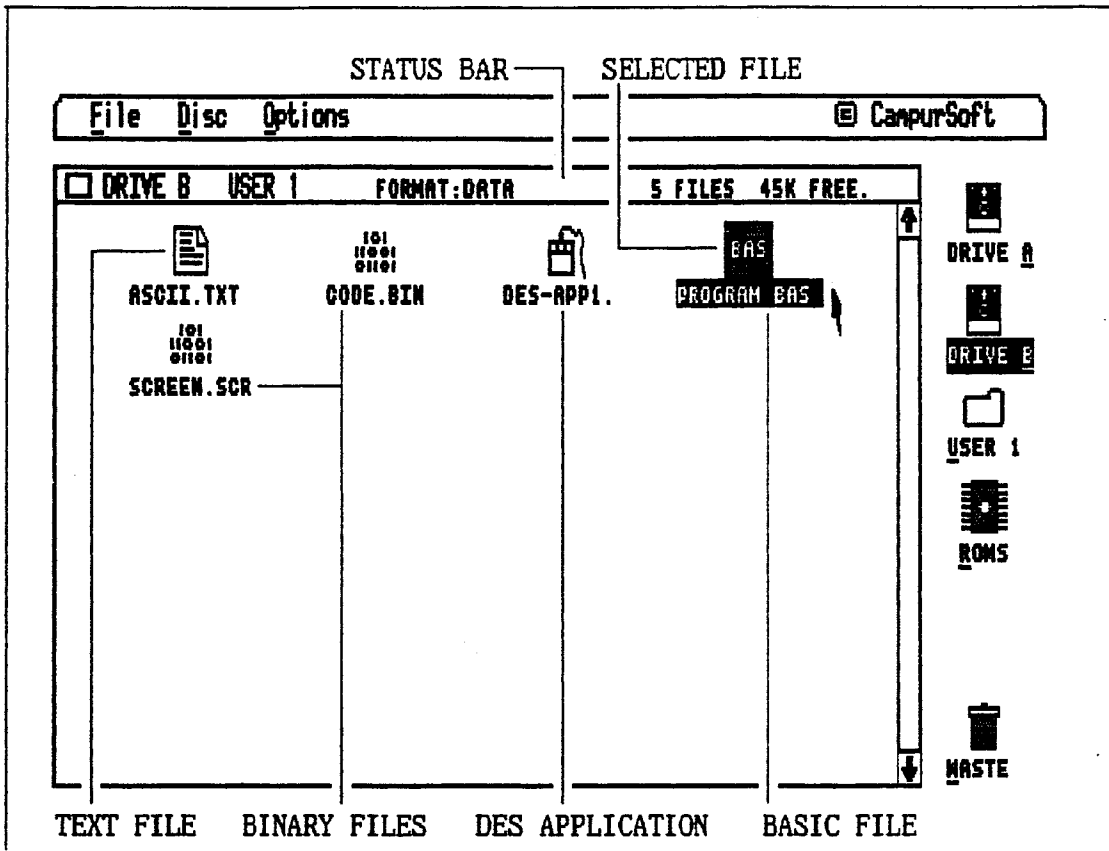
When the disc has been scanned, a window will appear, with a number of icons in it. Each icon represents a file, and has the AMSDOS name of the file underneath it.

A scroll bar is displayed at the right hand side of the window, so you can scroll up and down if all the files can't be displayed at once. Like list boxes, you can use f8 and f5 to scroll up and down this display.

There is a different icon for each for the three main file types. BASIC programs are represented by a BAS icon; Binary/machine code files are represented by an icon filled with Os and 1s; text/data files are shown as a document - a page with the corner folded over.

At the top of this window you will see a status bar showing the current disc drive, user number, disc format, number of files and amount of free disc space. Clicking on the box at the left of this status bar will remove the window from the screen.

To select a file, simply click on the file's icon. The icon will then be highlighted. Clicking on an icon again will de-select it. You can select more than one file, enabling you to perform multiple file operations.

```
                    STATUS BAR          SELECTED FILE

   ┌ File  Disc  Options ┐              ┌        © CampurSoft ┐

   ┌□ DRIVE B   USER 1      FORMAT:DATA      5 FILES  45K FREE. ┐      ▣
                                                                      DRIVE A
          📄               ▦                🗂          ▣BAS
       ASCII.TXT        CODE.BIN          DES-APP1.  PROGRAM BAS       ▣
          ▦                                                           DRIVE B
       SCREEN.SCR                                                      📁
                                                                      USER 1
                                                                      ▦
                                                                      ROMS

                                                                      🗑
                                                                      WASTE
   TEXT FILE    BINARY FILES    DES APPLICATION   BASIC FILE
```

If you have selected the "All users" feature in OPTIONS|DES SETUP, then files from every user number (0-15) will be scanned and displayed. The files are sorted into user number order (i.e. user 0, then user 1 etc), and the user number is displayed just above the icon's filename.

User icon

This acts just like the |USER,n command in AMSDOS, to change to a different disc user number. This probably won't be used much on standard Data and System format discs.
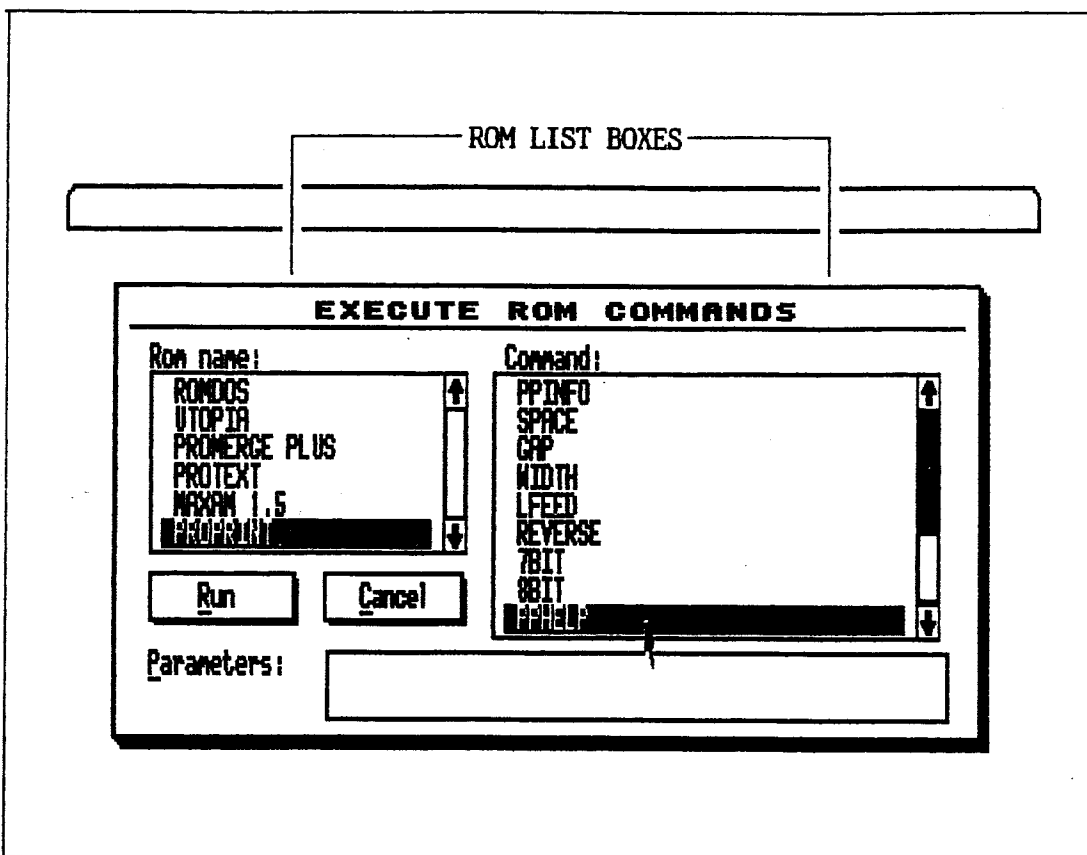
It is useful, however, with ROMDOS high capacity discs, as if there is a large number of files on the disc, they can't all be seen on-screen at once when you use the AMSDOS CAT command. You can group files in different user numbers to overcome this, possibly assigning each user number a certain type of file (documents, BASIC programs, etc).

Note that if you have selected the "All users" option in OPTIONS|DES SETUP, you will not be able to select the "User" icon.

One feature which DES doesn't support is the folders/directory system used by some GUIs. This is because, although it could be implemented within DES, there is no software written for the CPC which could make use of this, so organising files this way would be of limited use.

ROM icon

This feature enables you to access other ROMs from within DES, instead of having to use the RSX bar command from Basic.

ROM LIST BOXES

EXECUTE ROM COMMANDS

Rom name:
ROMDOS
UTOPIA
PROMERGE PLUS
PROTEXT
MAXAM 1.5
PROCOPY

Command:
PPINFO
SPACE
GAP
WIDTH
LFEED
REVERSE
7BIT
8BIT
PPHELP

Run   Cancel

Parameters:

If you have a disc logged in (by using the Drive A / B icons), then when you use this option the disc information will be cleared from memory, so you'll have to log in the disc again when you return. This is because DES clears the computer's memory to ensure that the ROM commands work properly.
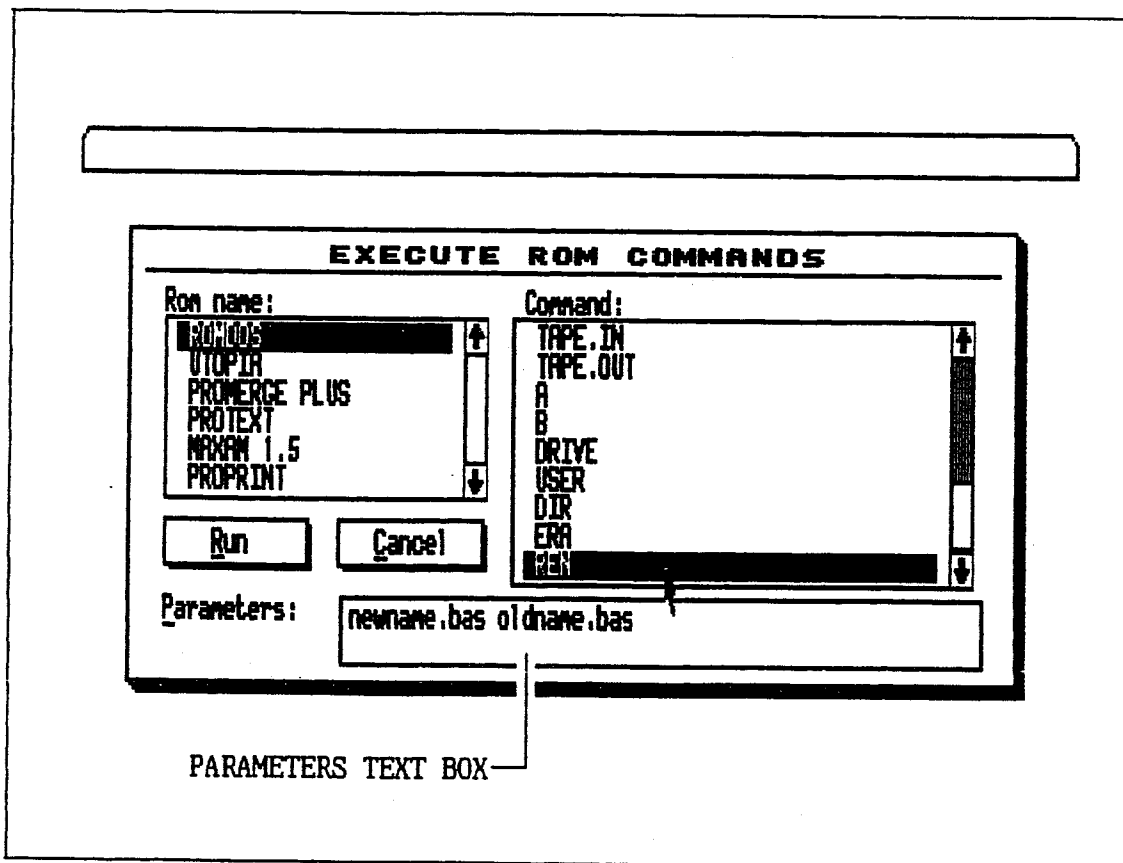
When you activate the ROM icon, you will be presented with two list boxes, one containing a list of ROM names, and another containing a list of RSX commands for this ROM. If you move to another ROM in the ROM names list box, the list of RSXs will be changed to that of the relevant ROM. To run the currently selected ROM command, use the "RUN" button.

If you want to run a ROM command with parameters (e.g. |DIR,"*.BIN"), then you have to enter these parameters in the "Parameters" text box. This takes a slightly different format to BASIC RSX commands. Instead of seperating paramters by commas, you seperate them with spaces.

Strings can simply be typed in, but if the first character of the string is a number, or the string contains spaces, then you have to put quotes ("") around the string. Numbers can be entered in decimal or hexadecimal. Hexadecimal numbers have to be preceded by an ampersand (&) or a hash (#).

Example:

|REN,"newname.bas" , "oldname.bas" - set the ROM name to CPM ROM or ROMDOS, set the Command to REN, and enter the following in the " Parameters " text box:
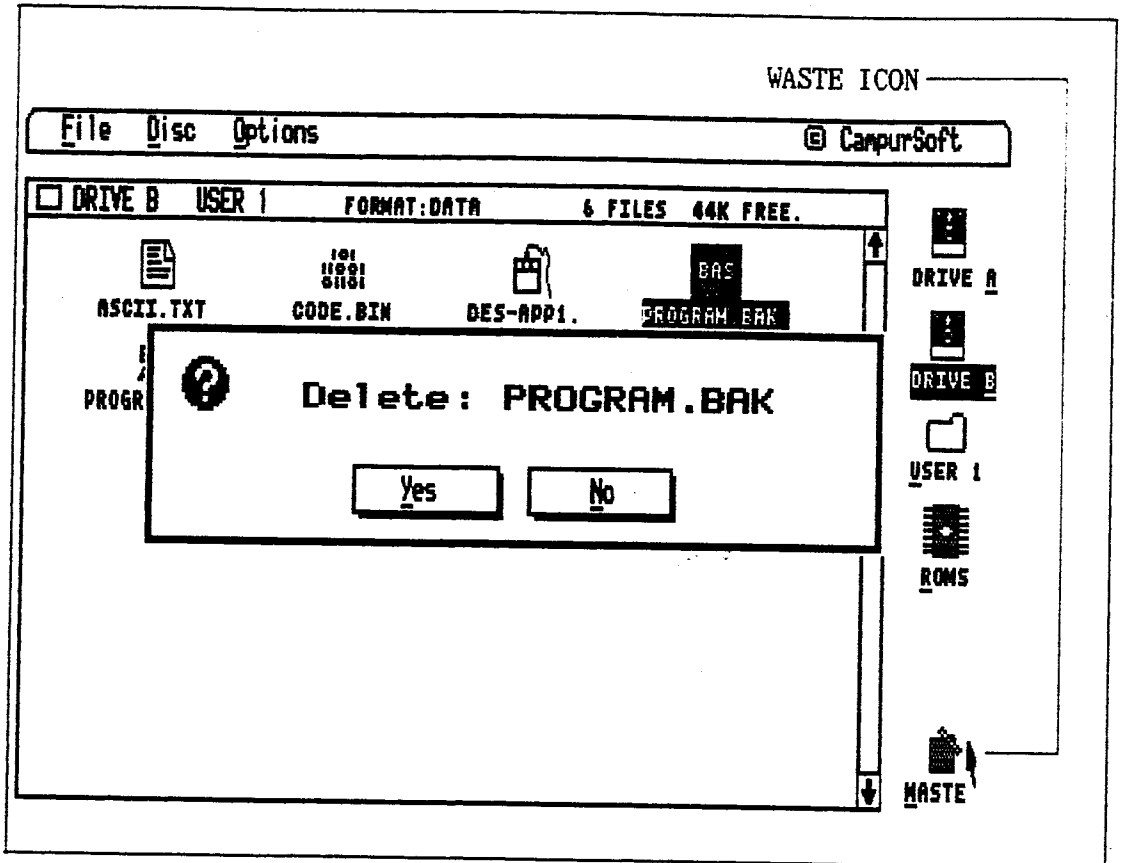newname.bas oldname.bas or "newname.bas" "oldname.bas"

EXECUTE ROM COMMANDS

Rom name:

ROMDOS
UTOPIA
PROMERGE PLUS
PROTEXT
MAXAM 1.5
PROPRINT

Command:

TAPE.IN
TAPE.OUT
A
B
DRIVE
USER
DIR
ERA
REN

Run   Cancel

Parameters: | newname.bas oldname.bas

PARAMETERS TEXT BOX

Example:

|DEDIT,"A",0,&cl   (from Arnor's Utopia)
- set the ROM name to UTOPIA, set the Command to DEDIT, and enter the following in the "Parameters" text box:
A 0 &cl or "A" 0 &cl or A 0 #cl

Waste icon

This deletes all selected files from the disc. An alert message will be displayed for each file, asking if you want to delete it or not. When you have finished confirming all the files, there is a further alert message, which gives you the opportunity to abandon the deleting before the disc is altered. If you opt to go ahead, the files will be deleted, and the disc will be re-scanned.

Note that by default you can't delete read-only files, although this can be altered by changing the relevant setting in OPTIONS |DES SETUP.
If a disc hasn't been logged in, or you haven't selected any files, an error message will be displayed.

```
                                              WASTE ICON ──────────┐
 ┌──────────────────────────────────────────────────────────┐     │
 │ File  Disc  Options                      © CampurSoft │     │
 ├──────────────────────────────────────────────────────────┤     │
 │ □ DRIVE B   USER 1    FORMAT:DATA    6 FILES  44K FREE.   │  ▓▓▓
 │                                                          ▲ │ DRIVE A
 │     📄           ░░░         🔒         BAS               │ │
 │   ASCII.TXT    CODE.BIN    DES-APP1.   PROGRAM.BAK        │ │ ▓▓▓
 │                                                          │ │ DRIVE B
 │   PROGR  ❓   Delete: PROGRAM.BAK                         │ │ 📁
 │              ┌─────┐      ┌─────┐                         │ │ USER 1
 │              │ Yes │      │ No  │                         │ │
 │              └─────┘      └─────┘                         │ │ 🖧
 │                                                          │ │ ROMS
 │                                                          │ │
 │                                                          ▼ │ 🗑 WASTE
 └──────────────────────────────────────────────────────────┘
```

Overview of Menus

Here is a brief description of the DES menu functions - a full description can be found in section 5 of this manual.
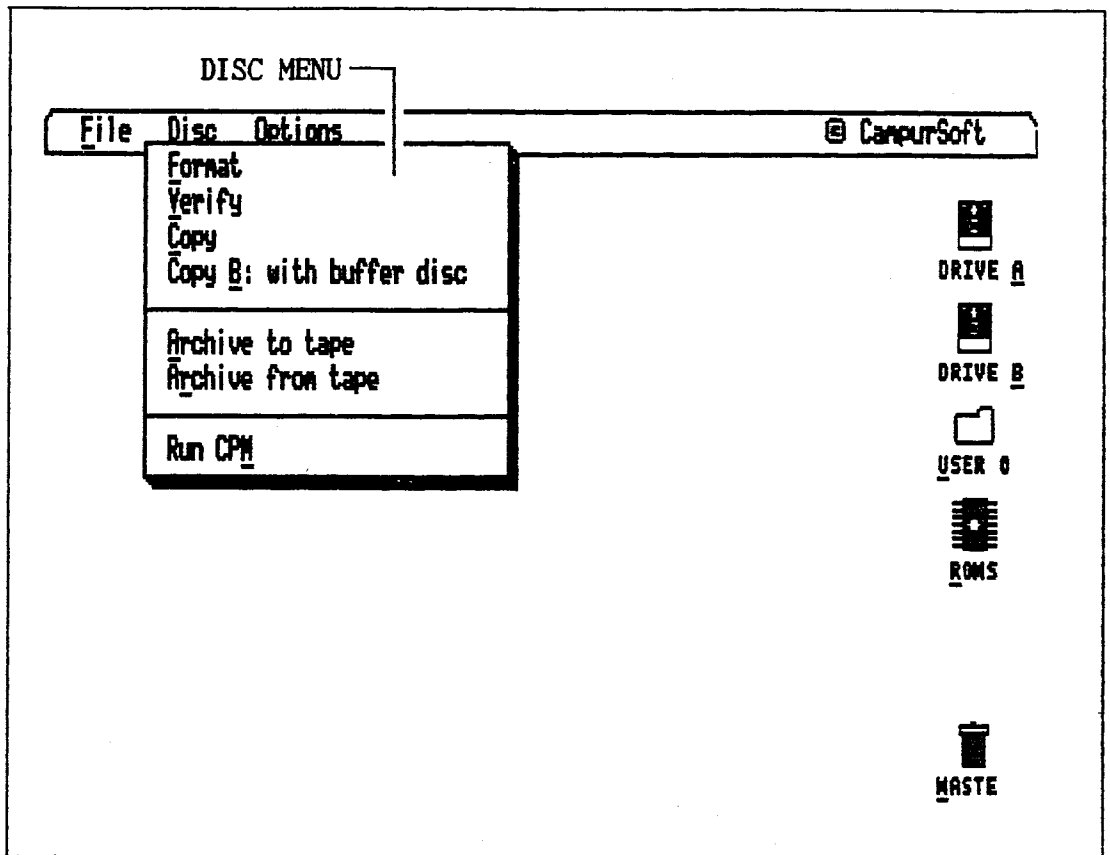
File menu:

Run   - executes a file, just like the BASIC RUN"filename"
Rename - multiple file renamer

Copy - copy files
Display - displays text files on screen
Print - dumps text files to printer
Set user number - move files to a different user number
Attributes - sets files to hidden, read-only etc.
Info - displays file header information and attributes
Select all - selects all files
Select type - selects all files of a specified type
Deselect all - de-selects all selected files

Disc menu:

Format -
Formats disc
to DATA,
VENDOR or
ROMDOS.
Verify -
Checks disc
for errors
Copy - Copy
a disc
Copy B: with
buffer disc -
Faster copy
for ROMDOS
discs
Archive disc
to tape -
Back up a
disc to tape
Archive tape
to disc -
Recover a tape back up of a disc
Run CPM - Starts up CPM

DISC MENU

File	Disc	Options		@ CampurSoft

Format
Verify
Copy
Copy B: with buffer disc

Archive to tape
Archive from tape

Run CPM

DRIVE A

DRIVE B

USER 0

ROMS

WASTE

Options menu:

Des Setup - Change DES colours and settings
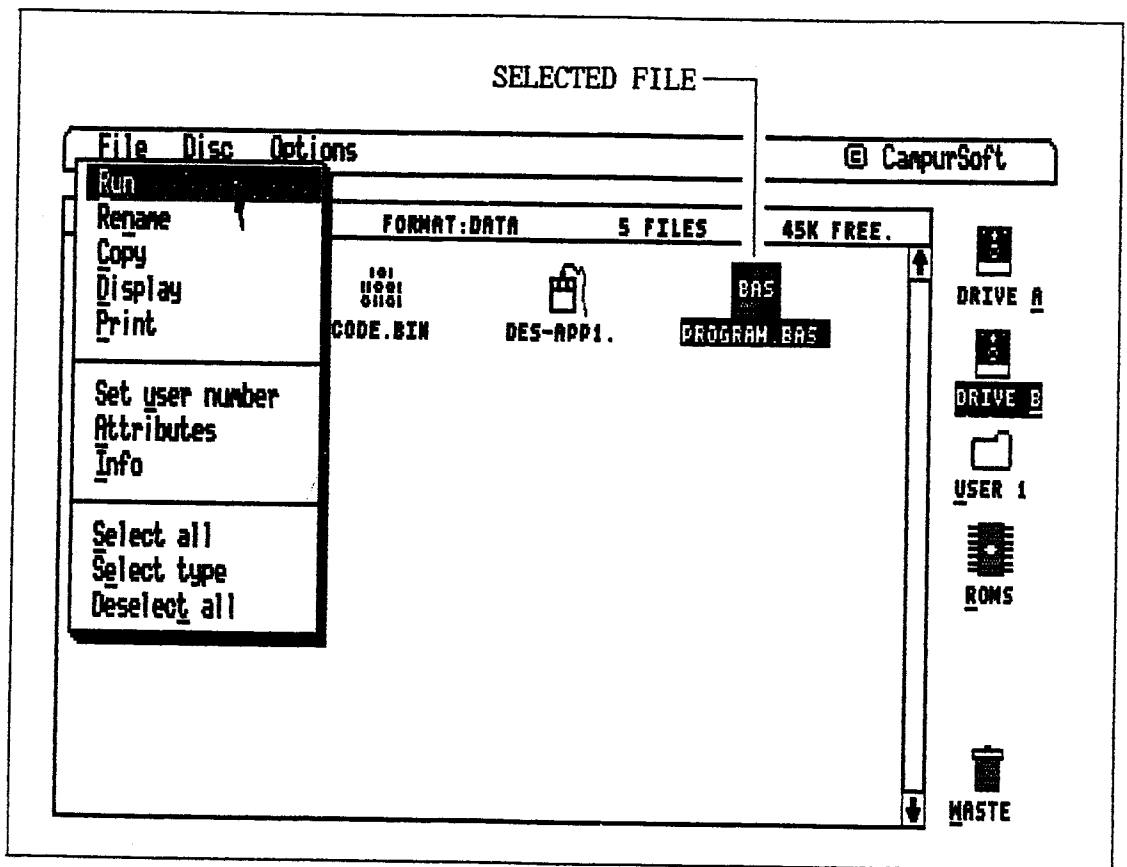About DES - Displays copyright information
Exit - Return to BASIC

5: FILE MENU

The File menu contains a set of options which operate on files on the disc. Some of the options operate on single files only, whilst others can perform operations on multiple files.

Run

This loads and runs a program, just like the BASIC RUN"filename" command.

If the selected file is Basic or Binary, the screen will clear, and a "Please wait..." message will be displayed. The file will then be loaded and run. If an error occurs during loading, the message "Error whilst loading program: press ESC to return to DES" will be displayed. Pressing ESC will take you back to the DES desktop.

SELECTED FILE

File	Disc	Options			© CampurSoft

| Run |
| Rename |
| Copy |
| Display |
| Print |
| Set user number |
| Attributes |
| Info |
| Select all |
| Select type |
| Deselect all |

FORMAT:DATA   5 FILES   45K FREE.

CODE.BIN   DES-APP1.   PROGRAM.BAS

DRIVE A

DRIVE B

USER 1

ROMS

WASTE

DES will not allow you to run a binary file with no execution address or a text/data file.

Rename

The difference between this and the AMSDOS |REN command, apart from being easier to use, is that it allows you to rename more than one file at a time.

Once you have selected the file(s) you want to rename, choose FILE|RENAME. You will then be prompted to enter a new name for each file. Note that at any time, pressing ESC will abort this process and leave the disc unaltered.

Simply enter the new name in the "Rename as:" text box. If you enter an invalid file name, you will be told so, and you'll have to change the name. If the new name you type already exists, then an error message will be displayed and you will have to change the name.

When all the selected files have been renamed, the disc will be altered, and re-scanned.

Copy

This option is used to copy a file or files from one disc to another. You can copy from one disc to another in the same drive, or to a disc in the other drive, if you have two disc drives.

FILE COPYING OPTION SELECTED   ┌─ FILES SELECTED FOR COPYING
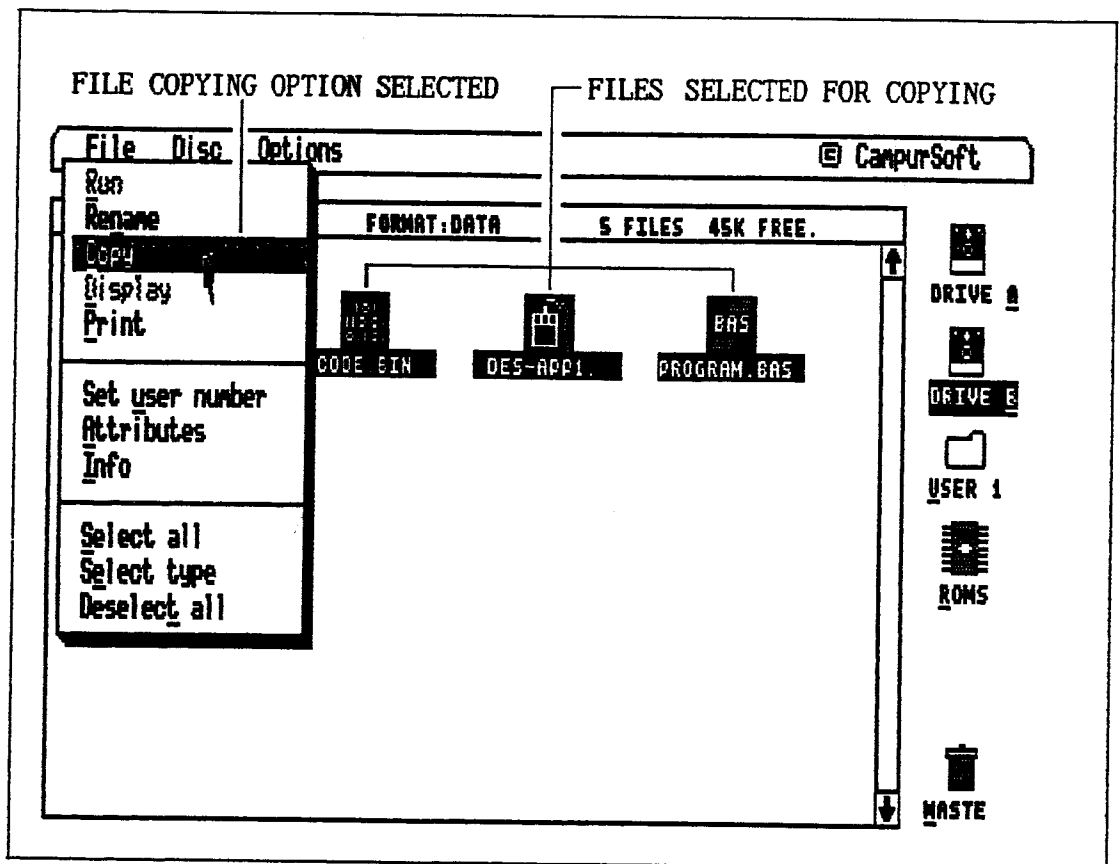
Note that DES can copy files from AMSDOS discs to ROMDOS discs and vice versa, as well as from one ROMDOS disc to another. The size and memory location of the file doesn't matter - DES will always copy it, without complaint.

DES refers to the disc which the original file is on as the SOURCE disc. The disc which you are copying the file onto is called the TARGET disc.

When you copy a file, it will be copied to the same user number on the target disc as the source disc; i.e. if you are copying a file in user 1 on the source disc, it will be copied into user 1 on the target disc. However, DES also lets you copy a file to a different user area, so you could copy a file from user 1 on the source disc to user 0 on the target disc.

To copy a file (or files) you must first select all the files you wish to copy, and then choose FILE|COPY. You will then be given the option of setting the target drive, by selecting the radio button for either drive A or drive B. You can also set which user number the files will be copied into on the target disc, by entering a new value in the "Copy to user:" text box.

You are now ready to copy the file(s). Choose the "Ok" button to commence copying; if you don't want to copy the files, choose "Cancel", or press ESC.

If you are copying files from a disc to another disc in the same drive, you will be prompted to insert either the source or target disc as necessary - when you have inserted the disc you have been asked for, choose "Ok". You are advised to write-protect

SELECTED FILES FOR MULTIPLE COPYING

| File   Disc   Options | © CampurSoft |

☐ DRIVE B   USER 1   FORMAT:DATA   5 FILES   45K FREE.

DRIVE A

DRIVE B

ASCI

SCRE

Select drive to copy files to:

○ Drive A
◉ Drive B   Copy to user: [2]

[▶ Ok]   [Cancel]

USER 1

ROMS

WASTE
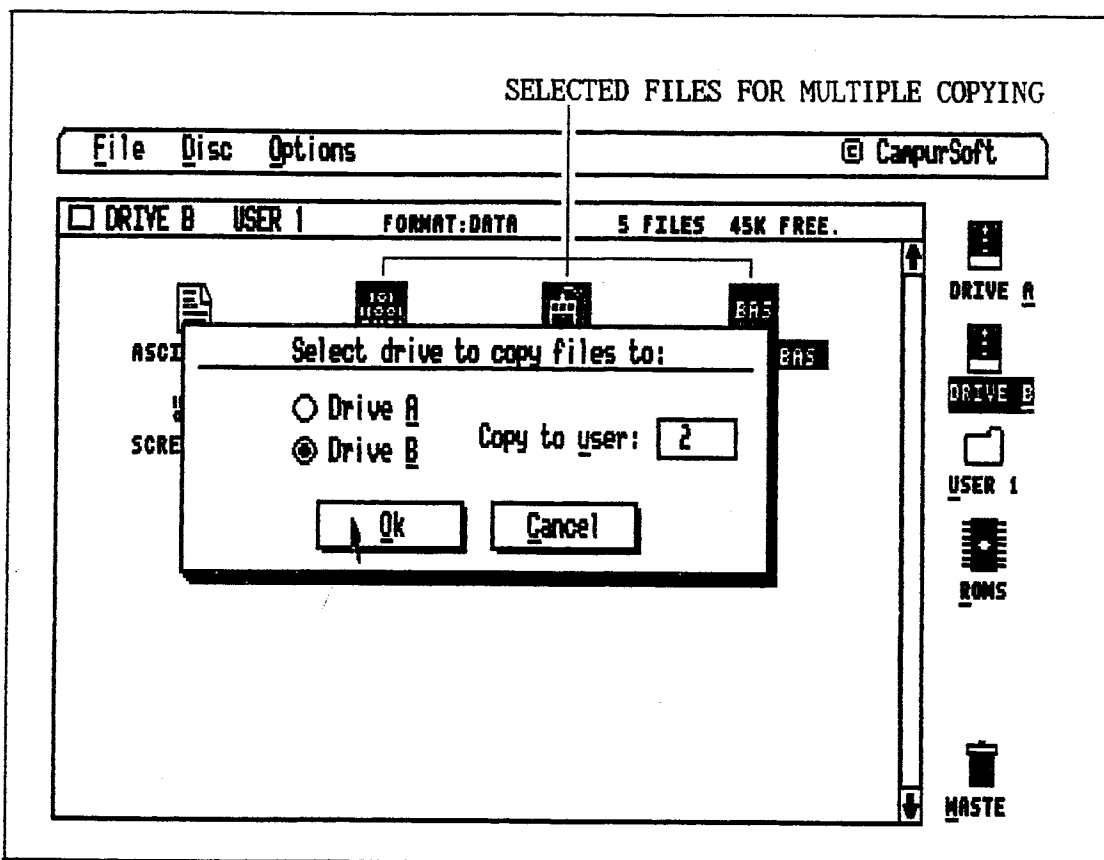
the source disc before copying files; although it is unlikely that any harm would be done to the source disc, it's best to be safe anyway.

If you are copying from a disc to a disc in the other drive, you will be prompted to insert the source and target discs in the relevant drives. When you have done this, choose "Ok" to go ahead with the copying.
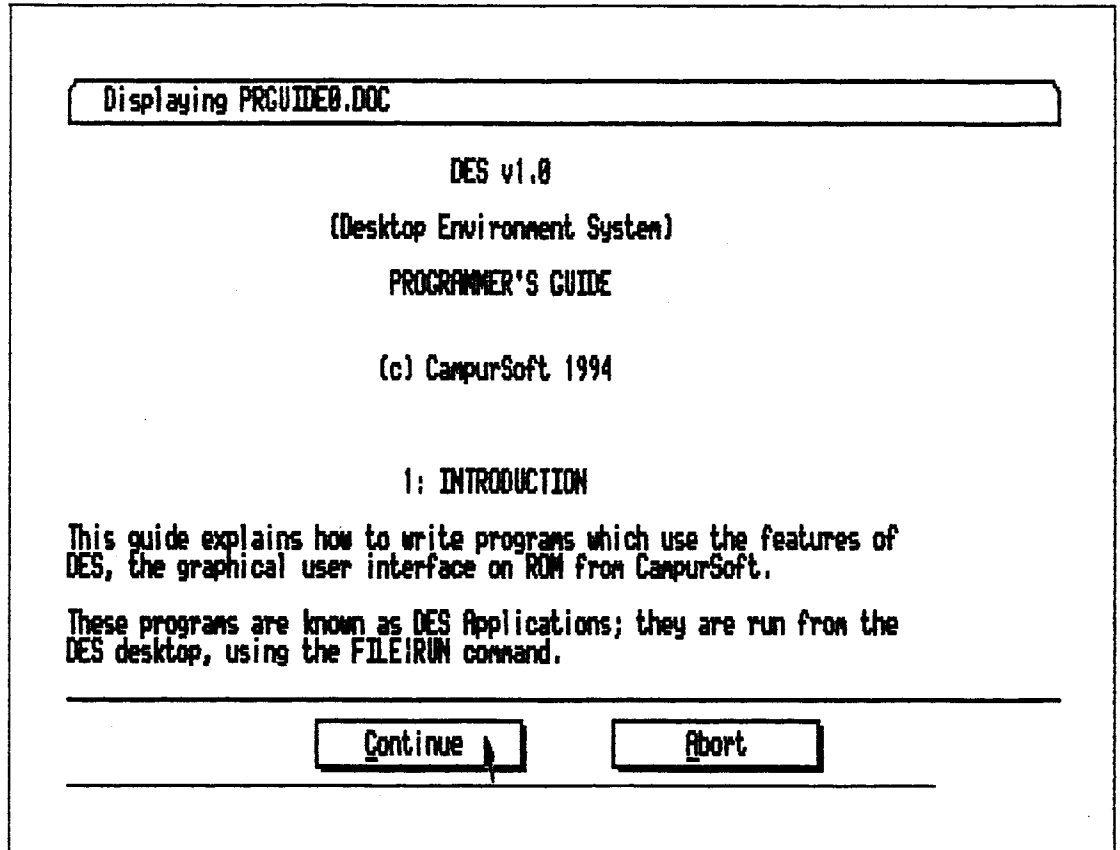
If, whilst copying files, DES runs out of space on the target disc, an error message will be displayed, and the copying process will be terminated. The file which was being copied just before the disc filled up will probably not be copied fully.

Display

This is used to display a text/data file on the screen, rather like the CPM TYPE command.

First, choose the file you want to display, then select FILE|DISPLAY. If the file you have selected is not a text/data file, an error message will be displayed.

The text file will now be displayed; the screen will clear, and the menu bar will show the name of the file. When the screen fills, two buttons will now be displayed - "Continue" and "Abort". Choose "Continue" to view the rest of the file, or choose "Abort" or press ESC to finish. When you reach the end of the file, the "Continue"

```
 ┌──────────────────────────────────────────────┐
 │ ┌──────────────────────────────────────────┐ │
 │ │ Displaying PRGUIDE0.DOC                    │ │
 │ └──────────────────────────────────────────┘ │
 │                                                │
 │                   DES v1.0                      │
 │                                                │
 │            (Desktop Environment System)         │
 │                                                │
 │             PROGRAMMER'S GUIDE                  │
 │                                                │
 │               (c) CampurSoft 1994               │
 │                                                │
 │                                                │
 │               1: INTRODUCTION                   │
 │                                                │
 │ This guide explains how to write programs which use the features of │
 │ DES, the graphical user interface on ROM from CampurSoft.           │
 │                                                │
 │ These programs are known as DES Applications; they are run from the │
 │ DES desktop, using the FILE|RUN command.        │
 │ ─────────────────────────────────────────────  │
 │   ┌──────────────┐      ┌──────────────┐       │
 │   │  Continue  │      │    Abort     │       │
 │   └──────────────┘      └──────────────┘       │
 │ ─────────────────────────────────────────────  │
 └──────────────────────────────────────────────┘
```

button will be dimmed, and you will only be able to select "Abort".

Print

FILE|PRINT is used to dump one or more text/data files to the printer, provided that you have a printer attached.

Once you have chosen the files you want to print, select FILE|PRINT. You will now be presented with the "Print Format" options. This allows you to set the format which printing will take.

At the top of the window there is a group of radio buttons, which allow you to choose between 11" (Listing) and 12" (A4) paper, and also Continuous printing or printing with top/bottom margins and page numbers. There are two text boxes, enabling you to change the page width and the size of the left margin - both values are in characters.

The final section takes care of printing style. You can set the printer to Pica, Elite or Condensed font by selecting the relevant radio button. If you don't want to send any of these setup codes - perhaps your printer doesn't support these, or you want to change settings using your printer's control panel - then de-select the "Send Epson control codes" check box.

To start printing the files, choose the "Ok" button; choosing "Cancel" or pressing ESC will abort the printing.

If the printer is off-line, disconnected or not turned on, an alert message will be displayed, telling you this. Either

```
┌──────────────────────────────────────────────────────────────┐
│  ┌── FILE SELECTED FOR PRINTING                                │
│  │                                                             │
│  ┌─────────────────────────────────────────────────────────┐  │
│  │ File  Disc  Options                      ⊞ CampurSoft  │  │
│  └─────────────────────────────────────────────────────────┘  │
│  ┌─────────────────────────────────────────────────────────┐  │
│  │ ☐ DRIVE B   USER 1     FORMAT:DATA    5 FILES  45K FREE. │  │
│  │                                                           │  │
│  │          ┌─── PRINT FORMAT ───────────────────┐          │  │
│  │  ASCII.TXT │                                    │          │  │
│  │            │  ◉ 11" paper   ◉ Continuous print  │          │  │
│  │            │  ○ 12" paper   ○ Print page numbers │          │  │
│  │  SCREEN.SCR│                                     │          │  │
│  │            │  Width of page (in columns):  [88] │          │  │
│  │            │  Left margin (in columns):    [4]  │          │  │
│  │            │                                     │          │  │
│  │            │   ☒ Send Epson control codes:       │          │  │
│  │            │  ◉ Pica    ○ Elite    ○ Condensed   │          │  │
│  │            │    [  Ok  ]      [ Cancel ]         │          │  │
│  │            └─────────────────────────────────────┘          │  │
│  └─────────────────────────────────────────────────────────┘  │
└──────────────────────────────────────────────────────────────┘
```

DRIVE A
DRIVE B
USER 1
ROMS
WASTE

remedy the problem, or choose "Cancel" to terminate the process.
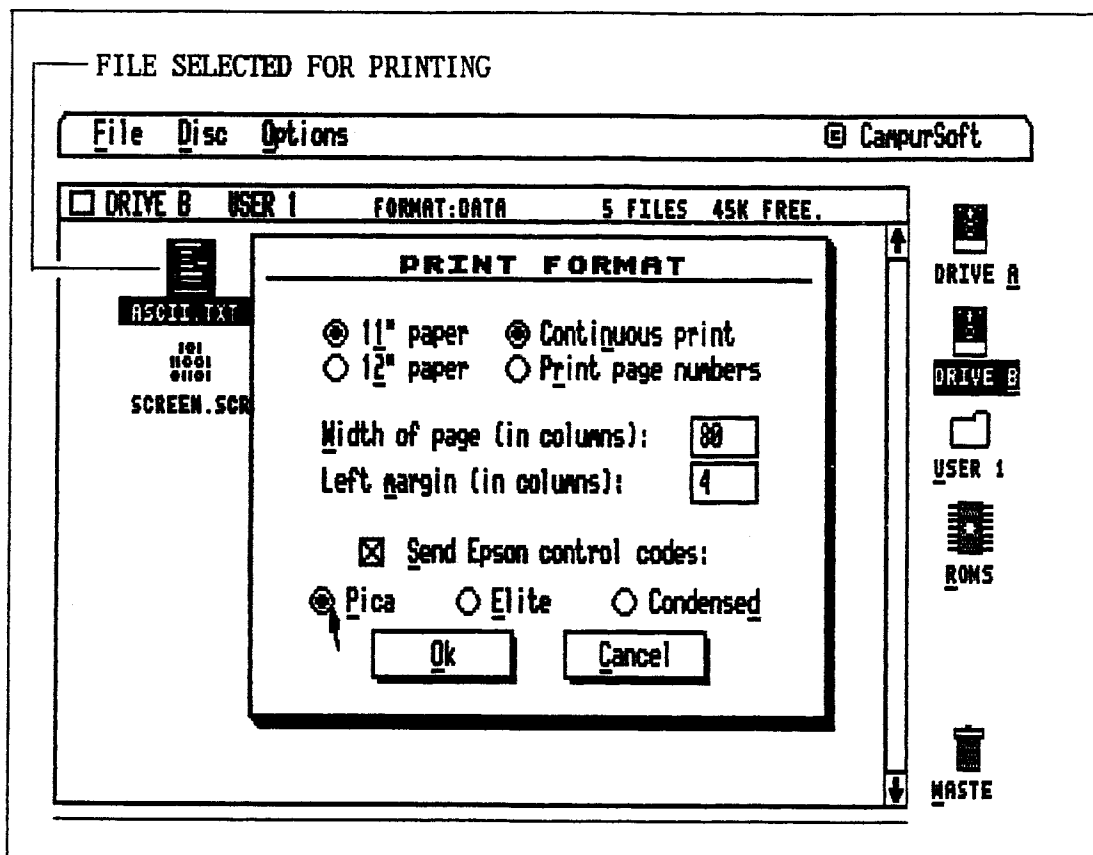
Set user number

This allows you to move a file or files from one user area to another. It is probably more useful for organising files on ROMDOS high capacity discs, but it works perfectly well for AMSDOS discs as well.

Firstly, choose the file (or files) you want to change, then select FILE|SET USER NUMBER. Enter the user number you are moving the files to in the "Send file(s) to user number:" text box.

When you are ready to go ahead, select the "Ok" button; if you don't want to go ahead, choose "Cancel" or press ESC.

The files will now be moved to the desired user number; note that you won't be able to move a file if a file of the same name already exists in the new user area.

Attributes

This sets the read and write status of a file or set of files. It performs a similar function to CPM's STAT command, or the |ACCESS command in Utopia.

After you have selected all the files you want to alter, choose the FILE|
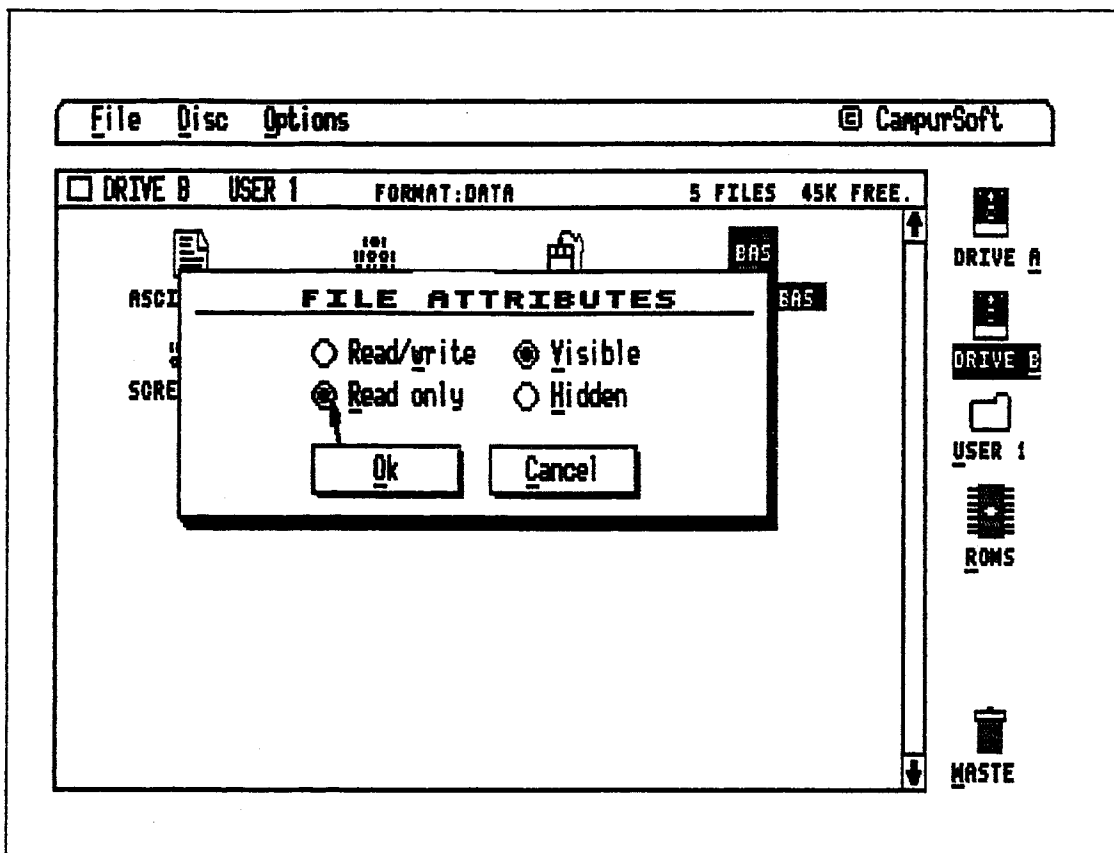
ATTRIBUTES option. You will be presented with a window containing a number of options.

The file status is set by clicking on the different radio buttons. The left-hand pair of buttons set the file to read/write or read-only. A read/write file can be loaded and saved normally. A read-only file can only be loaded, and not re-saved, or deleted through normal means, although it can be deleted by DES if you change the settings in OPTIONS|DES SETUP.

The right-hand pair of buttons is used to set the files to either Visible or Hidden. Visible files are ones that show up on a normal CAT or |DIR directory listing: hidden files do not normally show. DES can catalogue hidden files, if you set the relevant option in OPTION |DES SETUP.

Once you have set the radio buttons for the file status you want, select "Ok", and the changes will be made; select "Cancel" or press ESC to abort the process.

Info

FILE|INFO displays information about selected files. The information which is displayed is as follows:

- File icon + filename - Either "Read/Write" or "Read only", depending on file attributes.
- "Hidden" if the file has been set to Hidden status.
- File type: Basic, Protected basic, Binary, protected binary or Ascii data.
- Memory start address of file (in hexadecimal).
- Length of file in bytes (in hexadecimal).
- Execution address of file (in hexedecimal).
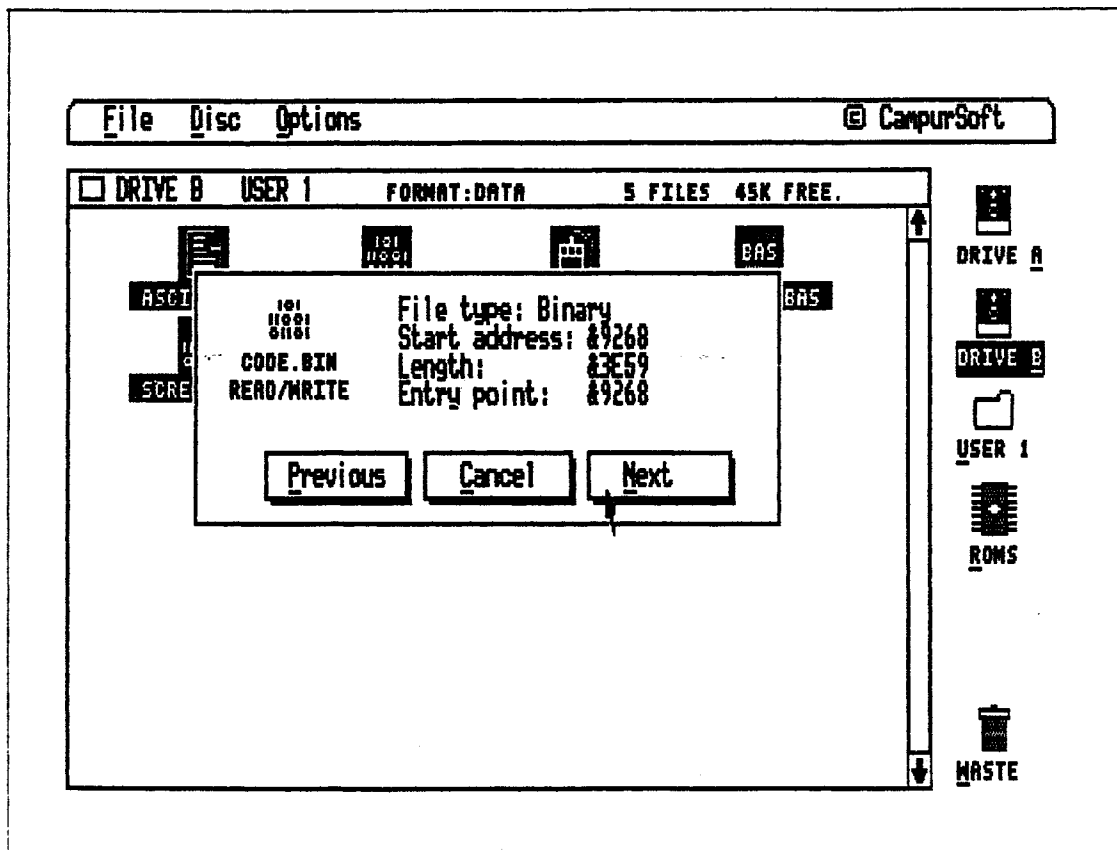
You can use the "Previous" and "Next" buttons to view the information for the previous or next selected files, if any are selected. Choose "Cancel", or press ESC, to finish.

Select all

This is a quick way of highlighting all the file icons - it saves you having to scroll up and down and click on every single icon.
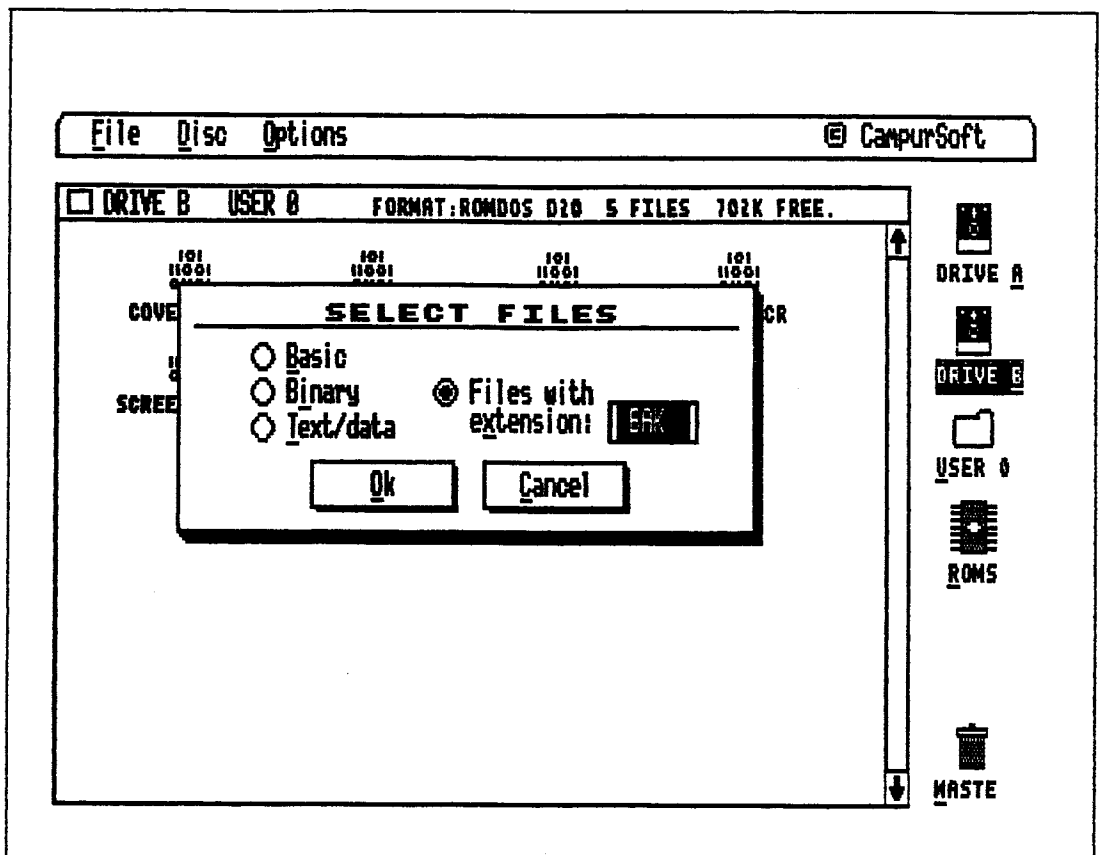
Select type

This selects all files of a specified file type, or with a specified extension.

Specify the file type you want to select by choosing the relevant radio button. If you don't want to select a file type, but want to select all files with a particular extension (e.g."BAK"), then select the "File with extension:" radio button, and enter the extension into the text box.

Choose "Ok" to select the files; choose "Cancel" or press ESC to cancel the process.

```
 File   Disc   Options                          © CampurSoft

  □ DRIVE B   USER 0      FORMAT:ROMDOS D10  5 FILES  702K FREE.      [A]
                                                                     DRIVE A
                                                                     [B]
        COVE         SELECT FILES         CR                         DRIVE B
              O Basic
        SCREE O Binary    ⊙ Files with                               USER 0
              O Text/data   extension: [BAK]
                                                                     ROMS
                 [ Ok ]      [ Cancel ]
                                                                     WASTE
```

Deselect all

The opposite of FILE|SELECT ALL - a quick way of de-selecting all previously selected file icons.
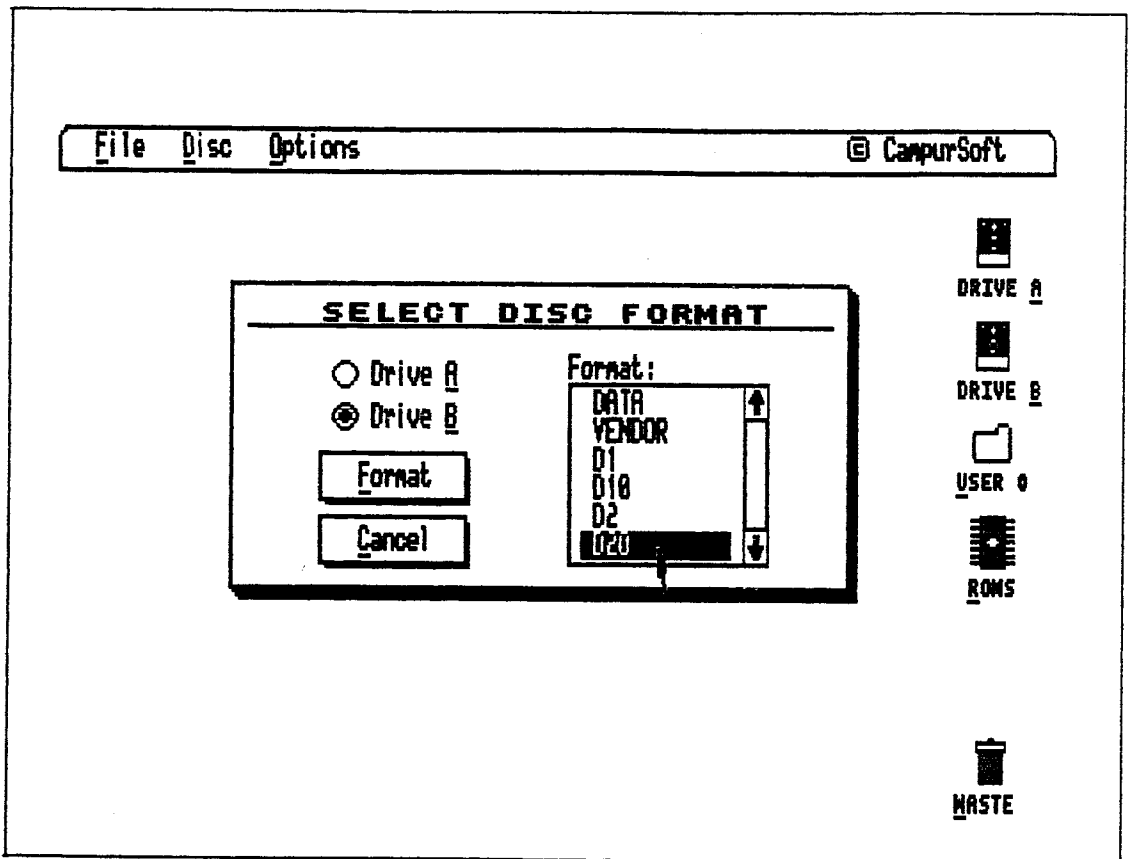
6: DISC MENU

This menu contains a number of options that operate on entire discs, without the need to "log in" a disc first.

Format

This provides a faster alternative to the CPM FORMAT command; it can format a disc to either data or vendor formats. It can also format a disc in drive B to a ROMDOS high capacity format - formats D1, D10, D2 and D20 are supported.

After choosing DISC|FORMAT, you will be presented with a window which is used to specify the drive and format.

Choose the disc drive you are going to use for formatting by clicking on either the "Drive A" or "Drive B" radio buttons. Choose the format you want the disc to be by selecting it in the "Formats" list box. Choose the "Format"

button when you are ready to start formatting; choosing "Cancel" or pressing ESC will abort.

DES will now display the disc drive and format that it is going to use, and asks you to confirm this. If you are not sure, choose "Cancel", as formatting erases everything on the disc, and it cannot be recovered.
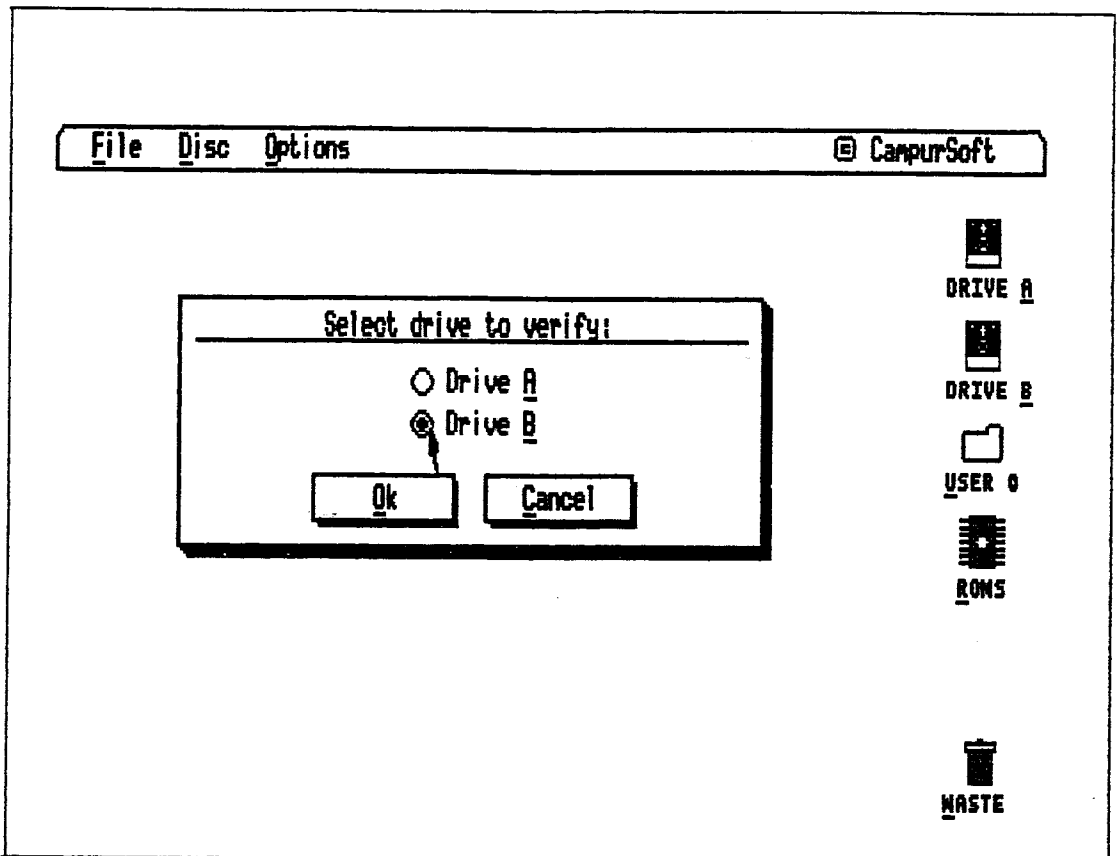
If you choose "Ok", then formatting will commence. A percentage completed indicator is displayed as formatting takes place. You can press ESC at any time during formatting to stop the process.

Verify

This checks a disc for errors. After you specify which drive you want to check, the disc will be scanned; a percentage completed indicator is displayed, and pressing ESC will abort the verifying.

If the percentage indicator slows down drastically, it may be because the disc has a lot of errors on it, and will take ages to scan through. Press ESC to abort if this takes too long.

When verifying has finished, an alert message will be displayed telling you how many bad sectors were found on the disc.

```
┌──────────────────────────────────────────────────────────────────┐
│                                                                    │
│                                                                    │
│  ┌ File   Disc   Options                       Ⓔ CampurSoft ┐      │
│                                                                    │
│                                                         ▣          │
│                                                      DRIVE A       │
│                                                                    │
│            ┌─────────────────────────────┐          ▣             │
│            │   Select drive to verify:    │       DRIVE B          │
│            │  ───────────────────────     │                        │
│            │       O Drive A              │          ▭             │
│            │       ⦿ Drive B              │       USER 0           │
│            │                              │                        │
│            │    ┌ Ok ┐    ┌ Cancel ┐      │          ▦             │
│            │    └────┘    └────────┘      │        ROMS            │
│            └─────────────────────────────┘                        │
│                                                                    │
│                                                          ▮         │
│                                                       WASTE        │
└──────────────────────────────────────────────────────────────────┘
```

Copy

This copies an entire disc, byte for byte, to another disc. DES uses a data compression technique to minimise the number of disc swaps; even so, copying can still take quite a while on a single-drive 64k machine.

After selecting DISC|COPY, a window will appear, with options enabling you to specify the source and target disc drives. To set the source drive (the drive you are copying from), choose "Drive A" or "Drive B" from the left-hand set of radio buttons. To set the target drive (the drive you are copying to), choose from the right-hand set of radio buttons.

It is advisable to write-protect the source disc, just in case you get the two discs mixed up; when copying discs, accidents could be fatal!

When you have specified the drives, choose "Ok" to commence disc copying; to abort, choose "Cancel" or press ESC.

If you are copying from one drive to another, you will now be prompted to insert the source and target discs in the relevant drives; once you have done this, click on "Ok" to start copying. A percentage completed indicator is displayed as copying takes place; once again, holding down ESC will abort the process.

If you are copying from one disc to another disc in the same drive, you will be prompted to insert the source and target discs as required. Make sure that you insert the correct disc, and remember to write-protect the source disc before starting.
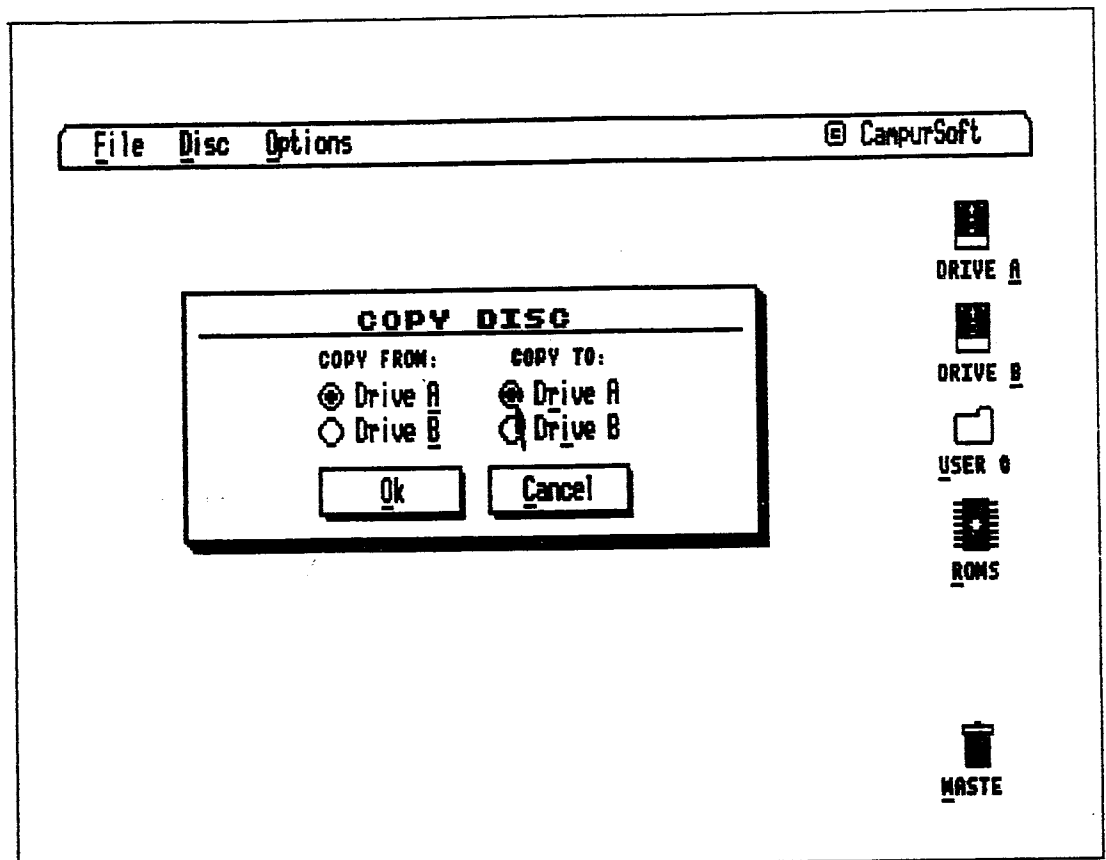
Note that the target disc will have to be of the same format

```
┌──────────────────────────────────────────────────────────────────┐
│  ╭─────────────────────────────────────────────────╮      ▓       │
│  │  File  Disc  Options          ⊟ CampurSoft  )            │
│  ╰─────────────────────────────────────────────────╯    DRIVE A   │
│                                                            ▓       │
│                                                         DRIVE B    │
│         ╭─────────────────────────────────╮               ▢       │
│         │        COPY DISC                 │            USER 0     │
│         │  ─────────────────────────       │               ▤       │
│         │  COPY FROM:      COPY TO:         │            ROMS      │
│         │  ◉ Drive A      ◉ Drive A        │                      │
│         │  ○ Drive B      ○ Drive B        │                      │
│         │  ┌───────┐      ┌────────┐        │              ▮       │
│         │  │  Ok   │      │ Cancel │        │            WASTE     │
│         │  └───────┘      └────────┘        │                      │
│         ╰─────────────────────────────────╯                       │
└──────────────────────────────────────────────────────────────────┘
```

as the source disc. If it is unformatted, or of a different format, DES will automatically reformat the disc for you. You will be asked to confirm the formatting, just as you would with the DISC|FORMAT option.
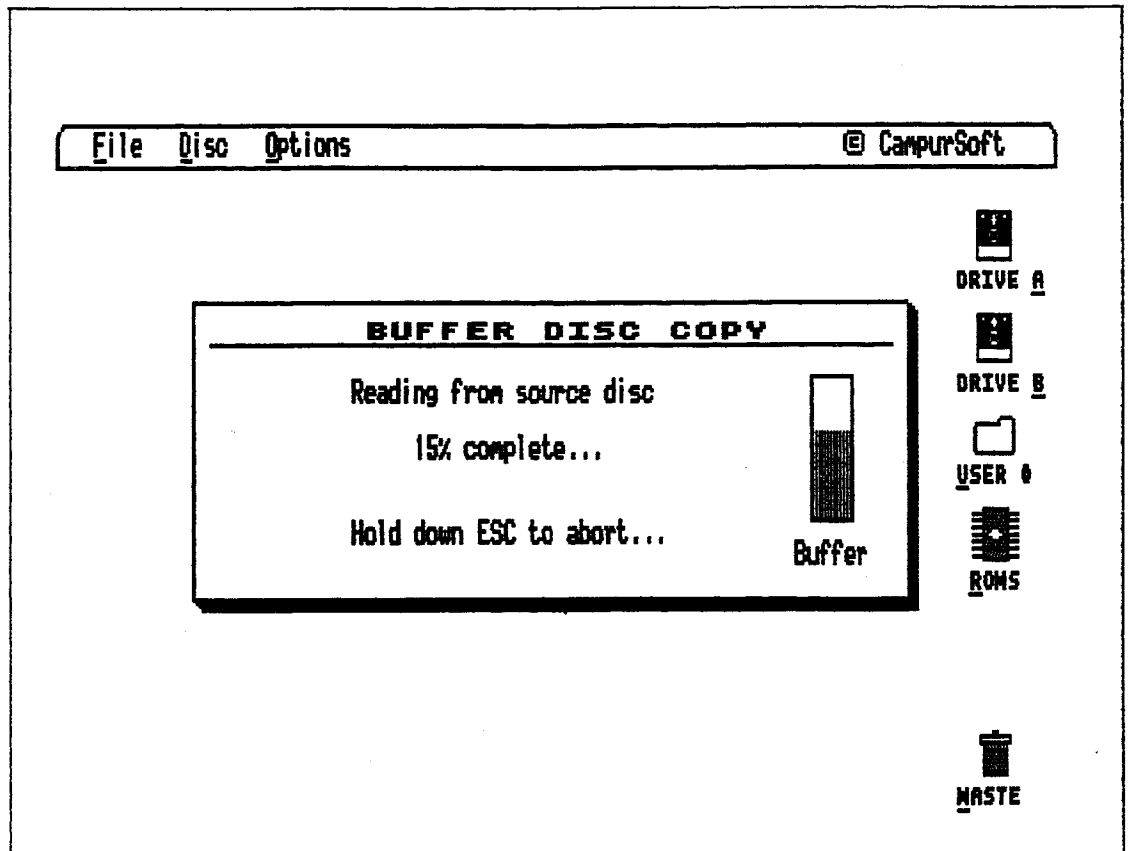
Copy B: with buffer disc

This is used for copying ROMDOS high capacity discs in drive B. It can take a long time and a lot of disc swapping, especially with a 64k computer, to copy an 800k ROMDOS disc. This option uses a disc in drive A as a buffer, reducing the number of disc swaps.

When you select this option, you are first prompted to insert the buffer disc in drive A and the source disc in drive B. The buffer disc is just a blank 3" disc. Make sure that there is nothing important on this buffer disc, as it will be wiped completely during the copying process.

Once you have inserted the discs and selected "Ok", the copying will begin; progress is shown by the a percentage completed indicator. Data will be read from the disc in drive B, and written to the buffer disc in drive A. You can press ESC at any time if you want to abort the copying.

When the buffer fills up, as indicated by the graph, you will be asked to insert the target disc in drive B. The data on the buffer disc will then be copied onto the target disc, and the graph will show the buffer emptying.

```
┌─────────────────────────────────────────────────────────────┐
│  ┌──────────────────────────────────────────────┐           │
│  │ File  Disc  Options              © CampurSoft │           │
│  └──────────────────────────────────────────────┘           │
│                                                       [▓]     │
│                                                     DRIVE A   │
│         ┌──────────────────────────────────┐                 │
│         │      BUFFER DISC COPY            │        [▓]      │
│         │  ─────────────────────────       │      DRIVE B     │
│         │   Reading from source disc  ┌──┐ │                  │
│         │                             │  │ │       [□]       │
│         │      15% complete...        │▓▓│ │      USER 0      │
│         │                             │▓▓│ │                  │
│         │   Hold down ESC to abort... │▓▓│ │       [▒]       │
│         │                       Buffer└──┘ │      ROMS        │
│         └──────────────────────────────────┘                 │
│                                                       [▓]     │
│                                                     WASTE     │
└─────────────────────────────────────────────────────────────┘
```

This will be repeated a number of times.

Archive disc to tape
─────────────────────

This simply makes a tape backup of a disc. It is perhaps more useful for the AMSDOS disc formats (i.e. DATA and SYSTEM/VENDOR), because it would take hours to dump an entire ROMDOS 800k disc to tape.

Firstly, you will be asked which drive the disc you want to archive is in. Choose this by selecting either the "Drive A" or "Drive B" radio buttons, select "Ok" when you're ready; "Cancel" (or pressing ESC) will abort the archive.

You will now be prompted to "insert a blank tape in the tape deck and press REC and PLAY". Do this, then choose "Continue" to start the archive.

As the archive is being made, a percentage completed indicator will be displayed; to abort the backup, hold down ESC. The archiver uses a compression technique to reduce the time taken to save the data.

You can change the tape speed write by choosing the appropriate option in OPTIONS|DES SETUP.

Archive tape to disc

Use this option to recover a disc image which you have created using the "archive disc to tape" option.

You will first be asked to

specify which drive you want to de-archive to. Select the drive by choosing either the "Drive A" or "Drive B" radio buttons. Click on the "Ok" button to continue, or select "Cancel" (or press ESC) to abort.

You will now be asked to insert a data tape and press PLAY; the tape should be positioned at the point where you started recording the backup data. Choose "Continue" to start de-archiving.

The first thing that DES does is check to see if the target disc is the correct format for de-archiving; if it isn't, the disc will be reformatted. The rest of the data is then read in from the tape, in blocks, writing each block to the disc in turn.
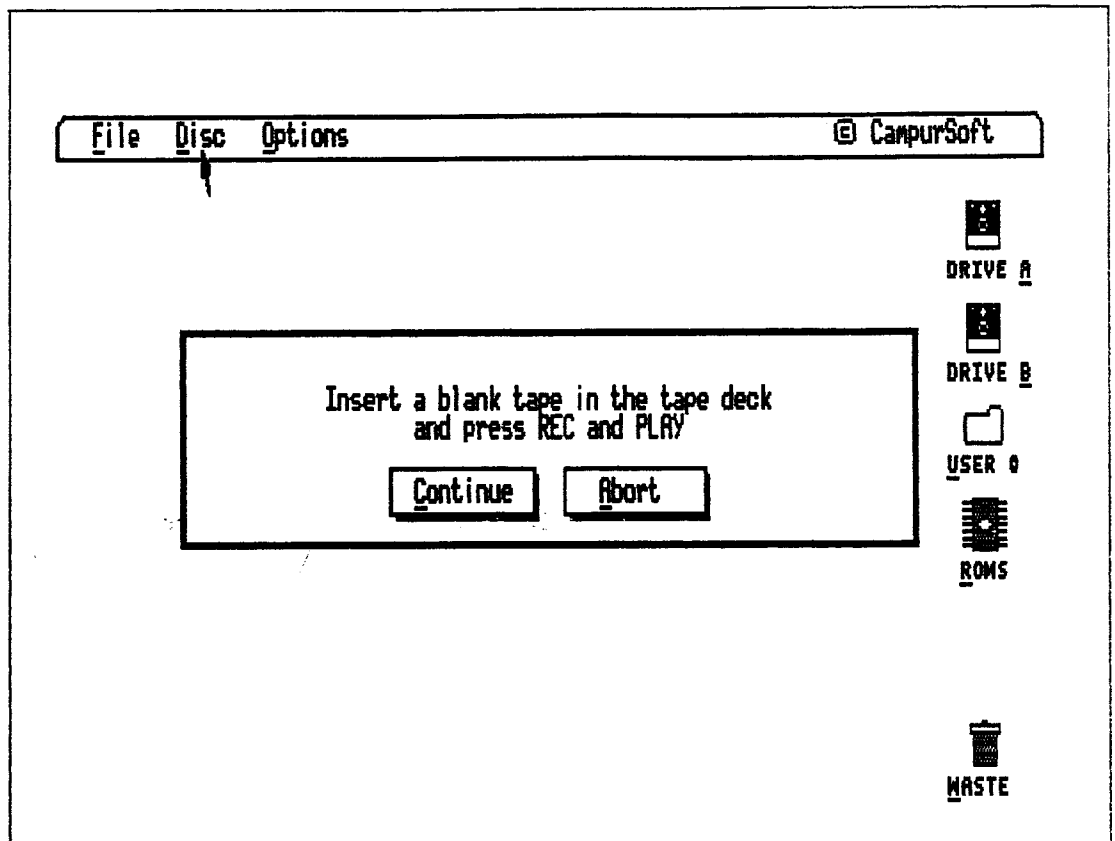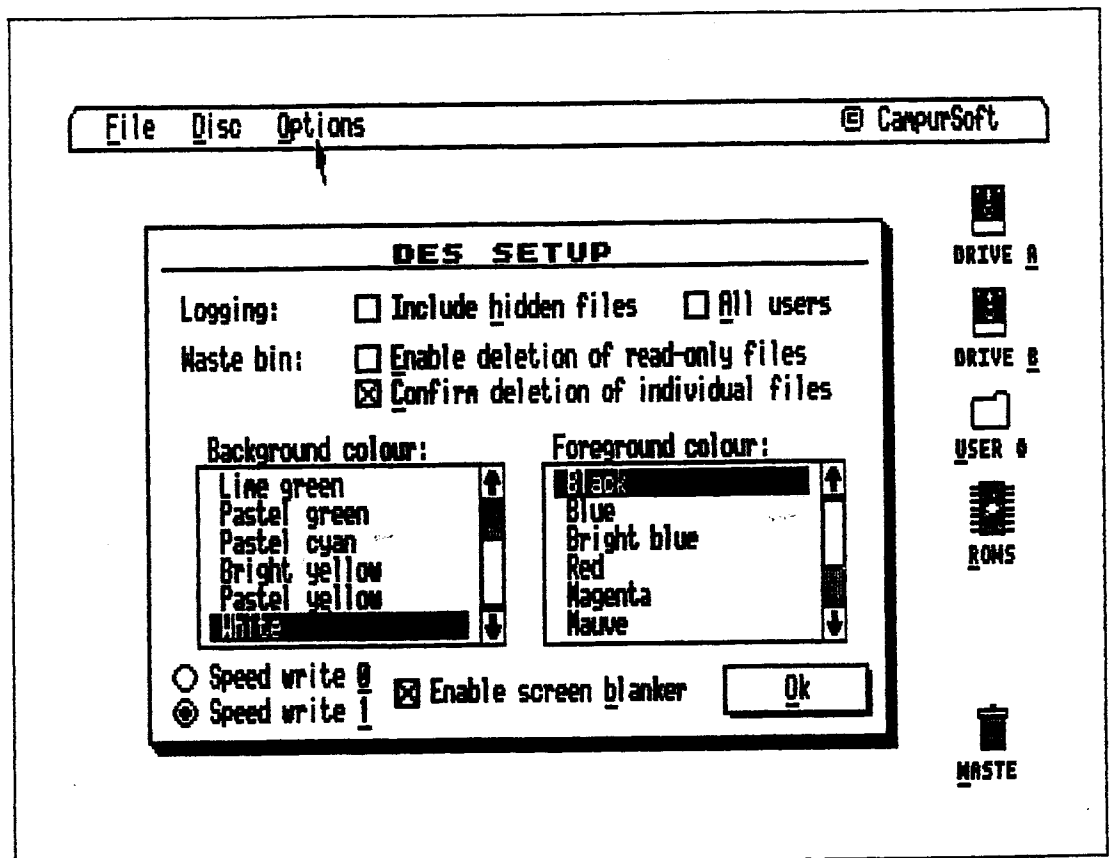
Run CPM

This option will run CPM, without the need to use the ROMS icon to execute the |CPM command.

Firstly, DES checks if the current disc is in fact a CPM system disc; if the disc is not SYSTEM format, an error message will be displayed and the option will abort. If all is well, DES will exit and CPM will be booted from the disc.

7: OPTIONS MENU

This menu contains a number of miscellaneous options, which can't be grouped under the "File" and "Disc" categories.

```
┌─────────────────────────────────────────────────────────────┐
│  File   Disc   Options                          © CampurSoft  │
├─────────────────────────────────────────────────────────────┤
│                                                               │
│                      DES  SETUP                               │
│                                                               │
│  Logging:      ☐ Include hidden files    ☐ All users          │
│  Waste bin:    ☐ Enable deletion of read-only files           │
│                ☒ Confirm deletion of individual files         │
│                                                               │
│  Background colour:              Foreground colour:           │
│  ┌──────────────────┐▲          ┌──────────────────┐▲         │
│  │ Lime green       ││          │ Black            ││         │
│  │ Pastel green     ││          │ Blue             ││         │
│  │ Pastel cyan      ││          │ Bright blue      ││         │
│  │ Bright yellow    ││          │ Red              ││         │
│  │ Pastel yellow    ││          │ Magenta          ││         │
│  │ White            │▼          │ Mauve            │▼         │
│  └──────────────────┘          └──────────────────┘          │
│  ○ Speed write 0                                 ┌──────┐     │
│  ◉ Speed write 1    ☒ Enable screen blanker      │  Ok  │     │
│                                                  └──────┘     │
└─────────────────────────────────────────────────────────────┘
```

DRIVE A

DRIVE B

USER 0

ROMS

WASTE

DES Setup

This function enables you to change certain settings of the program. These include colours, screen blanker, changing the way the waste basket works, and the disc scanning.

Logging:

This sets whether or not DES includes hidden files when it is scanning a disc. Hidden files will only be scanned if this check box is set; otherwise they will be ignored. It also sets whether or not DES should scan all user areas on the disc; if this check box is selected, then files from all users will be displayed, instead of just one user number. When this is set, you cannot enter a user number with the "User icon" on the desktop.
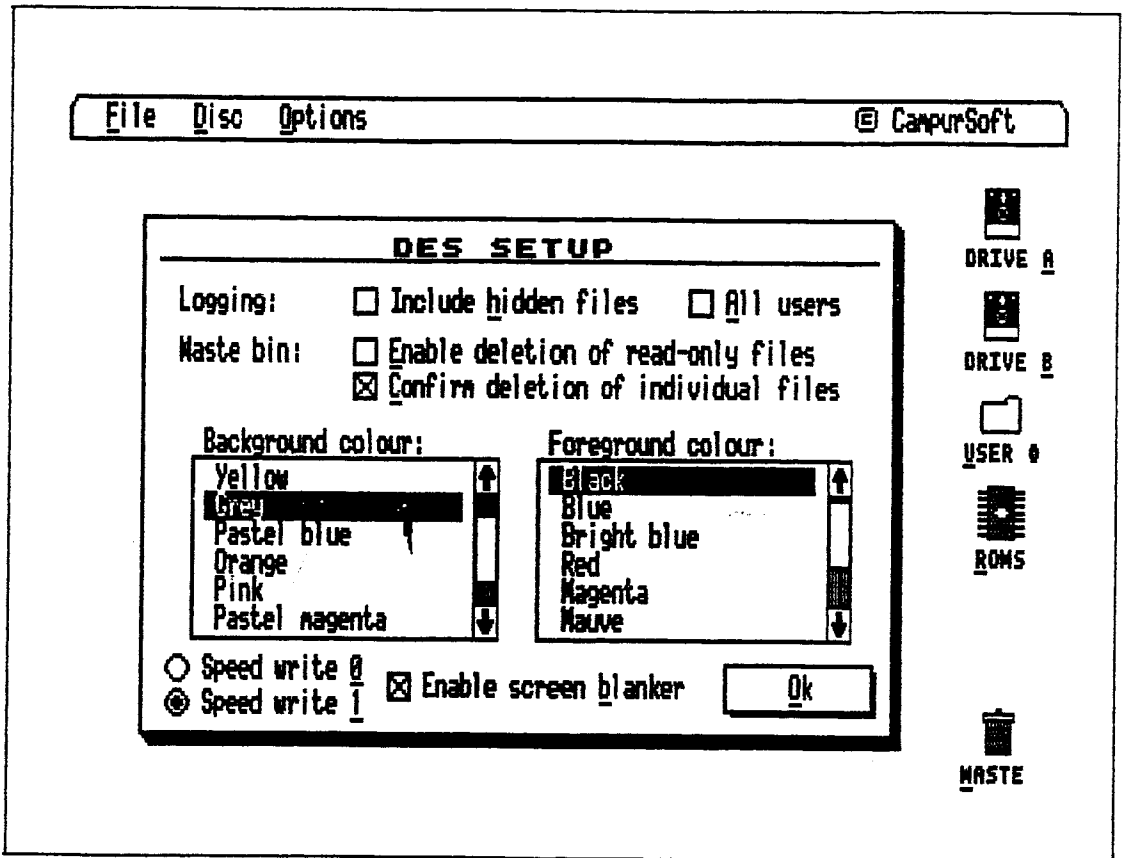
Waste bin:

This sets the way in which the delete function operates. Selecting "Enable deletion of read-only files" will enable DES to delete these files, instead of displaying a "Cannot delete this file: it is read-only" message.

De-selecting the second waste bin option will supress the confirmation message displayed before deleting each file.

Colours:

To set the DES colour scheme to your own personal preference, choose the desired colours from the "Background colour" and "Foreground colour" list boxes. The colours won't be changed until you are finished using OPTIONS|DES SETUP.

Tape save rate:

The tape save rate (for DISC|ARCHIVE...) is set by choosing either of the "Speed write" radio buttons. Speed write 1 is the fast rate, and speed write 0 is the slower (safer) rate.

Screen blanker:

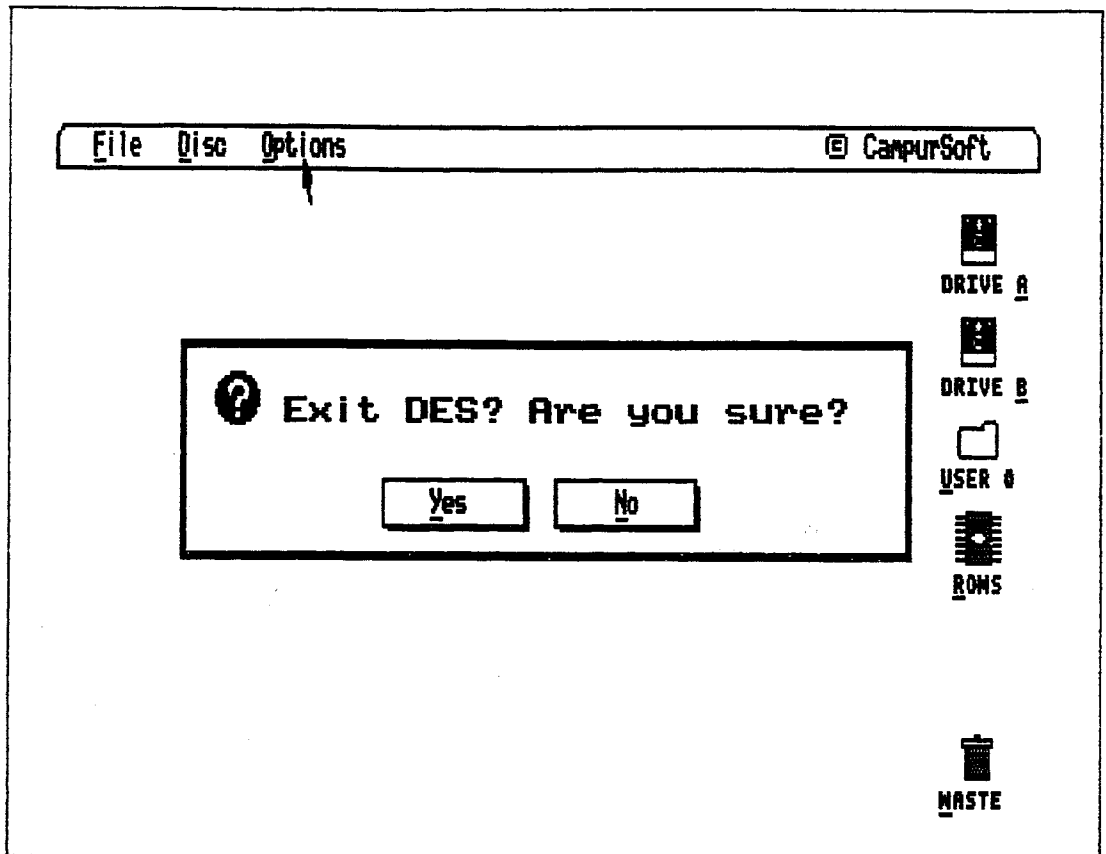De-selecting this will turn off the screen blanker.

"Ok" button:

Choose this when you have finished altering settings. Note that if you have set both the background and foreground colours to be the same, you won't be able to use the "Ok" button.

About DES

This simply displays copyright information about the program.

Exit

This quits DES and returns you to BASIC. You'll have to confirm your choice by choosing "Yes" from the alert box which is displayed. If you don't want to exit, choose "No".

```
┌──────────────────────────────────────────────────────────┐
│                                                          │
│  ┌─────────────────────────────────────────────────┐     │
│  │ File  Disc  Options              © CampurSoft  │     │
│  └─────────────────────────────────────────────────┘     │
│                                              ▓            │
│                                             DRIVE A       │
│                                              ▓            │
│  ┌──────────────────────────────────────┐  DRIVE B       │
│  │ ? Exit DES? Are you sure?            │   ▭            │
│  │                                      │  USER 0         │
│  │    ┌──────┐     ┌──────┐             │   ▓            │
│  │    │ Yes  │     │  No  │             │  ROMS          │
│  │    └──────┘     └──────┘             │                │
│  └──────────────────────────────────────┘   ▓            │
│                                             WASTE         │
└──────────────────────────────────────────────────────────┘
```

8: DES APPLICATIONS

A feature of DES which hasn't been mentioned yet is the ability to write your own programs which use the DES WIMP routines.
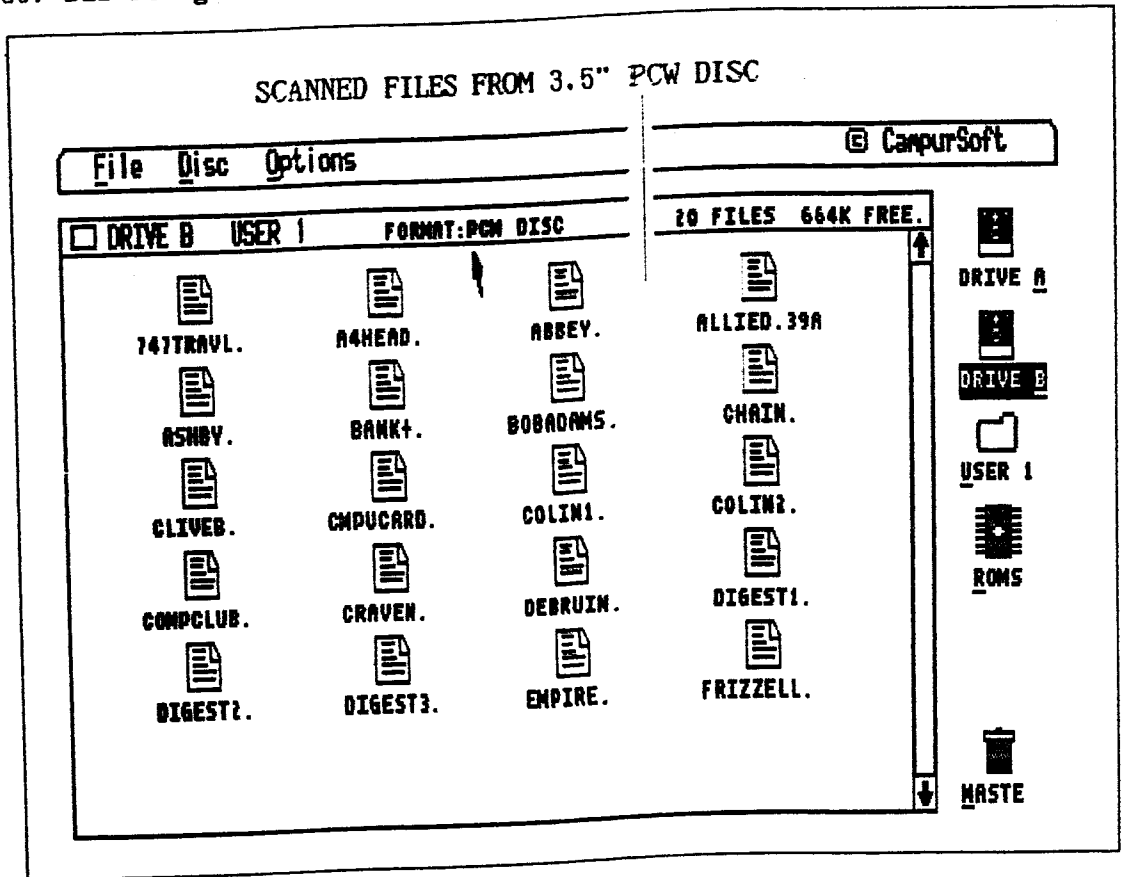
Such programs are known as "DES Applications", and have a different icon when the disc is scanned. These programs can only be run using FILE|RUN from the DES desktop.

Unfortunately, DES Applications have to be written in machine code, using an assembler. However, this is not too much of a disadvantage, as the DES routines actually make program writing easier, as all the input and output routines you could possible require are provided. All you have to do is write the processing part of the program.

9: PCW DISCS

If you have ROMDOS installed in your rombox, then you can use DES to transfer data to and from PCW discs. DES recognises PCW 173k discs in drive A and PCW 720k discs in drive B.

You can perform all of the options in the FILE and DISC menus on PCW discs, except for formatting discs to either of these formats. Also, two extra RSX commands are set up for handling a PCW disc in drive B from BASIC.

```
SCANNED FILES FROM 3.5" PCW DISC
                                              © CampurSoft
  File  Disc  Options

  □ DRIVE B   USER 1    FORMAT:PCW DISC    10 FILES  664K FREE.
                                                                 ▣
      ▤            ▤            ▤              ▤               ▤
    747TRAVL.    A4HEAD.      ABBEY.        ALLIED.39A      DRIVE A

      ▤            ▤            ▤              ▤               ▣
    ASHBY.       BANK+.      BOBADAMS.       CHAIN.          DRIVE B

      ▤            ▤            ▤              ▤               ▱
    CLIVEB.     CMPUCARD.     COLIN1.        COLIN2.         USER 1

      ▤            ▤            ▤              ▤               ▦
    COMPCLUB.    CRAVEN.     DEBRUIN.       DIGEST1.         ROMS

      ▤            ▤            ▤              ▤
    DIGEST2.    DIGEST3.      EMPIRE.       FRIZZELL.

                                                             🗑
                                                            WASTE
```

[PCWB   - sets up the B-drive to PCW 720k format. You can use this to load files from PCW discs into your word processor.

[NORMB - returns the B-drive to normal, i.e. auto format detection.

Please note that DES does not enable you to run PCW programs. It is primarily for the transfer of data between the two formats, as well as allowing you to perform the DES file/disc operations on such discs.