

# 3S

## *Graf Draw*

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### Operating Instructions & User Guide

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## 1.1 Overview

GrafDraw is a suite of software devised as a tool in the production of graphic output on paper or on screen for demonstrations, advertisements, video titles, diagrams, plans and so on. GrafDraw provides simple creation or editing facilities on graphic pages, which may be printed, displayed in a running demonstration or video recorded. GrafDraw is powerful, yet simple to use for both new and experienced computer users. GrafDraw is menu-driven, and has many special functions to take full advantage of the Einstein's graphic capabilities. The system can also use files created by other packages.

## 1.2 Using This Manual

This manual is sub-divided into the following sections:

- Chapter 1, "Introduction to GrafDraw," describes GrafDraw and how to get started.
- Chapter 2, "GrafDraw Reference," describes GrafDraw's facilities in detail and how to use them.
- Chapter 3, "Learning GrafDraw," teaches you how to use GrafDraw by means of examples.
- Chapter 4, "Technical Details," describes how to customise your system and how to include pages into your own programs.

## 1.3 Starting Up

### VERY IMPORTANT

Before using GrafDraw, you should first backup your GrafDraw disk, using the method described in your Einstein MOS/DOS manual. Please note that GrafDraw is copy protected, and will only start running from the supplied disk. If your master disk becomes corrupted, simply re-format it and copy GrafDraw back to it from your backup. NOTE that it is not possible to start the program from any disk to which the programs are copied.

If you do not have a standard EPSON compatible printer, or you wish to change the screen colours, you may re-configure your system at any time (Chapter 4).

To start GrafDraw, insert your master disk in drive 0, and press CTRL+BREAK. The main menu will load, and you are ready to use GrafDraw.

### 2.1 Main menu

To access all of the functions provided by GrafDraw, a menu is provided. Select the option required by simply pressing the appropriate key, 0 to 7. The options available are as follows :

- 0 - End GrafDraw.
- 1 - Page/Font Directory.
- 2 - Prepare a page.
- 3 - Prepare a font.
- 4 - Print page(s).
- 5 - Demonstration mode.
- 6 - Convert Data files.
- 7 - Delete Page/Font.

Once you have selected the option you require, it will be loaded from your program disk. (You may replace the program disk with a data disk or a backup of your program disk after the option has loaded). Option 0 will return you to the disk operating system. When you have finished using an option, you will return to the main menu. Option 1 simply lists the existing GrafDraw files on the selected disk.

### 2.2 Preparing Pages (Option 2 on the main menu)

#### 2.20 Overview

GrafDraw uses a system of pages in its printing and demonstration options. A page is one screen of graphics or text. Each page is prepared in this section. There are several modes for making up a page, each performing a different graphic function, these modes are described in the following sections. All of the functions are accessed by means of pop-up menus, these menus are called up with the function keys at the top of the keyboard. Pressing F0 calls up the main menu from which you may access the rest of the menus. To change mode, press F2 and select the required mode. To quit from the prepare page option, select Quit Prep from this main menu. To select items on the menu, use the up/down arrow keys to invert the option you require and then press the ENTER key. To exit from a menu, press the ESC key. The current status is shown on the bottom line of the screen.

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## 2.21 Headings/Titles

This is the main mode in this option, allowing you to produce characters of any size in a selected pattern and at a selected angle.

When you call up this option, you are automatically put into this Character mode. On the screen, you will see four flashing points. These represent the four corners around the character, and is referred to as the cursor. When you press a normal key, the character will be drawn within this cursor. You may move the cursor about with the arrow keys. If you hold the GRAPH key together with the arrow key, the cursor will move by a small amount in the appropriate direction. The coordinates of the left hand corner of the cursor are displayed on the status line. The width and height of the cursor are also displayed after W: and H: respectively, as the appropriate number of screen points. These points are known as pixels.

To change the cursor, and therefore the character size, hold the CTRL key while pressing the appropriate key from the following list:

- Q - Reduce the width by 5 pixels.
- W - Increase the width by 5.
- E - Reduce the width by 1.
- R - Increase the width by 1.
- X - Reduce the height by 5.
- S - Increase the height by 5.
- Z - Reduce the height by 1.
- A - Increase the height by 1.

The characters are displayed according to the currently selected shade mode, the different shades are selected from the shade menu, (called with F3). The solid shade displays a solid character, the Clear shade clears the area the character will cover, and draws its outline. Selecting Hollow means that only the outline of the character will be drawn. Similarly, the outline type may be selected from the line type menu (F5).

The angle of the character may be selected from the character style menu, this may be either Horizontal, Vertical, Italic, or plus or minus 45 degrees. To get other angles, the cursor size may be inverted by reducing the size below zero.

Also on the character style menu are options to cover or overlay characters. The cover option means that when the character is printed in a shade, the pattern behind is removed, when overlay is selected, the pattern behind is not removed (thus clear shading becomes equivalent to hollow shading).

The overlay option provides the ability to shade over areas, this is done by positioning the cursor over the area to shade, and holding GRAPH while pressing the SPACE bar.

Together with the ability to create these 'thick' characters, there is wire mode. This operates in a similar manner, except that the characters are made up of lines. GRAPH+SPACE in this mode produces a box.

The colour of the characters may be selected with the Graphics colour from the colour menu (F4).

These modes are selected from the mode menu (F2) or, with SHIFT+F2 for character mode, and SHIFT+F3 for wire mode.

## 2.22 Text

This mode allows you to put normal Einstein text onto the screen. There are two modes, 40 column or 32 column. These modes are accessed via the mode menu (F2), or SHIFT+F5 for 32 column mode and SHIFT+F6 for 40 column mode.

A small box cursor represents the current position. The cursor may be moved around the screen with the arrow keys. Pressing CTRL+A takes you to the start of a line, and CTRL+B takes you to the end of the line. Pressing ENTER will take you to the next line. The cursor position is displayed on the status line.

Any other character will be printed at the current position in the current font and text colour. The font is loaded from the file menu (F1), please note that most of the fonts provided are configured for 32 column text and will be chopped off at the right if used in 40 column mode. The standard Einstein 40 column font is provided in file 40CFONT.

To change the text colour select Text from the colour menu (F4) and the select the colour for the text, then for its background.

## 2.23 Graphics

This mode provides for drawing pictures onto the page. The mode uses two cursors, a cross cursor and a marker cursor. To select graphic mode, use the mode menu (F2) or SHIFT+F6. To move the cursor, use the arrow keys for normal horizontal and vertical movement, and the underscore, colon, quarter and three quarter keys to move diagonally. You may also swap the cursor with the marker by pressing W. To move the marker to the current cursor position, press M. The current coordinates are displayed on the status line.

To draw a line between the cursor and the marker, press L. To draw a line and move the marker at the same time, press Z. The line is drawn in the type selected from the line style menu (F5).

To draw a box, press B. The box is drawn between the marker and the cursor in the current line style.

To draw a circle, press C. The circle is drawn with the marker as the centre, and the cursor at the radius. Pressing H also draws a circle, but it is shaded in the current shade mode.

To invert an area, press I. The area boxed in between the cursor and marker will be inverted.

Within this mode there are four more modes, Draw, Undraw, Spray and Reverse, selected by pressing D,U,S and R respectively. The current mode is displayed on the status line as either D,U,S or R. To use them, hold the GRAPH key while moving with the arrow keys, or with the SPACE key. When in draw mode, the point under the cursor will be plotted, when in undraw mode, the point under the cursor will be unplotted, in spray mode, the area around the cursor will be randomly sprayed, and in reverse mode, the point is inverted. The thickness of the dot drawn in D or U modes is indicated on the status line after T:.

To change the thickness, use CTRL+W to increase, and CTRL+Q to decrease. To fill an enclosed area, position the cursor in the area and press F. All drawing is done in the currently selected Graphics colour (F4).

## 2.24 Utility functions

Together with these modes, there are several functions to aid the creation of your page. For example, to clear areas, to move areas around the screen and so on. The following is a list of utility functions:

### **Zoom Mode**

This allows you to 'zoom' into an area and modify the points in that area. This is done by pressing SHIFT+F7 in any mode, or by selecting Zoom from the mode menu (F2). On selecting this mode, the area is blown up, and a small copy of the area is displayed on the left. A cursor is shown over the current point, which is moved with the arrow keys. To toggle a point on or off, press the SPACE bar. To finish this mode and put the modifications onto your page, press ENTER or ESC. The area zoomed in on is that above and right of the bottom left corner of the cursor in the current mode.

### **Area functions**

These functions may only be carried out when in character/wire mode, and with horizontal characters. To clear the area surrounded by the cursor, press CTRL+C. To invert an area, press CTRL+I. To move areas, a Get/Put facility is provided. By pressing CTRL+G, the area under the cursor is lifted off the screen and stored. CTRL+P replaces this area onto the screen at the current cursor position. This function also obeys the Cover and Overlay selection.

### **Help Screen**

This function is accessed with F7, and provides a quick reference help screen. To return to normal operation, press SPACE.

### **New Page**

This function clears and resets the page ready for you to start a new page. This option must be selected from the main menu (F0). If you have not saved the current page, you will be asked for confirmation. Press Y to clear the page, or N to abort the clear.

### **Undo**

This function allows you to go back to the screen as it was at the last menu function in case you make a mistake which destroys your page. To do this, press CTRL+U. Pressing CTRL+U again will take you back to the page with the mistake.

## 2.25 Saving/Loading pages

To store or recall pages from disk, a file menu is provided (F1). To load a page, select the load page option and enter the page name, preceded with the drive number and a colon if required. If you have not saved, you will be asked for confirmation. A quicker way of loading a page is to press SHIFT+F1 and then enter the name. You may also load the current text font from this menu.

There are two ways to save a page, in Colour or in Black and White. If your page is for demonstration, and you require the colour to be saved, select the Save Colour option (or SHIFT+F1). If your page is for printing only, and you do not need colour, then you may save it as black and white by selecting Save B/W. Then enter the page name. Black and white pages take half the space of colour pages on disk, and therefore save space.

### 2.26 Quick Key Reference Chart

General Keys:	F0 - Main menu F1 - File menu F2 - Mode menu F3 - Shade menu F4 - Colour menu F5 - Line menu F6 - Character menu F7 - Help Screen CTRL+U - Undo	SHIFT+F0 - Save colour page SHIFT+F1 - Load a page SHIFT+F2 - Character mode SHIFT+F3 - Wire mode SHIFT+F4 - Graphic mode SHIFT+F5 - 32 Text mode SHIFT+F6 - 40 Text mode SHIFT+F7 - Zoom CTRL+T - Joystick on/off
Character/ Wire mode:	!"...z - Draw character CTRL+I - Invert area CTRL+G - Get area CTRL+C - Clear area CTRL+Q - Dec size CTRL+E - Small Dec size CTRL+X - Dec V. size CTRL+Z - Small Dec V. Size	Arrow keys - Cursor movement ENTER - Next line CTRL+P - Put area GRAPH+SPACE - Draw a box CTRL+W - Inc size CTRL+R - Small Inc size CTRL+S - Inc V. size CTRL+A - Small Inc V. Size
Text mode :	!"...z - Draw character CTRL+A - Start of line ENTER - Next line	Arrow keys - Cursor movement CTRL+B - End of line DEL - Delete left
Graphic mode:	#:X 3/4 - Diagonal CTRL+Q - Decrease thickness M - Set marker L - Draw a line C - Draw a circle F - Fill area D - Draw mode on S - Spray mode on B - Draw a box	Arrow keys - Cursor movement CTRL+W - Increase thickness W - Swap marker Z - Draw line & move H - Shaded circle I - Invert area U - Undraw mode on R - Reverse mode on
Zoom mode :	SPACE - Toggle point ENTER - Exit zoom	Arrow keys - Cursor movement ESC - Exit zoom

## 2.3 Printing pages

This option allows you to print your previously created pages in almost any size you require. On selecting this option, you are asked for the number of pages to print across the paper, providing the facility to print up to three pages alongside each other. After pressing the key for the number of pages across, you are asked to enter each page name, in order, left to right, across the paper.

Next, you are asked the density to print in, the number of different densities (number of dots per inch) offered depends on your printer. Supplied with the program is a printer driver with a maximum number of 3 densities, i.e. 60, 120 or 240 dots per inch. If these do not work on your printer, see the System configuration section (4.1).

Now you are asked if you want to print sideways or normally. Pressing S will print the page or pages along the paper, pressing N will print them across.

Next you are asked for the dot width, which is always the number of dots printed across the page corresponding to each dot on your page. The program calculates the range of values which may be taken, the range allowed is actually increased by 1 so that you may print a page and a half.

If you are only printing one page, you will then be asked for a dot height, which is the number of dots printed down for each dot on your page. This value may be 1, 2, 4 or 8 only, a height of 1 takes about 1 quarter of an 11" page, and a height of 8 takes about 2 pages. When printing two or three pages across, this option is not available.

If there is space for a margin, you are prompted to enter a margin, within the given range (in dots). By dividing the maximum number by two, the printout can be centred.

Finally, you are asked to enter the number of strikes for each line, this is useful when the printer ribbon is wearing out. Please note that this option will not work on printers that do an automatic linefeed when carriage return is sent.

If your printer has an error or is not connected, then you will be asked if you want to continue or not. To print the page, you must correct the fault with the printer and press Y.

The page or pages will now be printed. When you have printed all of the pages you require, press ESC to return to the main menu.

## 2.4 Demonstrating Pages

### 2.40 Overview

This option allows you to display your pages in a demonstration type fashion. This is of course useful for advertisements in shop windows, etc. The option also caters for video recording such demonstrations so that you can make up video titles and presentations. The option is menu driven, option 0 takes you back to the main menu, and option 4 lets you see the demonstrations you have created.

### 2.41 Creating/Editing a demonstration

Select option 3 from the demo menu, and enter the name you wish to give to a demonstration. If it already exists, the set-up for it will be displayed, otherwise a blank screen will be shown. At the top of the screen are the column headings, the Page name, the display type, the background colour, the flash colour and the time the page will stay on the screen.

Below these headings is an inverted selection bar, which may be used to select the item to edit or enter. If you are editing a demo file, then the bar will be over one of the items, otherwise it will be blank. Pressing ENTER allows you to re-enter an item at the position of the bar. You may move the bar up or down with the arrow keys to position it, but the bar will not go past the bottom of the list, where new items can be entered.

When you press ENTER, you must first enter the name of the page to display. The program then presents a popup menu asking for the display type, select the type you require, the operations are as follows:

Instant puts the page instantly on the screen.

Scroll (Right,Left,Up & Down) moves the page onto the screen in the given direction.

Cover (Right,Left,Up,Down, Middle & Edge) slowly reveals the page in the given direction.

Merge makes half the page move in from the left, and half from the right to merge into a complete picture in the centre.

Next select the background colour you require from the popup menu. Then you are asked for a flash colour, this colour will swap on the screen with the background colour about once every second. If you select Clear or the same colour as the background colour, then the screen will not flash. Once you have entered these, you are requested for the time the page should stay on the screen, in seconds.

### 2.42 Starting a running demonstration

To start a running demonstration, select option 1 from the demo menu and enter the name of your demonstration file. This file will load, pressing the SPACE bar will then display the pages in the order, colour and technique specified when entering the demo file. To skip one page, press ENTER, to return to the demo menu, press ESC.

## 2.43 Starting a video demonstration

A video demonstration operates in a similar fashion to the normal running demonstration, except that the screen is blanked before and after each page display so that you may switch your video recorder into record mode. To connect the Einstein to your video, connect the RHF TV output of your Einstein to the input of your video recorder and tune the recorder until the Einstein screen appears.

After the demonstration file has loaded, an instruction screen is displayed, press SPACE, then switch your video recorder on, then press SPACE again. When the demo has finished, the screen will blank again, and the Einstein will beep once. Switch off your video, and press SPACE to return to the demo menu.

## 2.5 Preparing a font

Selecting option 3 from the main menu allows to prepare a font, as well as defining the appearance of characters, you can also create special symbols, such as pi, degrees, squared etc. On selecting this option, you are asked to enter the name of your font. If it already exists, then it will be loaded for you to edit, if it does not exist then it will be created, and as a start, the GrafDraw standard font will be loaded in for you.

Once the font has loaded, you are asked to press the key you wish to re-define, for example, pressing A will let you edit the character A and so on. This also applies to the graphics characters (on the front of the keys), which may be accessed by holding the GRAPH key down and pressing the appropriate key. For example, GRAPH+R allows you to edit a cross. If you wish to enter the ASC code of the character to edit, then press ENTER and enter the ASC code. If you wish to enter the code as a hex number, precede it with a \$. Pressing ESC here allows you to save the font and return to the main menu. After you press ESC, you are asked if you wish to save the font to a new file, press Y if you do and enter its name, otherwise press N and the name initially entered will be used.

When you have selected the character to edit, it will be displayed on the screen in an 8x8 character matrix, and the character itself will be displayed on the left as it is edited. The flashing cursor represents your current position in the grid, and may be moved around with the arrow keys. To toggle a position on or off, press the SPACE bar. An extra feature is the ability to reverse the character by pressing CTRL+I. When you have finished, press either ENTER to store the edit back to the character, ESC to abort the edit, or one of the other keys to store it to that key. Repeat this until you have finished editing the font, then press ESC as described above.

## 2.6 Converting files to GrafDraw

### 2.60 Overview

If you have a word processor, Screen Plus or GrafDraw 1.0, you may want to use their files in GrafDraw 2.0. To do this, you must use the Convert Data files option 6 on the main menu. Once you have selected this option, another menu will be displayed, with an option for converting each type of data file.

### 2.61 Converting GrafDraw 1.0 files

Selecting Option 1 from the convert menu allows you to convert your old GrafDraw files to GrafDraw 2.0 files. To do this, simply enter the page name of the old GrafDraw file, then the name you wish to give its conversion. The new GrafDraw files are not compatible with the old GrafDraw files since they take less disk space.

### 2.62 Converting ASCII files

If you have word processed text you wish to include in GrafDraw pages, you may use option 2 from the Convert menu. Please note that this option will only convert proper ASCII files into pages. Most professional word processors can or do produce ASCII files, for example 3S WP80, however TASWORD and WDPPO do not.

On selecting this option, you are asked for the name of your text file, (an extension may be included here). The file will be read, and you will be asked for the font you wish the text to be converted into. Next, you are asked if you require 32 or 40 column pages (effectively taking 64 and 80 column text respectively), press 3 for 32 column text and 4 for 40 column text. The number of pages required (2 or 4) will be calculated. You will then be asked for the names of the pages, the positions of which will be indicated. Once you have done this, the text file will be converted.

### 2.63 Converting Screen Plus files

If you have a copy of Screen Plus from Screens, you may wish to convert a screen file. To do this, select option 3 from the convert menu, then enter the screen number, and the drive on which the screen is to be found, then enter the name of the page to which it will be converted.

You may also convert GrafDraw files into Screen Plus files, to do this, you must exit GrafDraw to DOS, and enter GDTOSC+, then enter the screen number and the GrafDraw page name.

### 2.7 Page/Font management

Two other options are provided on the main menu, Page/Font directory and delete page/font, these are to help in the management of your pages and fonts. It is recommended that if you have two or more disk drives, you use drive 0 as the program disk and drives 1-3 as data disks. You should be able to store 31 black & white pages, 15 colour pages or 64 fonts per blank disk. These figures increase if you have 5 1/4" disk drives or a hard disk. To see what pages/fonts are on a disk, select option 1 from the main menu, and then enter the drive number containing the disk. To erase a page or font, select option 7 and enter its name.

Page or font names may be up to 8 characters long, each character being either a number or a letter. If you precede the name with a drive number and a colon, then that drive will be used, otherwise the drive you started GrafDraw from will be used.

### 3.1 Overview

This section is intended as a guide to using GrafDraw by a series of examples, firstly on how to create some pages, and then how to manipulate them. The section assumes that you have a single drive Einstein connected to an Epson Compatible printer (E.G. TP80), and that you have a spare blank disk ready. If you have a twin drive Einstein, then put the spare disk in drive 1 and whenever a file is saved, precede the page name by 1:. This chapter gives you very basic examples for which Grafdraw may be used, it has far more facilities than are described in the following sections. The best way to learn how to use Grafdraw, is to start with the given examples, and then try altering the pages with Grafdraw's other facilities.

### 3.2 Preparing Pages

This section describes in detail how to create a poster, a form and a graph. It assumes that you are in Prepare A Page mode with a blank screen and four flashing cursor corners. To get to Prepare A Page, press 2 at the main menu. To clear a screen after you have created a page, press F0, SHIFT + up/down arrow twice and then press ENTER.

#### 3.21 Creating a poster

This section will tell you how to construct the poster shown on the following page.

First, we will put 'Grafdraw' at the top of the page, before writing the letters in, we must first adjust the cursor size. The current size should be 50 x 50, we want 25 x 40, press CTRL+Q five times to shrink the cursor horizontally, then press CTRL+X twice to shrink it vertically. The cursor size should have changed now, and the status line should read "H:40 W:25". Next we have to move to the correct position, first hold SHIFT and press the up/down arrow key three times, now hold the GRAPH key and press the left/right arrow key five times, this should position the cursor at the top left of the screen, and the status line should read "X:5 Y:135". Press SHIFT+G, and the "G" of Grafdraw will be displayed, before doing the lower case letters, we must change the cursor size yet again to give the characters the correct proportions. Press CTRL+X three times then type "ra" and the r and a will be displayed, (Please note ALPHA LOCK must be off). Next we must enlarge cursor size again to display the correct size f and d, so press CTRL+S three times and type "fd", once again shrink the cursor size by pressing CTRL+X three times and type "raw". Note: When you are entering a character, wait for it to be drawn before typing the next character.

The word "Grafdraw" should now be at the top of your screen. We will now put the 3D effect shadow on the characters. Press SHIFT and left/right arrow eight times to position yourself back on the "G", and resize the cursor with CTRL+S three times. Now move slightly off the "G" by pressing GRAPH SHIFT and left/right arrow twice, and then GRAPH and up/down arrow twice. Now you are in the correct position, we must change the character shade to hollow, so press F3, and press the down arrow key three times until "Hollow" is inverted, then press ENTER, and then ESC to return to the main screen. This has set the character to be the outline of the letter, press SHIFT+G and a shadow should appear around the G. Now repeat the steps above for writing the "rafdraw" and the whole word will have this 3D shadow effect.

Next we will put the "FOR YOUR" in, you should be positioned after the "w". Press down arrow once and then ENTER, you should now be in the correct position to write "FOR YOUR". First we must select Italic characters, and the correct shade. Press F6, for the character menu, and press SHIFT and up/down arrow, this should invert the "Italics" option at the bottom of the menu, press ENTER and italics will be selected. You should now be at the main menu, press down arrow until "Shade Type" is inverted, then press ENTER. The shade menu will appear, press SHIFT and up/down arrow twice to invert the "Diag. Lines" option, then press ENTER and then ESC. Now hold the SHIFT key and type "FOR YOUR".

To put "EINSTEIN" at the bottom of the screen press ENTER twice and then press SPACE. Now you are in position, we must change the cursor size, so press CTRL+Q once to narrow the cursor. Now we must change the shade type again, this time we will use the main menu (rather than the short cut) to show you how to use the menu system. Press F0 to call up the main menu, then press the down arrow key until you invert "Shade Type", then press ENTER, now press the down arrow key until you invert "Pattern" then press ENTER again, and then press ESC. Now hold the SHIFT key and type "EINSTEIN".

Now you have completed your poster, we must save it. Since we have not used colour, it is best to save the page in black/white so as to conserve disk space. First, put a blank disk in drive 0, (or a disk with at least 10k free), then press F1 to call up the file menu, and then press SHIFT and up/down arrow to highlight "Save B/W", press ENTER and then enter the name of the page. For this example, type POSTER and then press ENTER. The page will be saved, if the disk is full, then an error will occur and you must repeat the step again with another disk.

This exercise has taught you how to move the cursor, how to size the cursor, how to use the menus for different shading, italics and saving your page. It has also shown you how to produce large lettering, and some simple lettering effects.

3.21a

Grateful

FOR YOUR

EINSTEIN

### 3.22 Creating a form

This section tells you how to create the form shown on the following page, it is advisable that you have read through and completed the previous section, as movement and cursor size changing is assumed to be known.

First, we will draw the 3S logo, shrink the cursor size to "H:20 W:20" and move to "X:0 Y:163", then type "3S".

Next we will put in the title, position the cursor at "X:62 Y:162" and resize the cursor to "H:15 W:10". Next, we will change character style to wire, so press SHIFT+F3. Now type in "Software", changing the cursor size for lower case letters as required. Next move the cursor to "X:49 Y:138" and type in "Order Form", again adjusting the size for lower case letters.

Now we will put in all the extra text, such as the address and headings, to invoke text mode, press SHIFT+F5. The cursor should change to a small square, representing the character size, at the top of the screen. First position it at "X:3 Y:8" with the arrow keys, and type "Description", three spaces, "Qty", four spaces and then "Price". Now move to "X:18 Y:15" and type "Total £", at "X:1 Y:15" type "Name \_\_\_\_\_" then at "X:1 Y:17" type "Address \_\_\_\_\_" and at lines "X:4 Y:" 19,21 and 23 type "\_\_\_\_\_". Now move to "X:19 Y:17" and type "3S Ltd," and then the rest of the address on the lines below, "The Gallery,", "Brookside,", "Sandhurst,", "Camberley,", "Surrey,", "GU17 8AP."

Now all the text has been placed on the form, we must put the lines in. Select wire character mode with SHIFT+F3, move to "X:11 Y:76" and resize the cursor to "H:55 W:225", then press GRAPH+SPACE. This will draw a box around the main area. Now shrink the height to "H:40" and press GRAPH+SPACE again. Repeat this last step, shrinking the height by 10 each time until the height is zero. Now size the cursor to "H:55 W:105" and press GRAPH+SPACE, this will draw in a vertical line to separate Description & Qty. Next position the cursor at "X:166 Y:76", change the size to "H:55 W:70" and press GRAPH+SPACE again. Now move to "X:131 Y:61", change the size to "H:15 W:105" and press GRAPH+SPACE again.

Now you have finished your form, save it as a B/W page with the name FORM, as described in section 3.21.

This exercise has taught you how to use the text and wire modes, and how to draw boxes and lines.

# 3S

# Software

# Order Form

Description	Qty	Price

Name \_\_\_\_\_

Total £ \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3S Ltd,  
The Gallery,  
Brookside,  
Sandhurst,  
Camberley,  
Surrey,  
GU17 8AP.

### 3.23 Creating a graph

This section tells you how to create the graph shown on the following page, it is advisable that you have read through and completed both sections 3.21 and 3.22 since many operations described in detail by these sections are assumed to be known.

First we will put a title on the page, we will put the title in colour. Press F4 to call up the colour menu and select the "Graphics" option and press ENTER, then select the colour for the title, we shall use "D. Red" (dark red), press ENTER and then ESC. Next, shrink the cursor to "H:20 W:13" (use CTRL+E or CTRL+R to change the size by a small amount). Now move the cursor to "X:5 Y:158" and type "GRAFDRAW SALES". For effect, we will shade this title, position the cursor at "X:0 Y:153" and adjust the size to "H:30 W:219". Select the shade method by pressing F3 and using the cursor keys to invert "Diag. Lines", then press ENTER. If we now tried to shade however, the lettering under the area would be wiped out, to prevent this we must use overlay mode. Select the "Char. style" option from the main menu and press ENTER, then select the "Overlay" option on the character menu and press ENTER (cover has the opposite effect). Now press ESC to return to the page and press GRAPH+SPACE to shade the area under the cursor.

Now we have a title, we can draw the axis, first we must reset the colour to black, so press F4 and select "Graphics" again, and this time select the "Black" option. To draw the axis, we will use the graph mode. Select Graph mode by pressing SHIFT+F4, the cursor should change to a cross, position where the left corner of the cursor was previously. Move this cursor to "X:40 Y:26", just use the arrow keys, (to move diagonally use the four keys to the left of the arrows and the ENTER key (f[:])). When in position, press M, this will set a marker at this position. Now move to "X:40 Y:145", note a second cross has been left at your marker, then press L and the Y axis will be drawn. Press W, to swap marker and cursor, and then position the marker at "X:37 Y:30" and press M again, now move to "X:239 Y:30" and press L.

Now the axis has been drawn, we will label it, press SHIFT+F5 to select text mode, and position the cursor at "X:7 Y:21" then type the first letter of each month separated by a space, i.e. "J F M A M J J A S O N D". Now move to "X:7 Y:22" and type the second letter of each month, i.e. "a e a p a u u e c o :". and finally put the last line line in at "X:7 Y:23": "n b r r y n l g p t v :". Now put in the Y axis labels, at "X:5 Y:20" type "0", at "X:2 Y:13" type "5000" and at "X:1 Y:6" type "10000". Finally, we will put a little sub heading on the page, in colour, using Yellow on Blue. Press F4 and select "Text Colour", then select "L. Yellow" as the foreground, and then "D. Blue" as the background. Now the colour has been set, type "JS Ltd," at "X:10 Y:7" and "1988. " at "X:10 Y:8".

Now we are ready to enter the data, let us suppose the sales figures are as follows (to the nearest hundred):

Month	Sales
January	500
February	1000
March	1500
April	2000
May	2000
June	5000
July	6000
August	5500
September	7000
October	9000
November	10000
December	7000

(Wishful thinking!!)

We can represent each hundred as one pixel, so the height of the bar for May would be 20 and so on. First return to block mode with SHIFT+F2, then make the cursor width 14, and position the cursor at "X:45 Y:30". For each month, you must change the cursor size to the sales figure divided by one hundred, so for January change the cursor size to "H:5 W:14" and press GRAPH+SPACE. Repeat this for each month, changing the shade style each time from the shade menu. Now save this page with colour, (a quicker way than using F1 is SHIFT+F0).

This exercise has taught you how to use the graphic mode, how to change colours, and how to shade areas.

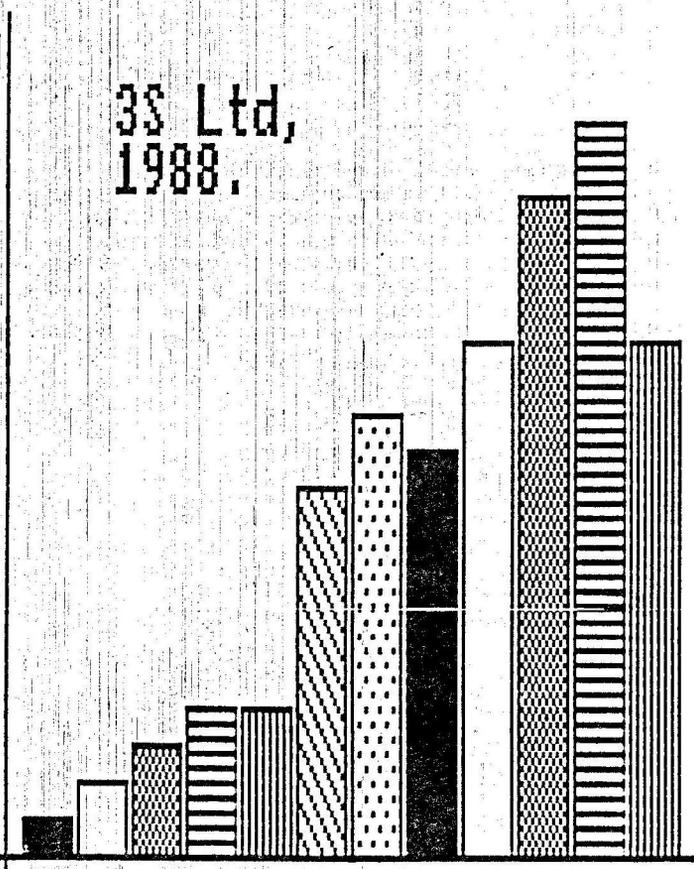
# ORDINARY SALES

10000

3S Ltd,  
1988.

5000

0

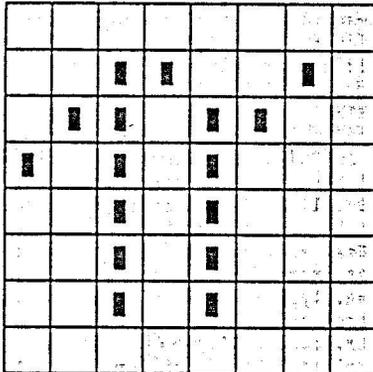


J F M A M J J A S O N D  
 a e a p a u u e e c o e  
 n b r r y n l g p t v c

### 3.3 Preparing a font

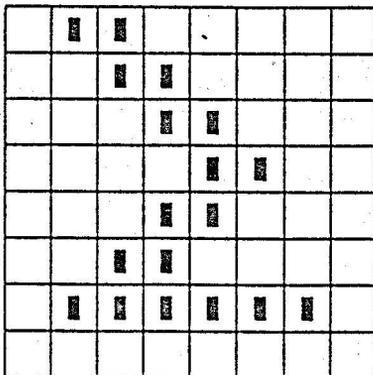
This section describes how to prepare a new font. It will deal with creating just two symbols that you may need, but the principles involved may be used to create any symbol or character. The symbols we will create are "n" and "z".

Select option 3 from the main menu and enter the name SYMBOL for a font name, press ENTER to accept this name. We will store "n" under the key GRAPH+P and "z" under GRAPH+>. So press GRAPH+P to define it, the old character it represents will be drawn, (two bars), to remove this use the arrow keys to position the flashing cursor over the white blocks, and press SPACE. Do this to all the blocks until the grid is clear. Now move the cursor to the third "hole" from the left, and the second from the bottom, press SPACE to toggle that point, then move up one "hole" and press SPACE. Repeat this operation until the grid looks like this:



In the left hand corner under "New", you should be able to see a picture of what the character looks like. When you are satisfied, press ENTER to redefine the character.

Now we will define the "z", since ">" is already defined, we can use this as a base from which to start. So press ">" (SHIFT+.), then position the block on the second line from the bottom, fourth hole from the left, and press SPACE. Now move right by one and press SPACE again, do this until the grid looks like this:



To redefine this to GRAPH+), press GRAPH+SHIFT+), and the character will be redefined.

Now we have defined the characters, press ESC and then press N, and the character changes will be stored in the font SYMBOL. To use a font in page preparation mode, call up the file menu, select "Load a Font", and enter the font name, then this font will be used when in text mode.

Please note: When in 40 column text mode, the two right hand columns are not used (this can cause the right hand side of a character to be chopped off when using some fonts).

### 3.4 Creating a demonstration

The previous sections have dealt with creating pages, this and the next section help you use these pages. This section will describe how to make up a running demonstration, using the pages created in sections 3.21, 3.22 and 3.23. First select option 5 from the main menu, when loaded, another menu will be displayed. First we must create a demonstration file, to do this select option 3 and type in DEMONST and ENTER.

A bar will appear on a mostly blank screen, press ENTER to enter details, first enter the page name POSTER ENTER. You are then asked for the display mode, for this example we will have the page scrolling in from the left, so use the cursor keys to invert "Scroll Lft" and press ENTER. Next we must put in the background colour, select "M. Green" for this example by using the cursor keys and then pressing ENTER. Next we are asked for a flash colour, but for this page we will ignore it, so just press ENTER. Finally we are asked for the time the page is to be on the screen, type 5 and ENTER (5 seconds plus disk access time).

Now press the down arrow and ENTER, this will let you enter the next page. For this page enter FORM, select "Cover Up", and select "D. Yellow" for a background, this time select "White" for flash, and then enter a time of 5. Repeat this with GRAPH, select "Merge", "Gray", "Clear" and a time of 5.

Now you have entered the information, press ESC to return to the menu. Now select option 1 to start a demo, and enter DEMONST and ENTER. Once it has loaded press SPACE, and watch the result of your efforts.

### 3.5 Printing Pages

This section will tell you how to print the pages you have created. select option 4 from the main menu. The first question asks you how many pages to print, first we will print the poster. So type 1 to print one page, then enter its name, POSTER and press ENTER. Next enter the density, the normal density to use is 2, which gives good quality at a fair speed, so press 2. For this page we will print it down the page, so press 5. To make it fill the page, select a dot width of 5 (by pressing 5) and then a dot height of 2 (by pressing 2). To centre it on the page enter a margin of half the maximum margin given (this should be 22 with the printer driver supplied), so type this number and press ENTER. Next enter the number of strikes, if your printer ribbon is wearing out press 2 otherwise press 1. This should now print your poster.

Next we will print the graph and the form, next to each other on the page. To do this press 2, (for two pages), then enter GRAPH ENTER and then FORM ENTER. This will print the graph on the left, and the form on the right. As before press 2 for double density. This time we will print accross the page, so press N for normal. To fit the pages on select a width of 1, then enter a margin of 225 to centre them, no dot height is required, since when printing more than one page, height enlargement is not available. Select the required number of strikes and the page will be printed.

Many variations on printing may be achieved by changing the print parameters. A dot height of 8 for example will take up approximately two A4 pages.

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## 4.1 Customising your system

### 4.1.1 The system font

The font that GrafDraw operates in is contained in the file GDFONT. If you wish to change this font, edit it with the Prepare Font operation. Please note: the changes only take effect after you reset the system by re-starting GrafDraw.

### 4.1.2 The system colours

If you do not like the colour setup in GrafDraw, you may change them. To do this, exit from GrafDraw and enter GDSETUP. This program will allow you to set up the colours and your printer (See 4.14). The current colour settings are shown at the top of the screen. To set the normal colours, select the Default Col. option from the menu at the bottom, otherwise select the Set colours option. If you select the Set colours option, select the item for which you wish to change the colour, and then select the appropriate colours. When you have set the colours, select the Main menu option to return to the first menu. If you wish to save the new colour settings, select the Save & End option, otherwise select the End No Save option to leave the settings as they were.

### 4.1.3 Initial page

When the program first loads, an initial page may be displayed. On the supplied disk, a page has been set up. To change this, simply save your page in the prepare page option as GDPAGE.

#### 4.14 Setting up your printer

If your printer is not fully EPSON compatible and the print option does not work, then your printer will need to be configured. To do this, you need your printer instruction manual. First quit from GrafDraw and enter program GDSETUP, this allows you to set the colours (4.12) and a printer. The printer settings are shown just below the colours. If you do have an Epson printer, then you may select the Set Epson option from the menu at the bottom of the screen. If your printer is not Epson compatible, select the Set Printer option. On selecting Set printer, you must enter the following details:

The printers name (This is not important and may be ignored)

Then the system allows you to enter three densities as follows:

1. The maximum number of dots across the Page.
2. The number of bytes in the Graphics code instruction.
3. Then the bytes in the code to turn Graphics mode on for the particular density. If you wish to enter hex numbers, precede the number with a \$. Please note that this code should contain the line spacing, and the code to switch Graphics mode on for the number of dots across the page.

If your printer does not support up to three densities, just enter 0 as the maximum dot width, and 0 as the number of codeon items for the densities not supported.

Once you have entered all the codes, press ENTER if you printer does not do automatic line feeds and ENTER again if the Top pin is the MSB of the Graphic data (refer to your manual).

Setting up your printer is particularly difficult to do, so if you have any problems, please contact us and we will try to help.  
Please note: If you have a fairly old printer which uses 7 bit graphics, GrafDraw cannot print to it.

Once you have set up your printer, select the Save & End option to save the new settings, or the End No Save option to ignore the new settings.

#### 4.2 BASIC Routines

##### 4.21 Loading screens into your programs

To include screens into your programs, you should copy GDSCRNLD.OBJ from your GrafDraw master disk onto your BASIC disk, then copy the GrafDraw page file on to your BASIC disk and re-name it to <name>.OBJ, then use the following program to load in a screen:

```
10 CLEAR &A900
20 LOAD "GDSCRNLD.OBJ"
30 CLEAR &B000
40 LOAD "<name>.OBJ"
50 CALL &A900
60 END
```

#### 4.22 Loading fonts into your programs

To load fonts, use the same procedure as described in 4.21 except change line 50 to CALL EA980.

Arrow keys .....	4-8
ASCII .....	12
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Circles .....	6
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