

PSION

SERIES 3a



User Guide

PRECISION SERIES 3a

User Guide

NOTE: If magnetic materials are placed close to the underside of the Series 3a they may be affected by the speaker magnet. For this reason it is best not to keep your Series 3a in the same pocket as credit cards and/or travel passes with magnetic strips.

WARNING: *This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. See the instructions overleaf if interference to Radio or Television is suspected.*

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This PDF version by **David Kimberlin-Wyer 2013**

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FCC Information for the USA

Radio and Television Interference

This equipment generates and uses radio frequency energy and if not used properly — that is, in strict accordance with the instructions in this manual - may cause interference to Radio and Television reception.

It has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules. These are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to Radio or Television reception, which can be determined by turning the equipment off and on, try to correct the interference by one or more of the following measures:

- Reposition the Radio or TV antenna
- Relocate the Series 3a Computer with respect to the Radio or TV
- Move the Series 3a Computer farther away from the Radio or TV
- If you are using the Series 3a Computer with a Mains Adapter, plug it into an outlet which is on a different circuit from that of the Radio or TV.

If necessary, consult an authorised Psion dealer or an experienced radio/Television technician for additional suggestions.

Important

This equipment was tested for FCC compliance under conditions that included the use of shielded cables and connectors between it and the peripherals. It is important that you use shielded cables and connectors to reduce the possibility of causing Radio and Television interference. **Shielded cables, suitable for the Series 3a Computer range, can be obtained from an authorised Psion Dealer.**

If the user modifies the Series 3a Computer or its Expansion Modules in any way, and these modifications are not approved, by Psion, the FCC may withdraw the user's right to operate the equipment.

The following booklet prepared by the Federal Communications Commission may be of help: "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the US Government Printing Office, Washington, DC 20402 Stock No 004-000-00345-4.

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1

Getting started

You should read this chapter first. It shows you how to start using your Series 3a. It also describes basic information on operating the Series 3a, which you need to know before you read the other chapters in this manual. Wherever there are things for you to do, the instruction(s) are indicated with numbers. Extra notes, which you may find useful, are indicated with a  symbol.

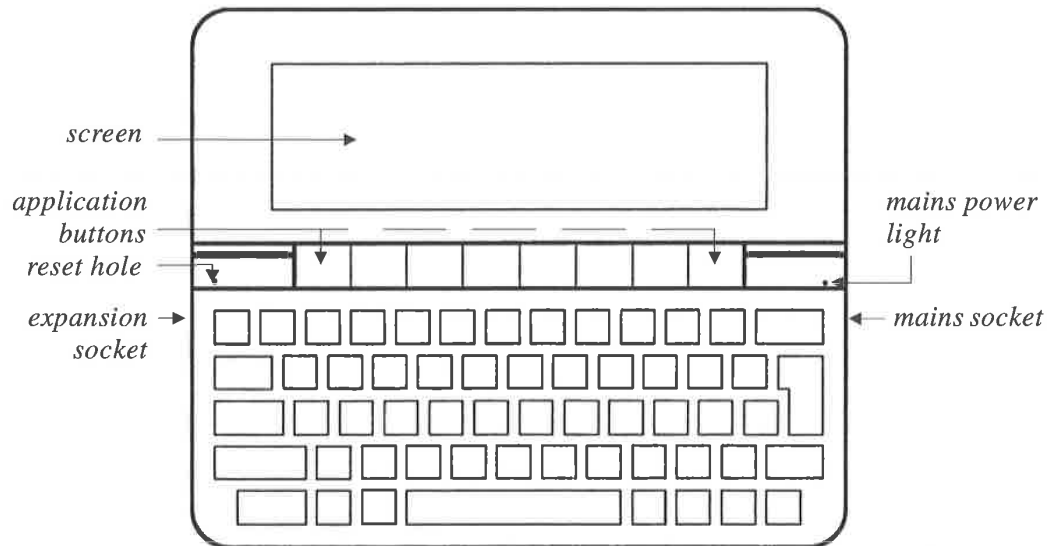
The different *applications* - Agenda, Database and so on - are described from chapter 2 onwards. The simpler applications are described first. Each chapter begins with the important information you will need for everyday use, before covering more detailed information. You can read as much as you like of these chapters, and read them in any order.

The second half of the manual covers more general topics, including printing, tone dialling and security.

If you have any problems, try looking up suitable entries in the index, or refer to the 'Troubleshooting' chapter.

(Experienced Series 3 users may wish instead to read Appendix C, which lists the main differences between the two computers. 3 Link users should read Appendix D also.)

Where things are



Powering the SERIES 3a

The Series 3a is powered by two ordinary AA batteries. It is best to use alkaline batteries - they should last for several months of normal use.

A backup battery is also supplied with your Series 3a. This has the sole job of preserving your information when the time comes for you to replace the main batteries.

A mains adaptor for the Series 3a is also available. This may be useful if you use your Series 3a heavily in one particular location.

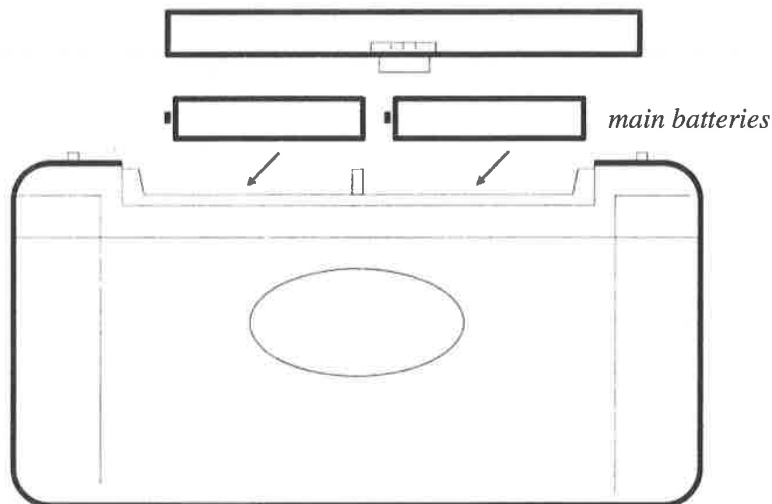
Don't worry about leaving your Series 3a turned on by mistake, as it will turn itself off after a few minutes to conserve power.

Fitting the batteries - the first time

You can fit the main batteries and the backup battery in any order.

Fitting the main batteries

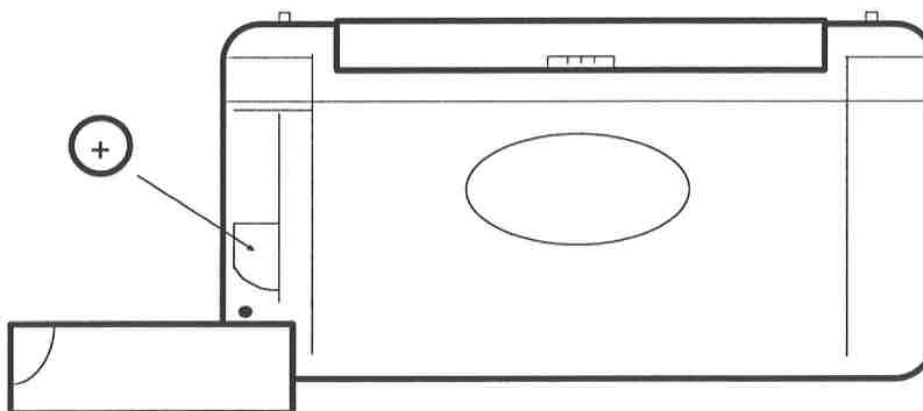
1. Make sure that the Series 3a is closed, then turn it over.
2. Unclip the main battery cover at the top and fit the main batteries. **Be sure to insert them the right way round, as marked on the case.** (Note: one battery has its positive end on a "pushable" contact.)



3. Replace the main battery cover.

Fitting the backup battery

1. You will see two doors on the underside of the Series 3a which swing open; the backup battery fits under the door on the left. Open the left-hand door:



2. The backup battery slides in from left to right. Insert it with the flat side, usually marked with a + symbol, facing upwards.
3. Close the door again, and turn the Series 3a over.

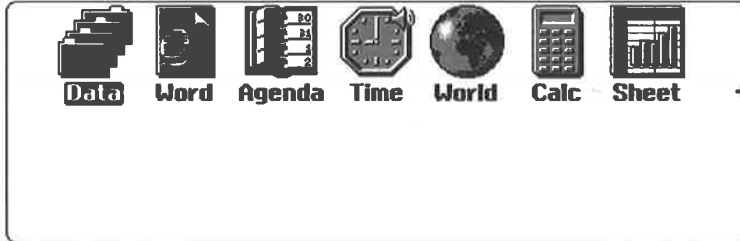
Turning On

The ON key, also marked 'Esc', is at the top left of the keyboard. It is referred to as either 'Esc' or 'ON/Esc'.

1. Press the ON/Esc key.

The Series 3a starts by displaying an introductory/copyright screen. **If this does not happen, check that you have inserted the main batteries correctly.**


You will now see the *System screen*, which initially looks like this:



ON/Esc key

Turning Off

1. Hold down the Psion key, marked Ψ , at the bottom left of the keyboard. While holding it down, press the OFF/1 key (next to ON/Esc).

 The Psion key (the Ψ symbol is part of the Psion logo) does nothing on its own. It is used in conjunction with other keys for extra characters and special functions. Such keypresses are usually written with a dash joining the keynames, such as Psion-1 for the OFF keypress.



PSION-1
=OFF key

Other notes

- You can use the standard mains adaptor for the Series 3a at any time.
- 'Changing the batteries' is described towards the end of this chapter.

Screen and keyboard

The screen

To change the screen contrast:

- Hold down the Psion key, and while doing so, press the > (Contrast +) key or the < (Contrast -) key, until you're happy with the screen contrast.

If you ever need to clean the screen, use a dry cloth.



PSION->
PSION-<
contrast keys

Keypresses

The Series 3a keyboard is similar to that of a typewriter or desktop computer.

If you hold down either Shift key you get the symbols above the numbers on the number keys, and the alphabetic keys produce upper case (capital) letters - A instead of a, and so on.

Most keys "auto-repeat" (keep producing keypresses) if you hold them down.



Shift keys

The ♦ (diamond) key


Most of the applications have different screens or views. You can move between these screens or views by pressing the ♦ key. You will see this referred to in the chapters which follow.



Diamond key

Keyboard markings

The yellow markings above certain keys are extra characters which the key can produce (or special functions the key can perform). To get one of these characters or functions, hold the Psion key down while pressing the key. For example, Psion-6 gives the @ character.

 Although the ON key is also marked in yellow for consistency, you don't need to use the Psion key when turning the Series 3a on.


The application button pad

The touchpad of eight large buttons between the screen and keyboard allows you to move between the different *applications* on your Series 3a - the Database, Word Processor and so on. For example, if you want to check your daily agenda, press the Agenda button; you can then look at your agenda, or enter new appointments.

- **System** takes you to the *System screen* - the screen shown when you first turned the Series 3a on. The System screen displays an *icon* (picture) for each application on the application button pad, and for some built-in applications which do not have their own application buttons. There are more icons than can be shown on the screen

at one time. You can press the → and ← arrow keys to move between the icons on the screen.

- **Data** takes you to the *Database*, which you can use as a phone/address book.
- **Word** takes you to the *Word Processor*, which you can use for typing notes, letters, memos and so on.
- **Agenda** takes you to the *Agenda*, which you can use as a diary/appointment manager.
- **Time** takes you to the screen where everything to do with time is managed, including alarms.
- **World** takes you to a screen that displays various information, including dialling codes, for hundreds of cities and countries.
- **Calc** takes you to a programmable scientific calculator.
- **Sheet** takes you to the Spreadsheet where you can enter your own *worksheets* full of calculations.

 The **Program** and **Record** applications do not have application buttons. You can access them from their icons on the System screen. You can use 'Program' to write your own programs in the *OPL* language to add new features to your Series 3a. See the Programming manual for more details of OPL. You can use "Record" to record your own alarm sounds and voice messages. 'Record' is described in a later chapter of this manual.


You can turn on the Series 3a by pressing any application button. You are then taken to the relevant application.

You may wish to practise using the application buttons and special functions for keys by trying the following example:

1. Press the Word button to move to the Word Processor.
2. Type some text.
3. Press Psion-◆ to use the special function for the ◆ key - the Caps Lock keypress. Type some more text. As you can see the alphabetic keys are now producing upper case letters on their own. Press Psion-◆ again to revert to lower case letters.
4. Press the System button to return to the System screen.



Caps Lock

 **You don't have to finish with one application before moving to another.** As in the above example, you can press the Word button and begin typing some text, then press the System button to move back to the System screen, and then press Word again to continue with your document.

Setting the Home City and Time

There are two things you should set before you enter any of your information: **your home city, and the current time.** You have to set these before you can make effective use of world dialling, alarms, the Agenda and so on.

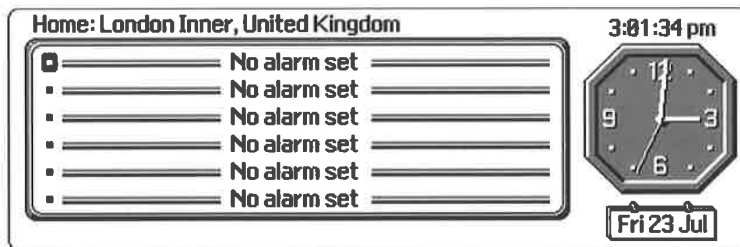
In setting these, you will see how some important keys work, and how things are displayed on the screen.

Setting the home city

You should set your home city before you set the current time. The home city affects the current time displayed by the Series 3a clock because the Series 3a knows about time zones.

You can set the home city with either the World application or the Time application.

1. Press ON/Esc, if necessary, to turn the Series 3a on.
2. Press the Time button to move to the Time application. The 'Time screen' initially looks something like this:



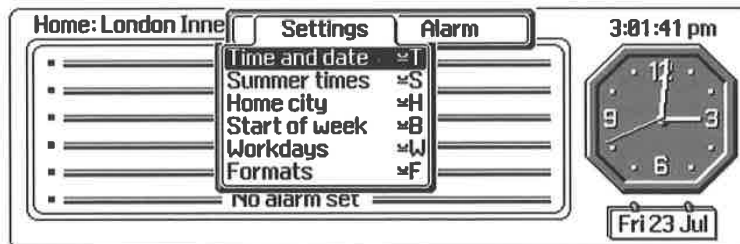
The central area of the screen shows any alarms that have been set on your Series 3a. There are six lines for alarm details. Initially, they all say 'No alarm set'. Your current home city is shown on the top line.



Menu key

3. Press the Menu key.

The screen will now look like this:



A menu has appeared on top of the previous display. The top line, 'Settings', is the title of this menu. (To the right of 'Settings' is the word 'Alarm'. This is the title of a second menu, which allows you to manage the alarms).




Arrow keys

Each line below the menu title is a separate option. There is currently a highlight on the first option on the 'Settings' menu.

You can move the highlight up and down the menu with the ↑↓ keys, and between the different menus with the ←→ keys.

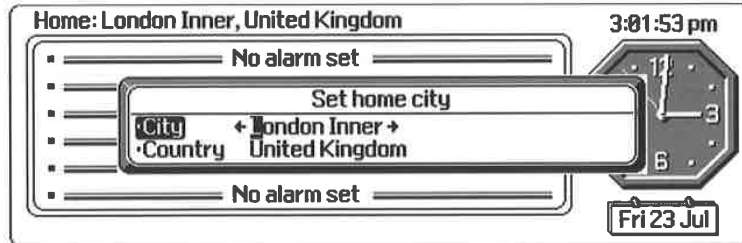
4. Move the highlight onto the 'Home city' option on the 'Settings' menu, and press the Enter key.

 Enter is the "do it" key. Whenever you want to perform a highlighted option, press Enter. You also use it like the Carriage Return on typewriters when you want to start typing a new line.



Enter key

The Time screen now looks something like this:



A *dialog* is now displayed on the screen. Dialogs appear whenever the Series 3a has to ask you for information. Most dialogs have a title at the top - in this case it is 'Set home city' - and a number of lines in which you enter information. The Ti keys move the cursor from line to line.

This dialog has two lines: 'City' and 'Country'. The 'City' line is currently highlighted and the name of a city or area is shown. There is a flashing cursor on its first letter; you can now type the name of a new home city.

Sometimes, as in this case, information in one line of a dialog affects the information displayed in other lines. The reason is usually obvious - in this dialog as the 'City' line changes, the 'Country' line changes as well.

5. Type in the name of your city, or the one nearest to you. As you press each key, the cursor moves to the right and the Series 3a tries to find a city to match the letters you've typed. Stop typing as soon as it has found the correct city.

 Because the Series 3a also stores dialling codes, some cities may be named a little strangely - London Inner and London Outer, for example.


If you make a mistake while typing in the city name, you can use the Delete key to delete the last letter typed, moving the cursor back to the left. (The Series 3a again shows the first city which matches the letters to the left of the cursor.)



Delete key

If at any point the Series 3a can't find a city to match the letters you've typed, it will beep. If you're sure you have spelt the city correctly, the Series 3a doesn't know about that city. If this is the case you will need to press Delete a few times to remove the letters you typed and then type in a different city name. Once you are used to the Series 3a, you can move to the World application and add your own city, then move back to Time to set it as your home city (described under 'Adding or Changing Information' in the 'World' chapter).

6. **When the city you want is displayed, press Enter and it will be set as your home city.** You will now be able to use the World application to find dialling codes for other cities around the world. When you have set the current time, you can also use the World application to find the times in other cities.

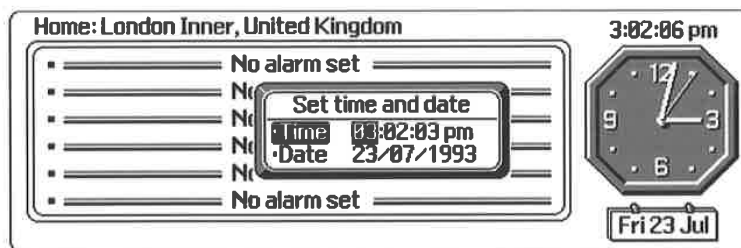
 If you travel, you should change the 'Home city' to your current location. The current time will change automatically, and international dialling codes will then be given based on your new location.


Setting the time and date

Experienced computer users- select the 'Time and date' option on the 'Settings' menu in the Time application to set the time and date for the Series 3a.

New computer users may wish to use the following step-by-step instructions to set the time and date:

1. Press the Time button, if necessary, to go to the Time application.
2. Press the Menu key and select the 'Time and date' option on the 'Settings' menu (move the highlight onto 'Time and date', and press Enter). A dialog will appear, like this:



3. Press ↓ to move the highlight to the 'Date' line.
 4. Type the correct day, month and year, in numbers. The highlight will move automatically. You can move the highlight manually to the next part of the date by pressing → (or the Space key), if the day or month is only one digit.
-  If you type in incorrect or unsuitable numbers, the day and month numbers are corrected to the largest values allowed. For example, if you typed 88888888 the numbers would be corrected to 31st December 2049 (the last date allowed by the Series 3a).
5. Press ↑ to move to the 'Time' line. The time is shown as hours, minutes and seconds. The highlight moves onto the hours.
 6. Type the time, in the same way as the date. For example, to set the time to twenty five minutes past nine in the morning you would type: 0 9 2 5 0 0 . For "am-pm" clocks you can press A or P to change between "am" and "pm".

 In "am-pm" format, midnight is written with a 12 , not 00 . For example, half past midnight is 12 : 30 : am.

7. Press Enter and the time and date are set.

The Series 3a is accurate to within a few seconds a week. Use the 'Time and Date' option again if you ever need to correct the time.


Changing the way time and date is displayed

If you're used to menus and dialogs on other computers: use the 'Formats' option on the 'Settings' menu in Time - perhaps by pressing its *hot-key* Psion-F - to set the time and date formats you prefer.

If you are unsure of menus and dialogs: follow the instructions below. Even if you do not wish to change the date and time formats, the example shows you more about menus and dialogs along the way.

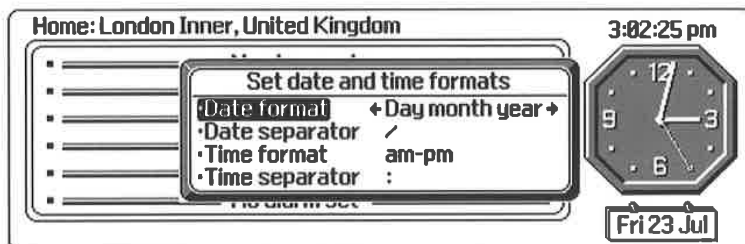
Changing the time and date formats:

1. Press the Time button, if necessary, to move to the Time application.
2. Select the 'Formats' menu option on the 'Settings' menu - either press the Menu key and select it as you have selected options from menus before, or press Psion-F. The keypress Psion-F is the *hot-key* for the 'Formats' option.

 Every option on a menu ends with \square (the Psion key symbol), or Shift- \square followed by a letter. These are the hot-keys - shortcuts for selecting the options. Hot-keys can be used with or without the menu on the screen - you would normally use them without displaying the menu as it is quicker.

While you're learning to use the Series 3a, you'll find it easiest to use the Menu key to find the option you want, but you'll soon start to remember the hot-keys of the options you use most.


The 'Set date and time formats' dialog will appear. It looks like this:

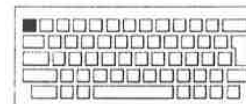


3. The highlight is initially on the 'Date format' line. If you press the \leftarrow and \rightarrow keys you will see the setting on the line change. Leave it set to your preferred date format.

 Whenever you see little arrows around a setting in a dialog, you can use $\leftarrow \rightarrow$ to change it.

4. Press \downarrow to move to the 'Date separator' line. If you wish to change it, just type the character that you want to use as the date separator, for when dates are displayed in dialogs.
5. Press the \downarrow key to move to the 'Time format' line. You can set this line to either '24 hour' or 'am-pm'. Leave it set to your preferred format.
6. Press the \downarrow key to move to the 'Time separator' line. If you wish to change the character used to separate the numbers for times, just type a new character.
7. Press Enter, to say you have finished.

 If you bring up a menu or dialog which you didn't want, you can remove it by pressing the Esc ("Escape") key. The Esc key performs the opposite action to the Enter key, as it will almost always get you out of anything - it means "no, forget this thing I've just chosen". Here, you would use it to make the menu go away.



Esc key

Moving the cursor and editing text

The keypresses and features explained here are used repeatedly throughout the Series 3a. **You don't have to learn all of this yet. You may wish to refer back to this section as you get used to using your Series 3a.**

Basic editing keys

These are the basic editing keys you'll use whenever entering almost any kind of information on the Series 3a:

- ←↑↓→move the cursor.
- The Delete key deletes the *character* (number, symbol or letter) to the left of the cursor.
- Shift-Delete deletes the character to the right of the cursor.
- Shift-← and Shift-→ start a *highlight* from the cursor position. Use this to highlight an area of text.
- Shift-↑ and Shift-↓ highlight whole lines of text.

More advanced editing keys

- Psion-← and Psion-→ move the cursor to the start and end of the line respectively. These keypresses are sometimes called 'Home' and 'End', and they are marked on the keyboard as such.
- Psion-↑ and Psion-↓ (marked 'Pg Up' and 'Pg Dn', for "Page Up" and "Page Down") move the cursor up and down by several lines at a time.
- Psion-Delete deletes to the beginning of the line, and Shift-Psion-Delete deletes to the end of the line.
- Control-Shift-Psion-← (hold down the Control, Shift and Psion keys, and press ←) highlights the current word. (The Control key, like the Psion and Shift keys, is used to modify other keypresses.)
- Control-Shift-Psion-→ highlights the current paragraph.



Control key

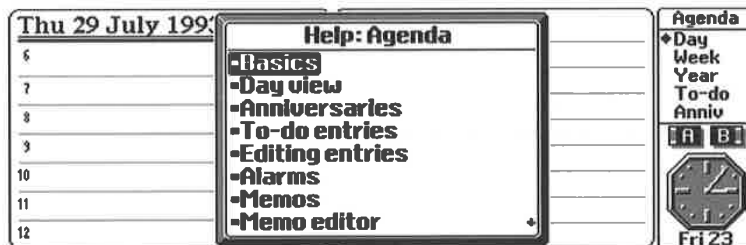
Help information

Whatever you're doing on your Series 3a, you can always display Help information.

When you press the Help key, a list of help topics for the screen on which you are working appears, like this:



Help key



Each topic is marked by a bullet (a small square).

- Use the $\uparrow\downarrow$ arrow keys to move the highlight up and down the menu of topics.
- Press the Enter key to look at help on a highlighted topic. A page of information, or a further list of topics will appear.
- Press Esc to remove a help screen. If you've been through several screens of help, Esc goes back to the previous one. Press Esc until they are all removed. A useful shortcut is Control-Esc, which always leaves help immediately.
- Control-Help presents a complete index of help topics.

Notes on menus and dialogs

Together, menus and dialogs give you access to all of the features of the Series 3a. You can select an option for whatever you want to do from a menu, or press its hot-key. The option you selected will then display a dialog if more information is needed from you.

Displaying a menu

Each application has a different set of menus. **If you press the Menu key, and use the arrow keys to look at the menu contents, the names of the options will usually suggest the features available.**

Whenever you press the Menu key, the highlight moves to the option it was on when you last used the menus.

Moving between menus

Use $\leftarrow\rightarrow$ to move between the different menus on an application screen.

- ☞ The Menu key itself cycles through the menus one by one. You can also press the Menu key and then a number to move to a particular menu - 1 for the leftmost menu, 2 for the next one, and so on.

Hot keys

You can find out which hot-keys go with which options by displaying the menus, then pressing a hot-key **without** holding down the Psion key. The menu and option which goes with the key you press will be highlighted.

Selecting on dialog lines

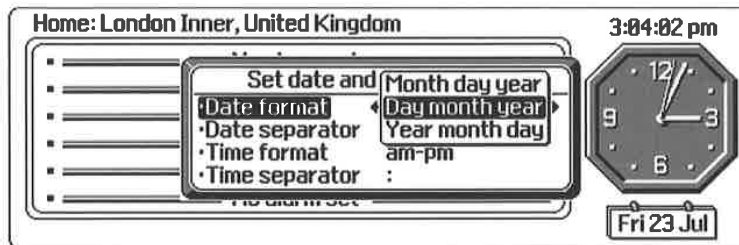
Many dialog lines, such as 'Time format', have little arrows around the setting, and can be changed by using ←→. **You can also type the first letter of the setting you require.**


If you want to see all of the possible settings in a vertical list, press the Tab key. Within the vertical list, you can use ↑↓ to move the highlight. Enter to pick the highlighted setting, or Esc to remove the vertical list.



Tab key

For example, if you press the Time button, choose the 'Formats' option, and press the Tab key when the highlight is on the 'Date format' line, you'll see the list of possible date formats, like this:



 You may see this called *tabbing out* a line of a dialog. The only cases where Tab does not work in this way are in options which list cities and countries, such as the 'Home city' option you used earlier.

Entering dates with the calendar

When entering a date in a dialog - for example, when you are setting the current date in the 'Set time and date' dialog in Time - you can press Tab to display a one month calendar. Then move to the date you want to enter, and press Enter to insert the date in the dialog.

Shift-Tab (or Tab twice) displays a three month calendar, while Control-Tab (or three Tabs) displays a 12 month calendar.

The ←↑↓→keys move in their respective directions, changing month and year where necessary.

To move from day to day, use Shift-←→. To move by a week at a time, use Shift-↑↓. Press Esc to remove the calendar without selecting a date.

Entering numbers in dialogs

You can type numbers directly into dialog lines if you wish, but you can also use the > and < keys to increase or decrease the current number. (You don't need to use one of the Shift keys to get the > or < keypress, in this case.) If you hold down the Control key while pressing > or <, the number increases or decreases by 10 at a time.

These keypresses also work when typing each part of a date or time.

Unavailable dialog lines

Each line of a dialog begins with a bullet (a small square). Sometimes a dialog line is made unavailable because of the setting of a different line in the dialog. When this happens, the bullet is removed from the start of the dialog line. If you try to set or change this line, a message will remind you that it is unavailable.


You can see this in the 'Set the sound' dialog on the System screen. To display it:

1. Press the System button to move to the System screen.
2. Select the 'Sound' option on the 'Control' menu.



If you press the → key to change the setting on the 'All sound' line to 'Off', you will see that the bullets are removed from the start of the other dialog lines. They are unavailable because of the setting on the 'All sound' line.

3. Press Esc to remove the dialog from the screen **without** confirming the settings in the dialog.

 When you're filling in information in a dialog, you must complete the dialog (by pressing Enter to confirm, or Esc to cancel) before you can select other options with the Menu key or with hot-keys. You can, though, use the application buttons to move to other applications.

How information is stored

Information may be stored on the internal disk and on Solid State disks.

The internal disk

Your information is initially stored on the *internal disk* of the Series 3a. Each separate collection of information - for example an address book, a Word Processor document, and so on - is stored separately as a *file*. Each file has a *filename* to identify it. (*Filename* is sometimes written as two words, *file name*.) You may create quite a few Word Processor or Spreadsheet files, and you may also have more than one Database, Agenda or even World file.

When you no longer need a piece of information, you can delete it. This might be an entire file, such as an unwanted Word Processor document file, or an item within a file, such as a single entry in an Agenda file. When you delete information, the space which it occupied on the internal disk can be re-used.

The internal disk is a part of the overall *internal memory* of the Series 3a. Other things need to use internal memory too - for example, each application needs some in order to get started.

If you enter so much information on the internal disk that the internal memory is almost filled up, you may see a 'Memory full', 'No system memory' or 'Disk full' message. Until you free some internal memory, you'll be unable to enter more information, or even use certain features of the Series 3a. Don't worry - your information is still perfectly safe. The 'Troubleshooting' chapter has suggestions on freeing internal memory in this situation.

Solid State Disks

You can use Solid State Disks (*SSDs*) to store any of the information normally kept on the internal disk - letters, address books, OPL programs etc. - whether the SSD is in or out of the Series 3a. You might wish to use SSDs to give you more room for storing information. You might also use them to store backup copies of important files, in case you accidentally change or delete them, or even lose your Series 3a.

SSDs are plugged into sockets on either side of the Series 3a, behind doors marked A and B. These sockets are called *SSD drives*.

SSDs are described in more detail in the 'Files and disks' chapter.

How safe is my information?

It is difficult to delete information accidentally on the Series 3a. If you press the hot-key for a 'Delete' option, or do anything else which would delete information, the Series 3a will usually ask you to confirm that you really want to delete it, before going any further. When it does not ask for confirmation, the deleted information will be stored on a *clipboard* and there will be an 'Insert' option to put it back again. So don't be afraid to experiment a little, as you find your way around.

However, it is a very good idea to make *backup* copies of your information. If you do this you can then recover any information that is lost from the internal disk and you will not lose the information you have entered if you lose your Series 3a altogether. You can backup information to SSDs, or via *3 Link* (the Series 3a communications link) to other computers.

The Series 3a is a robust portable computer. However, like most computers, it is not waterproof. If you damage the hardware, for example by getting it wet or dropping it onto a hard surface, you could lose your information.

Displaying a status window

Whichever application you are using, you can almost always display a *status window*, which shows the current time and date, among other things.

Some applications show a status window when you first use them, and some don't.

Turning the status window on and off

Use Control-Menu to turn the status window on and off, and change its size.

1. As an example, press the Calc button. You will see the status window for the Calc application on the right of the screen.
2. Press Control-Menu once. The status window shrinks to half its former size.
3. Press Control-Menu again. The status window is turned off so that you can use the whole of the screen to show information.
4. Press Control-Menu to turn it on again.

You cannot turn a status window on within the World and Time applications. (These applications show you the current time and date anyway.) Within other applications you may occasionally only be able to turn on a half-sized status window. This happens when most of the screen is needed to display information.

Displaying a status window momentarily

You can always press Psion-Menu to make a status window appear for a few seconds.

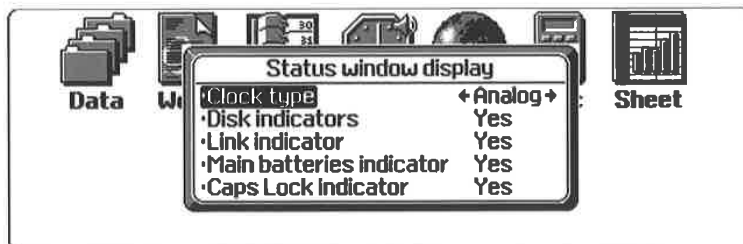
What the status window shows

As you'll see, the status window always shows the time and date, and the name of the current application or file. It also shows the names of the different views or screens available in the current application by pressing the ♦ key; if there are none (as in the Calculator), the application's icon is shown instead.

The status window can also show a "Caps Lock" indicator, the status of the main batteries, whether SSDs are present, and whether a 3 Link lead is connected. You can use the System screen's 'Status window' option to control whether these are shown.

Changing the type of clock in the status window

1. Press the System button to move to the System screen.
2. Select the 'Status window' option on the 'Control' menu. A dialog will appear, like this:



- The highlight is initially on the 'Clock type' line. Press → a few times and you will see the 'Clock type' change between 'Analog' and 'Digital'. (Analog clocks are clocks with hands.)
- Leave the 'Clock type' line on your preferred setting and press Enter to complete the dialog.


Changing the batteries

The battery life depends on the way you use your Series 3a. Playing sounds, using 3 Link, and writing information to Flash SSDs all use more power, and so reduce battery life.


Battery levels

When the power (voltage) of the main batteries gets low the Series 3a will display a low battery symbol - an empty-looking battery - in the status window. If you use the 'Battery info' option on the 'Info' menu in the System screen, the reading for the main batteries will have changed from 'Good' to 'Low'.

When the battery power is approaching the absolute minimum, the low battery symbol will start to flash, and a 'Replace main batteries' message will be shown whenever you turn on the Series 3a. The 'Battery info' dialog will show 'Replace!' for the main batteries.

 When you are using alkaline batteries under *high load* (eg playing sounds, or writing to Flash SSDs) they may lose voltage, but **recover** voltage when the load is reduced. The Series 3a knows when this is happening, and takes this into account when working out battery levels. Once the Series 3a decides the batteries really are 'Low', this setting is locked, even if the batteries were to recover voltage slightly. (They also "lock" in this way to the 'Replace!' reading.)

When the battery voltage becomes too low to power the Series 3a, it will turn off. You will initially be able to turn it on again when the batteries have recovered sufficient voltage. Soon it will turn off and refuse to turn on again.


 At this point, alarms will not go off until you have changed the batteries (or inserted a mains lead) **and turned the Series 3a on at least once.**

You can still use a mains adaptor if you need to use the Series 3a before you can replace the batteries.

There are separate 'Batteries too low for digital audio' and 'Batteries too low to write to Flash' warning messages. These are described in the 'Record' and 'Files and disks' chapters respectively. **If you use a Flash SSD be sure to read about the 'Batteries too low to write to Flash' message.**

Usage monitor

The 'Usage monitor' option on the 'Info' menu in the System screen gives information on your pattern of battery use, including the time the Series 3a has been used on battery power, the estimated total amount of battery power used (in milliAmp-hours) and the average battery current (in milliAmps). If you press P in this dialog, you can see the final readings for your previous set of batteries.

 The Series 3a can only estimate (not measure) the amount of power it is using for different activities.

When to change alkaline batteries

If you are using alkaline batteries, do not be alarmed by the low battery symbol in the status window. It appears when you have used approximately 80% of the batteries' power. Unless you are trying something which requires a lot of battery power - such as using 3 Link - the Series 3a will continue to work for some time.

When the batteries are approaching their absolute minimum power, the 'Replace main batteries' message appears. Change the batteries. (If you have new batteries ready, and you're not relying on alarms, you can even wait until the Series 3a starts turning off from low power, before you change the batteries.)

When to change rechargeable batteries

Rechargeable batteries are not charged while in the Series 3a. If you use rechargeable batteries, you must replace them when they become low with freshly charged ones. If you were to use just one pair of batteries, and you took them out to recharge them, the backup battery would eventually run down and you would lose your information. It is therefore a good idea to have two sets of batteries which you can swap over when the pair in the Series 3a needs recharging.

Rechargeable batteries have a lower voltage to begin with, and may cause the "low battery" state after a comparatively short time. They are also less predictable than alkaline batteries - rechargeables may last for a long time without displaying a warning, then fade so rapidly that hardly any warning messages can be shown. You may wish to use the 'Usage monitor', and compare the estimated 'Total battery used' setting with that of your previous set of rechargeables: this will give you advance warning of when your batteries are likely to fail.


Inserting the new main batteries

Have your replacement batteries ready before you take the old ones out.

1. Press Psion-1 (the OFF keypress) to turn the Series 3a off.
2. Clip off the main battery cover, remove the old batteries and replace them with the new ones.

If you like to check your power usage with the 'Usage monitor' option on the 'Info' menu of the System screen, you must leave the old batteries out for at least two or three seconds before inserting the new ones, so that the 'Usage monitor' resets.

The backup battery alone can preserve your information for many hours, so you don't have to rush when changing the batteries. Once you've replaced the main batteries you can carry on as before.

 When you turn on the Series 3a for the first time with new batteries, a 'Replace main batteries' message may still be displayed, but it will go away.


Changing the backup battery

If the backup battery becomes low, or is fitted incorrectly, the Series 3a will display a 'Replace backup battery' message occasionally, when you turn it on. This will be unusual, though, as the backup battery should last several years.

At this point, the backup battery's reading (in the System screen's 'Battery info' option) can waver between 'Good' and 'Replace!' as its voltage can change under load. It will soon consistently read 'Replace!', though.

You should change the backup battery within a week or two of it becoming low. **Have your replacement battery ready before you start.**

1. Press Psion-1 to turn the Series 3a off.
2. Turn the Series 3a over, and open the door marked B . Lever out the old battery, with a fingernail or a blunt non-metallic instrument, and insert the new one. Make sure that the flat side of the backup battery, usually marked with a + symbol, faces upwards.

 While the backup battery is removed the main batteries are preserving your information, so you don't have to rush this.

Changing both sets of batteries

If both the main batteries and the backup battery are low, you can change them in any order, but not together. **You should never remove the main batteries and the backup battery at the same time.** If you do, the Series 3a will be completely without power, and after a few seconds it will lose all of the information in internal memory.

2

World

World displays a map of the world, and gives you the following information on about 500 cities:

- **Dial code (from the home city).**
- **Current time.**
- **Position on the map, and distance to the home city.**
- **Sunrise and sunset times.**

The World screen

When you press the World button, you see a screen like this:



On the right-hand side of the World map, beneath the 'Home' heading, is a column of information about the Home City:

- Sunrise and sunset times.
- A running clock, showing the current time.
- The day of the week, and the day of the month.
- The Home city and country names.

On the left-hand side of the World map, beneath the 'City' label, a similar column of information is given about the currently displayed city, with the addition of an 'am' or 'pm' indicator beside the clock.

A flashing cursor marks the position of this city on the World map.

The cities which World knows about are stored alphabetically. The first time you use World, the first city in the list is shown.

In the lower centre of the screen is the dial code to call the displayed city from your home city. This is prefixed with a phone symbol.

Below the dial code is shown the distance between the two cities. This is calculated using the stored longitude and latitude of both cities. The distance is shown in either kilometres, miles or nautical miles - use the 'Distance units' option on the 'Special' menu to specify which measurement.

 A status window can be shown temporarily by pressing Psion-Menu. You cannot display a status window permanently in World; Control-Menu has no effect.

Changing the formats of the clock

When you first use the World application, the time format will be am-pm and the clock format will be analog. You can change the time format to 24 hour if you wish, with the 'Formats' option on the 'Set' menu **in the Time application**. (The 'Formats' option also allows you to change other time and date formats.) You can change the clock format if you wish, with the relevant clock format option on World's 'Special' menu.

Changing the displayed city or country

You can change the city or country currently displayed in three ways:

- Position the highlight on either the city or the country line and press the ←→ keys. These keys step through the alphabetical lists of cities and countries.
- Position the highlight on either the city or the country and start typing the name of the city or country you want to find. As you press each key, the cursor moves to the right, and the Series 3a will try to find a name which matches the letters you have typed.


The Delete key deletes the last letter typed, moving the cursor to the left. Use Esc to move the cursor back to the start of the city or country name, if you want to type a different one.

If at any point the Series 3a can't find a city/country to match the letters you've typed, it will beep.

If you're typing in country names, the capital cities are displayed, together with their time, dial code and so on.

- You can look at all of the cities World knows about for a particular country. Position to a city in the country you want, then press the ♦ key (or select 'Current country only' on the 'Edit' menu). This locks World to this country, displaying the text (only) after the country name. While locked, you can only skip from one city to the next, by using the → key. When you have found the city you are looking for, press the ♦ key to release the lock. (Most other keys also release the lock.)


The clock on the left-hand side changes to show the time in the city currently shown. The position of the city is marked on the map, and the dial code, distance and sunrise/sunset are updated, after a short pause.

 A small number of cities are split into more than one area because they have more than one area code for dialling. London, for example, is split into London Inner and London Outer.

Country names

These countries are stored in the following way:

- **USA**, not United States of America
- **United Kingdom**, not UK, GB, England etc.

 A few small countries may be shown only as a city, in the country whose national dial codes they share, Andorra, for example, is shown with France as the country name.


Setting your home city

1. Position to the city you wish to set as your home city.
2. Select the 'Set home city' option on the 'Special' menu.
3. Press Y to confirm your choice and your home city will be set.

The 'Set home city' option has the same effect as the 'Home city' option in **Time**, and it can cause the current time to change. It is included in World for the sake of convenience. If you travel, set a new home city whenever you change country, or move to a different time zone, to keep the time and dial codes correct.

Summer times

Most countries set their times forward by an hour during their summer. The timing of these 'summer times' (or 'daylight saving') in different countries is not something that can be calculated precisely, so the Series 3a cannot automatically change times to allow for it.

 If you are not going to travel or make use of world times, summer times will not affect your use of the Series 3a, so you do not need to set them.

Fortunately, countries can be grouped into three zones - European, Northern and Southern - in each of which summer times change at around the same time. World knows which zone each city is in. The Series 3a lets you set summer times on or off for each of these zones.

Setting summer times

1. Select the 'Summer times' option on the 'Set' menu **in the Time application**.
2. You should set summer times 'On' for **approximately** these periods:

Northern	early April - end of October
Europe	end of March - end of September
Southern	late October - end of February


If you set summer times on and off according to these dates, your World times should in general be correct. If you know the exact changeover dates for countries you're interested in, you can set the changeover accurately.

If the summer time setting for your home city is temporarily (or even permanently) different to that of the zone it is in, you can also use the 'Summer times' option to override the setting for your home city. Set the 'Home is' line to 'On' or 'Off'.

If the current city in World has summer time on, an 's' is shown next to its clock, at the left of the screen.

To see which zone a city is in select the 'Update city' option on the 'Edit' menu. (Cities are in the zone which best matches their changeover dates, not their geographical position.) Since 'Update city' lets you change the information displayed, press Esc to quit the dialog.

Important: the easiest way to use summer times is to think of World as two hemispheres - Northern/European combined, and Southern. When clocks go forward in your Home city, set your hemisphere 'On', and the other 'Off'. When clocks go back again, set your hemisphere 'Off, and the other 'On'. Some World times will then occasionally be wrong by an hour, but that is all.

 If you change the summer time settings of your home city in any way. the time on the Series 3a will change accordingly by an hour. If you didn't want this to happen, use the 'Time and date' option in the Time application, and set it back.

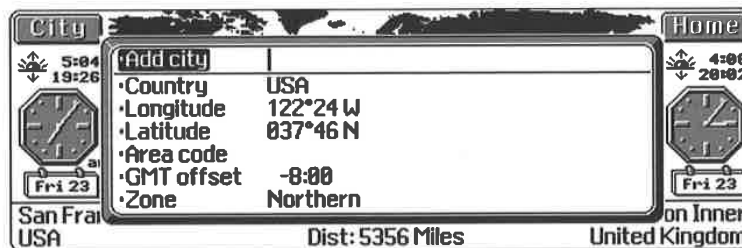
Adding and changing information

Adding a city

If your own home town or city is not known by World, you can add it with the 'Add city' option. You'll be asked for longitude and latitude. GMT offset (the hours ahead of or behind London's "Greenwich Mean Time") and zone for summer times. Don't worry if you don't know all of these - **before** you choose 'Add city', you can estimate these from the settings of a city near yours.

1. Find a city near to your own which World does know about.
2. Select the 'Add city' option on the 'Edit' menu. The dialog suggests the longitude and latitude (etc.) of the city you've just found, and this should be approximately right. It's worth entering the longitude and latitude because they are used to calculate distances and sunrise/sunset times.

The 'Add city' dialog looks like this:




3. Type the name of the city on the top line. If you've "borrowed" information from a nearby city, as suggested above, you can leave the longitude and latitude, and the GMT offset. If you want to change longitude and latitude, just type the digits concerned. Wherever the cursor is on the line, you can type W or E for longitude, and N or S for latitude. Similarly, if you change the GMT offset, you can type + or -.
4. To enter the area code, type it as you would dial it when in the country concerned.
5. In general, you should set the summer time 'Zone' for new cities to 'As country'. It will then have the same summer time as the rest of its country. (If you set this to 'Constant', summer times are ignored for this city.)
6. Press Enter. A flashing marker is now displayed on the world map. Use the ←↑↓→ keys to move it to the correct position for the new city. To move the marker by greater distances you can hold down the Control key while using ←↑↓→. When the marker is correctly positioned press Enter.

'Adding' a country

Strictly speaking, you cannot add a new country to World. You can, however, modify the details of a country that is already there using the 'Update country' option. Before doing this, it may be helpful to look at a country which you know is near the one you wish to add, and note its zone for summer times, and its GMT offset. You can then use these in the 'Update Country' dialog.

1. Select a country, preferably one which you don't expect to use.
2. Select the 'Update country' option on the 'Edit' menu.
3. Enter the details of the country you wish to add. Don't worry which city is shown as the capital city, for now; you can add the real one later after you have entered it as a

new city. Enter the national phone code used to call this country from abroad (4 4 for the UK). Also give the national (STD) prefix, and the code used when starting an international call (010 in the UK). Enter the GMT offset and the summer time zone.


 The dialling codes are entered with country details so that international dialling works. See the 'Dialling' chapter for more information.

4. Use the 'Add city' option on the 'Edit' menu as described earlier to add the capital city of the new country. Select the 'Update country' option again and set the new city as the capital of the country.

Changing city or country information

You can use the 'Update City' or 'Update Country' options on the 'Edit' menu to enter city or country details that have changed, such as dial codes.

The 'Update City' option requires the same information as 'Add City'.

 If you use 'Update Country' and change the GMT offset of a country, all cities in that country will have their current times changed by the same amount. If you change a country's summer time 'Zone', its current time may change; all cities in that country which have their 'Zone' set to 'As country' will also change.

Added/changed information


Information entered using 'Add city', 'Update city' and 'Update Country' is kept as a file. Unless you specify otherwise, it is kept on the internal disk, with `World` as the filename. It can contain information on up to 32 new or changed cities/countries.

You can, if you wish, make more than one file of added/changed information. Use the 'New file' option on the 'File' menu. Any future changes would be saved in this file. If your home city is in your current World file, because you added or updated it, it will be copied into this new file.

Any files you create appear in the file list under the World icon on the System screen.

The 'Open file' option on the 'File' menu lets you specify which file to use.

You can keep the file or files on an SSD, if you like: to do this set the 'Disk' line, in the 'New file' or 'Open file' dialog, to the *SSD drive*, A or B, containing your SSD. This frees more internal memory for other information. Note, though, that the whole file is saved every time you make a change.

 World files are closely linked to the particular version of the Series 3a on which they are made, and may not work on other Series 3a machines.

Deleting added or updated information

1. Find the city that you wish to delete and select the 'Delete city' option on the 'Edit' menu.
2. Press `Y` to confirm that you want to delete the city.

Use 'Delete city' to delete a city you've added, or if you've **updated** a city but wish to revert back to its original information. You can't delete an added city if it is set as your home city.

You can remove all of the added/updated information by deleting or renaming the file from under the World icon in the System screen. Exit the World application first.

3

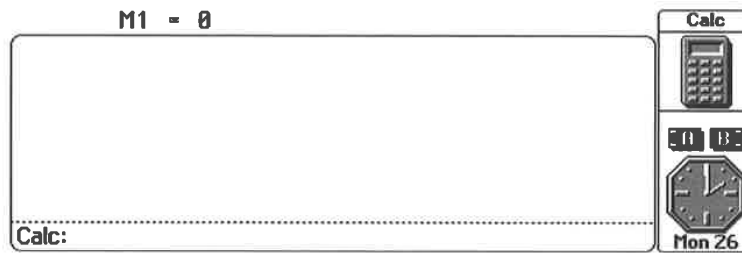
The Calculator

You can use the Calculator in a similar way to a pocket calculator. It includes the following features:

- **Complex scientific calculations.**
- **A list of the calculations you type and their results. You can copy calculations or values from it into new calculations.**
- **Ten calculator memories. You can give them meaningful names, if you like, and use these names in your calculations.**
- **Access to OPL functions and your own OPL procedures.**

The Calculator screen


When you press the Calc button, you see a screen like this:



The bottom line of the screen has a flashing cursor. It's here that the calculations you type are shown. The area in the centre of the screen is used to show a list of any previous calculations.

Characters which represent arithmetic operations, like +, -, * (multiply) and / (divide), are called *operators*.

While typing in a calculation, you can use the editing keys as described in Chapter 1.

 The \blacklozenge key has no effect in this application. Control-Menu works as in most of the other applications by turning the Status window on and off, and changing its size.

The Esc key clears the whole of the calculation line you've typed. If you do this by mistake, a second Esc will restore the calculation.

Changing the size of characters

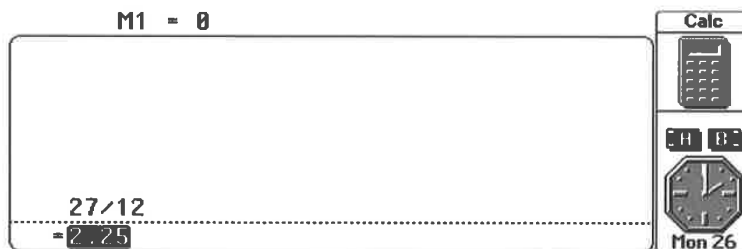
You can change the size of characters on the screen with the 'Zoom in' and 'Zoom out' options.

Whichever size you choose, the list will always hold up to 10 previous calculations.

Results


Results are **only** calculated when you press either Enter or the '=' key. You may find Enter more convenient than '=' not only because it's a bigger key, but also because it's then easy to use the calculator with one hand; you don't need the Shift keys to use the +, -, *, / and Enter keys.

The result is highlighted on the bottom line. If, for example, you type 27 / 12 and press Enter, the screen looks like this:



When you press the next key, the result will be copied onto the list of previous calculations. What happens to the bottom line, though, depends on the type of key you press:


- **To re-edit the previous calculation:** press ← or →.


 You can also use Psion-← (Home) and Psion-→(End) to move to the start and end of the line.

- **To use the result as part of a new calculation:** type the operator that you want to use and the next number: they will appear at the end of the result just obtained. For example, type +5 to add five to the result of the previous calculation.

You might instead choose an option from the 'Powers' menu, for example the '1/x' option, as it will also act on the result. For example, with 12 as the result, choosing the 'Square root' option would change the bottom line to $\text{sqr}(12)$, while the 'x²' option would change it to $(12) ** 2$. (Two asterisks-** - mean "to the power of".) To see the result in decimal form press Enter.

- **To begin a new calculation:** start typing a new number. The old result is removed from the bottom line.

 If the new calculation begins with a negative number, you'll have to press Esc first; you can't just type the minus character, as this would use the old result as part of a new calculation.

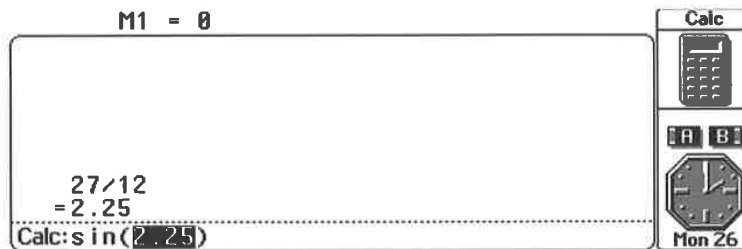
 Unlike pocket calculators, you **don't** have to break down complex calculations into a long sequence of calculations. Consider the calculation $33 / (0.7 + 8.4)$. On most pocket calculators you have to think about how to enter even this simple calculation. On the Series 3a. you just type the whole thing and press Enter.


Errors

If you accidentally type something which cannot be calculated, such as $7 - * 5$, you'll see an error message such as 'Syntax error' at the bottom right of the screen. The cursor is positioned to the point where the error occurred, so you can easily edit the calculation.


Calculations using the menu options

When you have a highlighted result, menu options such as 'Sin(x)' will act upon it; their brackets go round the result. For example, if you have 2.25 as the highlighted result, and you select the 'Sin(x)' option, the calculation becomes $\text{sin}(2.25)$, like this:



 If you're typing a new calculation and you select a menu option like 'Sin(x)', it is inserted at the cursor position. The brackets are inserted too, and the cursor is moved between them.

If you know the hot-keys, they can save you some typing time. For example, the 'Cos(x)' option has the Psion-C hot-key; to do the calculation $3 / \cos(40)$ you could just type 3 / , press Psion-C, type 4 0 and press Enter.

 You can create a highlight by using Shift-← or Shift-→. Most Menu options will then act upon the figures contained in the highlighted area.

The list of previous calculations

Each calculation you enter, and its result, is added to the bottom of the list. Up to ten calculations and their results (20 lines) can be kept on the list. The screen can only display a few lines, but you can scroll a highlight up and down the entire list with $\uparrow\downarrow$.


You can retrieve values or calculations from the list, for use in future calculations. Press \uparrow , until the highlight reaches the value or calculation you want, then **press Psion-Enter**. (Alternatively, select the 'Copy from list' option on the 'Special' menu.) The highlighted characters will appear on the bottom line as if you had typed them one by one.

- If you had just calculated a result, it would be replaced by the value or calculation that you retrieved from the list.
- If you were typing a new calculation, the highlighted characters would be inserted at the cursor position.

Other options:

If the highlight is on an item in the list, you can use the Tab key to move the highlight back to the bottom line.

You can use the menu options on calculations or results in the list. The result will replace any result or highlight on the bottom line, or will be inserted into any new calculation that you are typing.

 You can use Psion- \uparrow (Pg Up) and Psion- \downarrow (Pg Dn) to move up and down the list a screenful at a time. Control-Psion- \uparrow and Control-Psion- \downarrow go to the top and bottom of the list.

Clearing the list

You can clear the list with the 'New list' option on the 'Special' menu.

Trigonometric functions

The options on the 'Trig' menu can work either with degrees or radians. Initially, they work with degrees. Use the 'Use radians' option on the 'Special' menu if you want to work in radians. Once used, the option's name changes to 'Use degrees'. Select the option again to return to using degrees.

For the value of the constant 'pi', just type PI . For example, $\text{SIN}(\text{PI}/2)$ gives 1 (when using radians).

Precedence of operators

Some calculations which use more than one operator produce different results according to the order of the calculation. $7+3*4$ gives 40 if you work out the addition first: $7+3$ is 10, and $10*4$ is 40. However, if you work out the multiplication first, the result is 19.

The Series 3a performs a calculation according to the *precedence* of operators:

Highest: **
 - (make negative, as in -45)
 * /

Lowest: + -

Multiplication ($*$) has higher precedence than addition, so if you type $7+3*4$ the multiplication is done before the addition, and the result is 19.

Where operators have equal precedence they are worked out from left to right. So $7-3+2$ gives 6 (not 2) as the result. Powers, however, are calculated from right to left, so $2**3**2$ is 512 ($2**9$) not 64 ($8**2$).

You may want to use brackets either to make it obvious what the order of calculation is, e.g. $7+(3*4)$ or to change the normal order of calculation, e.g. $(7+3)*4$.

Any number of levels of brackets may be used - for example, $7-((3+2)*8)$


Other operators

These operators give -1 (for 'True') or 0 (for 'False'):

> greater than

< less than

For example, $3>2$ gives -1 ('True'), as 3 is greater than 2.

 You can't use the = (test for equality) operator, as it is used to terminate calculations.


Using the SERIES 3a as a pocket calculator

You can use the Series 3a like a pocket calculator, if you really want to, but **you must press the Enter key (or '=' if you prefer)** after each stage of a calculation.

Consider the calculation $(33-7)*2$:

On a pocket calculator you might type this as $33-7=*2=$. The first time you press '=', the result of $33-7$ is shown (26). When you press the final '=', the result of $26*2$ is shown (52). **This is how you should type the calculation on the Series 3a.**

However, on many pocket calculators you could miss out the first =, and just type $33-7*2=$. Here the result of $33-7$ is shown as you type the '*', and you get the same final result. **This will not work on the Series 3a.** because the * operator has a higher precedence than the - operator.

 The various menu options - 'Sin', '1/x' etc - only work on a highlighted result. If you've just calculated a result and you want to find its sine, you can choose the 'Sin' option (Psion-S) and press Enter. If, however, you want to find $\text{Sin}(45)$, it's quickest to press Psion-S, type 45 and press Enter.

Calculator memories

Saving results

Use the memories to save results which you want to re-use later.

If you just want to use one memory, use the 'M in', 'M +', 'M -', 'M clear' and 'M recall' options, on the 'Memories' menu. You'll soon get used to their hot-keys. The current value within the memory is shown at the top of the screen.

These memory options normally use the result displayed on the bottom line. If you are typing a calculation when you select a memory option, the result is calculated and this value is used. However, if you move the highlight up onto a previous calculation, the memory options will use the result of the highlighted calculation.

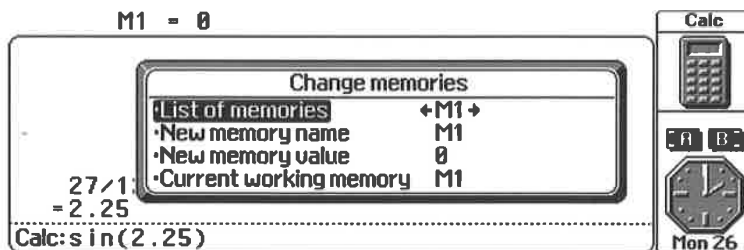
There are ten calculator memories, called 'M0', 'M1', 'M2' and so on, up to 'M9'. The name of the current working memory (initially 'M1') is shown, with its current contents, at the top of the screen. 'M in', 'M +' etc. work on this memory.

You can use the memory names in calculations - e.g. $25 + M2$.

The memories retain their values even if you use the 'Exit' option.

Changing the 'Current working memory'

1. Select the 'Change memories' option from the 'Memories' menu:



2. Move the highlight down to the 'Current working memory' line and type in the memory that you want to use. For example, set it to 'M4'. 'M4' will then be shown at the top of the screen, and 'M In', 'M +' etc will now work on this memory.

Changing the memories ' names

1. Select the 'Change memories' option on the 'Memories' menu.
2. Find the memory whose name you wish to change on the 'List of memories' line.
3. Move the highlight onto 'New memory name' and type the new memory name that you want to use.
4. You might also want to set the 'Current working memory' line to this memory, before pressing Enter to confirm the changes and remove the dialog.

You can now use the memory's new name in calculations. For example, you might change 'M0' to 'tax', and set the value in this memory to 0.175 ; the calculation $2500 * tax$ would then give the result 437.5 .

New memory names

Memory names may be up to 8 characters long, must start with a letter and can contain only numbers and letters.

If you try to use a name which is the same as an OPL function, or if you use an unsuitable character such as + , you'll see an error message such as 'Invalid character'. Choose a different name instead.

Percentages

The percentage operator can be used like this:

$60+5\% = 60$ plus 5% of 60. Result: 63
 $60-5\% = 60$ minus 5% of 60. Result: 57
 $60*5\% = 5\%$ of 60. Result: 3
 $60/5\% =$ what number is 60 5% of. Result: 1200.

It can also be used like this:


$210>5\%$ - what number, when increased by 5%, becomes 210. Result: 200
 $210<5\%$ - how much of 210 was a 5% increase. Result: 10.

Examples

To add 15% tax to 345: $345+15\%$. Result: 396.75.

To find out what the price was before tax: $396.75>15\%$. Result: 345.

To find out how much of a total price is tax: $396.75<15\%$. Result: 51.75.

 To use the % operator with memory names, put a space before it. For example:
 $5+M1 \%$.

Very large and very small numbers

Don't use commas when you are entering large numbers. If you use the value 1,000,000 in a calculation (note the commas), you will see a 'Syntax Error' message.

If you need to use very large or very small numbers, use e (capital or lower case) as the *exponent* in a number. An e usually follows a number between 1 and 10, and is itself followed by another number. The e means "times ten to the power of". Its effect is to move the decimal place in the first number to the right, by the number of places specified by the second number. For example, $3.14159e3$ means 3141.59 .

 Note that $3.14159e3$ is all one number, and has no spaces.


You may have to imagine extra zeros (or even the decimal point itself) in the left-hand number, to visualise the number. For example, if you think of $1e5$ as $1.00000e5$, you can then move the decimal place and see that it means 100000 .

If the second number is negative, you must move the decimal place to the *left* to work out the number. For example, $4.1e-5$ is 0.000041 . Again, $4.1e-5$ is just a number, *not* a calculation, and it has no spaces.

Exponents are a convenient way for expressing very large and very small numbers. The calculator can handle numbers as big as $9.999999999999e99$ and as small as $1e-99$. It can also handle negative numbers as big as $-9.999999999999e99$ and as small as $-1e-99$. If a result or a number you enter is larger than these ranges, the

message 'Overflow' is displayed. An 'Underflow' or 'Bad number' message is shown if non-zero numbers are smaller than $\pm 1e-99$.

In a very large result, the positive exponent is displayed with a + sign- $1e+10$ and $1e10$ being the same number.

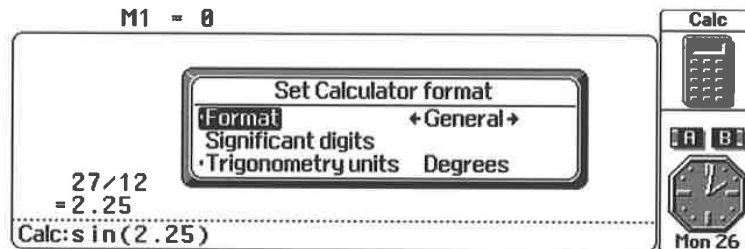
 When using a number between 0 and 1 in a calculation, you can miss out the 0 - you can use .5 instead of 0.5, and so on.

Decimal places and number formats

Calculations are accurate to at least 12 digits.

Results are initially shown in 'General' format, showing as many decimal places as necessary, up to the maximum of 12. For example, $1/3$ gives 0.333333333333 , while $1/4$ gives 0.25 .

Use the 'Format' option in the 'Special' menu to specify the way you want the results of your calculations to be shown:



- **General:** as many decimal places are displayed as were calculated. Large or small numbers are shown as exponentials, e.g. $1.1E+30$.
- **Hexadecimal:** results are shown as hexadecimal whole numbers (see below).
- **Fixed:** results are shown to the number of decimal places you specify on the 'Decimal places' line. The accuracy is still 12 digits, and results are rounded, if necessary, to ensure that there are the correct number of decimal places.
- **Scientific:** results are always shown as exponentials to the number of *significant digits* - digits either side of the decimal point - you specify on the 'Significant digits' line. The result may be rounded to ensure that this happens. The minimum number of significant digits is two.

Hexadecimal numbers

Hexadecimal numbers, also known as base 16, are sometimes used by programmers. They are explained under HEX\$ in the 'Alphabetic Listing' chapter of the Programming Manual.

You can use hexadecimal numbers in **any** calculation, regardless of the format used for results. For example, $\&F9*2$ is the same as $249*2$, and gives the same result - 498, or $\&1F2$ in hexadecimal format.

An arithmetic operation between two hexadecimal numbers **always** gives a whole number result. So whereas $3/2$ and $\&3/2$ give 1.5 as the result, $\&3/\&2$ gives 1

Other functions

OPL functions

The mathematical functions in the calculator (SIN, COS and so on) are provided by OPL - they are the same 'words' you would use in an OPL program.

There are two types of words used in OPL:

commands - which just perform an action, and


functions - which *return* a value of some kind.

The functions themselves come in two varieties:

string functions - which return a string of characters, and

numeric functions - which return a number.

You can use any numeric OPL function from within the calculator. Most require you to specify one or more values to work with, in order to return a number to you. To do this, as you've seen with functions like SIN, you put the number(s) in brackets after the name of the function. If you're using more than one number, separate them with commas.

 You can experiment with any and all of the numeric functions, though most non-mathematical ones will either not work from the calculator, or do nothing useful. However, **do not use the CALL, OS or USR functions. These are for advanced use only, and if you are careless with them you may lose some or all of your information.**

OPL functions can produce a wide range of error messages. These are documented in the Programming Manual.

List functions

These work with lists of numbers. To use them simply type the name of the function, and then type the numbers on which they are to act in brackets, separated from each other by commas.

MAX	The greatest item in the list, e.g. MAX (2 , 8 , 4) gives 14 .
MIN	The smallest item in the list, e.g. MIN (2 , 8 , 14) gives 2 .
MEAN	The mean (average), e.g. MEAN (2 , 8 , 17) gives 9 .
STD	The sample standard deviation, e.g. STD (2 , 8 , 14) gives 6 .
SUM	The sum, e.g. SUM (2 , 8 , 14) gives 24 .
VAR	The variance, e.g. VAR (2 , 8 , 14) gives 36 .

Date and time functions

Typing these functions gives the date and time as kept by the Series 3a:

DAY. MONTH. YEAR. HOUR. MINUTE. SECOND

For example, on 3rd September 1990 typing DAY gives 3 , MONTH gives 9 and YEAR gives 1990 .

At 3:42:56 pm typing HOUR gives 15 , MINUTE gives 42 and SECOND gives 56

Other date and time functions, such as DAYS, may also be useful occasionally.

'Evaluate' in other applications

The Calculator and Spreadsheet are not the only places on the Series 3a where you can perform calculations. The Database, Agenda and Word Processor each have an 'Evaluate' option, for working out single calculations. In the Word Processor, you can

type a list of numbers to add or subtract, like this:

```
25.76
+10.00
+121.09
-43.71
```

You can sum this list by highlighting it and selecting 'Evaluate'.

Using your own OPL procedures

If you have an OPL module containing procedures which return a number of some kind, you can use these modules in the Calculator. You can also pass values from the Calculator to parameters in the procedures.


To make your module available for use, select the 'Load OPL' option from the 'Special' menu, and enter the name of the module.

For example, there is no operator for "modulus" - the remainder after a division of whole numbers (9 modulo 4 is 1). You might write and translate an OPL module containing this procedure:

```
PROC mod: (a, b)
    RETURN a-INT(a/b)*b
ENDP
```

Once you've used the 'Load OPL' option and given the module name, you can, for example, type `mod: (9, 4)` and get a result of 1.

If you need to use more than one module, the module you specify with 'Load OPL' should use the OPL LOADM command to load any other modules itself.

 If an error occurs in one of your own procedures, the cursor is positioned to the start of the calculation line.

To "unload" the OPL module you have loaded, you must exit the Calculator.

'Module does not exist'

If you load an OPL module in the Calculator, it must be available for **all** future calculations. If you delete it, or remove the SSD on which it is stored, a 'Module does not exist' message will be shown **on every future calculation**. There are two ways to solve the problem:

- Reinsert or recreate the translated OPL module.
- Exit then re-open the Calculator.

Passing parameters to OPL

All parameters passed from the Calculator to procedures which it calls are by default passed as *floating-point* numbers.

If a procedure is declared as requiring a long integer parameter, use the INT function on the number you wish to pass - for example, `myproc: (INT(101500))` .

4

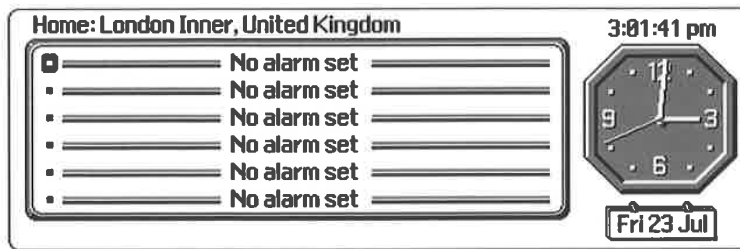
Time and alarms

The 'Time' application provides access to everything to do with time on the Series 3a:

- **You can set the time, and the way times are displayed.**
- **You can say which days are workdays, and which day the Series 3a should use as the first day of the week.**
- **You can set your home city, and turn summer times on and off.**
- **You can use your Series 3a in place of an alarm clock, anywhere you take it. You can set up to six alarms and make them repeat automatically, even on workdays only.**
- **You can see alarms that have been set in other applications on your Series 3a.**

The Time screen

When you press the Tune button, the Time screen is shown:



The Time screen shows the current time, as both a digital and an extra-large analog clock. The date and home city are also shown.

The centre of the screen shows information on the six alarms you can set. If you set any alarms here, or on Agenda entries, a reminder of the time until the next alarm is shown below this.

- ☞ All time information is shown on one screen, so the ♦ key has no effect. You can't use Control-Menu to show a permanent status window; the time and date are already shown on the Time screen. As always, though, you can press Psion-Menu to make a status window appear for a few seconds.

The current time and date

The current time is affected by your choice of home city. You can use the 'Home city' option on the 'Settings' menu to set this. If the Series 3a beeps when you try to type the city name, it does not know about the city. Press Esc. You then have two alternatives:

- Enter the name of a larger town or city near your own.
- or
- Add your own town/city. See the 'World' chapter for more details.

The 'Time and date' option on the 'Settings' menu sets the current time and date. If you have not already done so, use this option now. You can also use the 'Formats' option to say how times and dates are to be displayed - as '24-hour' or 'am-pm' for example.

You don't have to use the Time application to see the current time. Whatever you're doing on the Series 3a, you can always press Psion-Menu to bring up a status window, which shows the time, for a few seconds. You can, in most places, press Control-Menu to turn on a permanent status window.

The Series 3a is accurate to within a few seconds a week. Use the 'Time and Date' option again if you ever need to correct the time.

The start of the week

The 'Start of week' option does not change the date, but sets the day on which you prefer weeks to start. You may, perhaps, wish to set it to Sunday or Monday. This setting will be reflected in the Agenda, and in the way week numbers change.

Setting summer time

The 'Summer times' option lets you set summer time on or off for the three zones - European, Northern and Southern. This controls the times of cities, as displayed in World.

It also lets you override the setting for your home city. If you're not concerned by some World times being wrong by an hour, you can forget the complexity of zones. Use the 'Summer times' option to change the summer time for your Home - on the first line of the dialog - and leave the three zones set to 'Off'.

There are more details on summer times in the 'World' chapter.

If you travel

If you travel to a different country or time zone, change the home city to your new location, or to a nearby city in the same country. The current time will change automatically, and the correct international dialling codes will be used.

Workdays

Monday to Friday are initially set to be workdays. Use the 'Workdays' option on the 'Settings' menu if you need to change this. Use ←→ to step through the days, and press R (rest day) or W (workday) for each. Press Enter when you're finished.

To see a vertical list of the seven days with their settings press Tab.

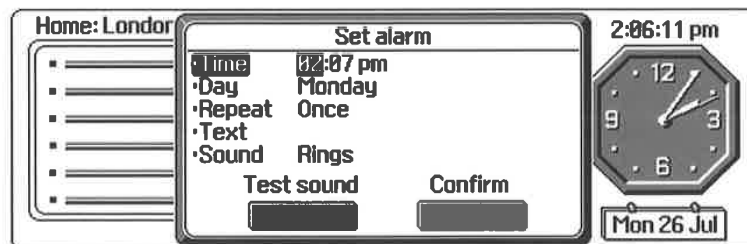
Alarms


Setting an alarm


The central area of the Time screen has six lines, to show the details of up to six alarms.

To set an alarm:

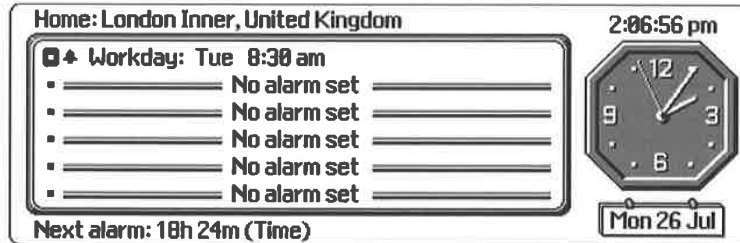
1. Move the highlight with ↑↓ to any line which says `No alarm set`. (Initially any line will do.)
2. Start typing the text for the alarm (if you want a text message), or start typing the time for the alarm. The 'Set alarm' dialog is shown. (The 'Set alarm' option on the 'Alarm' menu has the same effect.) The dialog looks like this:




3. Type the 'Time' for the alarm, and set the 'Day' for the alarm to ring. **If you use 'am-pm' format, don't forget the "am"/"pm" setting.**
 The alarm will **always** be set to ring some time within the next seven days. You can set an alarm to ring one minute in the future, but if you try to set an alarm for one minute **before** the current time, it will be set for a week in the future, at that time of day.
4. For a single alarm, leave the 'Repeat' line set to 'Once'. You can, however, set this alarm to repeat every day, every workday, or once a week. If you set a workday or daily repeat, there is no single day associated with it, and the 'Day' line of the dialog is blanked.

 Monday to Friday are initially set to be workdays. Use the 'Workdays' option on the 'Settings' menu if you need to change this.

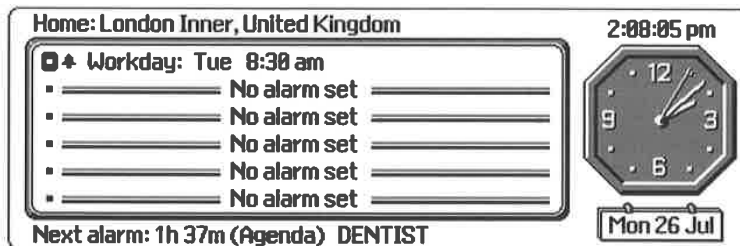
5. If you want to enter text to appear with the alarm, type it in the 'Text' line.
6. Select the sound for the alarm on the 'Sound' line, and press Enter to set the alarm. Its details are shown on the line you chose, after a bell symbol. For example:



 The 'Set alarm' dialog checks your disks for sound files, such as those recorded by the 'Record' application. See the chapter on 'Record' for more details.

The Time screen displays two more things:

- If you set a workday or daily repeat, the day the alarm will next ring is shown in the alarm line.
- If the next alarm, whether an ordinary alarm or an agenda alarm, is due to ring in under 24 hours, this will be shown at the bottom of the screen - for example:



Changing an alarm

To change the details of an alarm, move the highlight onto it and press Enter again. You can now change the settings in the 'Set alarm' dialog.

Alarms from the Agenda

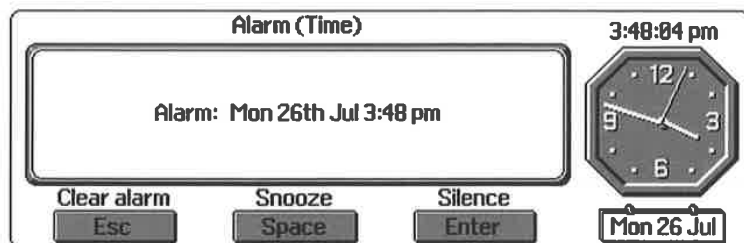
You can also set alarms within the Agenda on your Series 3a. To see when the next alarm for each agenda is set to ring, use the 'View next alarms' option on the 'Alarm' menu in the 'Time' application. If you do not have any alarms set in your Agenda (or in Time), a 'No alarm pending' message will be displayed.

If an alarm is set, the 'Next alarm for Agenda' dialog will appear. It shows when each alarm is due to ring, the event for which the alarm is set and the text of the entry for which it has been set.

See the note in the 'Agenda' chapter about the effect that exiting an agenda file has on its alarms.

When an alarm rings


When an alarm rings, its display takes over the whole of the screen, no matter what you are doing on the Series 3a. (The Series 3a turns on, if necessary.) The ringing starts quietly, and becomes louder. The centre of the screen shows the time the alarm was set for, like this:



Before you can do anything else with the Series 3a, you must acknowledge this alarm.

Turning the alarm off: press Esc and the alarm is cancelled. If it is a repeating alarm, it is automatically set to ring on the next repeat date. Single alarms are removed from the list of alarms once they have rung.

Snoozing: press Space and the alarm will stop for five minutes. If you press Space a second time, another five minutes is added to the snooze time. You can keep doing this up to a maximum of 60 minutes, after which the snooze time will return to five minutes.

 The Series 3a beeps at this point. If you're trying to set the snooze time in the dark, and you're not sure whether you set it correctly, keep pressing until you hear the beep, and you will be back at a five minute snooze.

If you are not present when an alarm rings, it will ring at increasing intervals. For the first three minutes it will ring every minute. The intervals increase to an hour. After the second hour-long pause, it will ring for the last time. When you next turn the Series 3a on, though, the alarm will still be shown.


Deleting, disabling and silencing future alarms

To delete an alarm entirely: move the highlight onto it in the Time screen, and press the Delete key. (The 'Delete' option on the 'Alarm' menu has the same effect.)

To disable an alarm temporarily: move the highlight onto the alarm and select the 'Disable alarm' option on the 'Alarm' menu. An X will be shown by the alarm, in place of the bell symbol, and it will not ring. You might disable your morning workday alarm, for example, when you have a day off work.

If you move the highlight onto the disabled alarm, you'll find that the name of the menu option has changed to 'Enable alarm'; select this when you want the alarm to ring again.

To silence all alarms: select the 'Sound' option in the 'Control' menu **in the System screen**, and set 'Alarm sounds' to be 'Off'. Alarms will appear on the screen, but will not ring. To turn the alarm sound back on, set 'Alarm sounds' to be 'On' again.

 The Series 3a doesn't know about Bank Holidays, so remember to disable your workday alarms for these days, if necessary.

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The Database

The Database lets you enter and find names and addresses, like in a phone book. You can also create other *databases* of information - client details, price lists, catalogues, and so on.

- **You can quickly find an entry by searching for a small piece of text contained in the entry, such as Jones or doctor.**
- **You can define labels for the lines of data in each entry, such as name or phone to guide you when typing in new entries.**

Note: dialling is covered in a later chapter.

The structure of a database

Files which you use in the Database are called *data files*, or *databases*. Each File is like a card index:



Each *entry* you type into a database is like one card in the index box.

Dr J Wood
0982 23456
44 Broughton Rd
Broughton


When you change an entry, it goes to the **end** of the database, as if you had taken a card out of the index box, altered it and replaced it at the back. **The order of the entries is almost irrelevant** - you can quickly find any entry by typing a short *search clue*, such as Jones , and step through any entries which contain this text.

When you first press the Data button, a file called `data` is used. Use this as your phone/address book. Later, you'll see how you can create other files with different names to hold different databases of information.

Pressing the **◆** key

Initially the **◆** key switches between two Database screens: the 'Add' screen and the 'Find' screen.

- The 'Add' screen allows you to create new entries.
- The 'Find' screen allows you to search for the entries you have previously typed in.

 You can't switch to the 'Find' screen until you've used the 'Add' screen to add some entries to the file.

Typing in entries

The 'Add' screen


When you first use the database, the 'Add' screen is shown:

Name:→ ⌘ Home: ⌘ Work: ⌘ Fax: Address: Notes:	Data Find ◆Add A B  Mon 26
--	--

Press **Tab** to save entry

If you look at the status window, on the right-hand side of the screen, you will see that 'Add' is marked with a ◆ symbol, indicating that the 'Add' screen is in use. The Database is already prepared for use as a phone book, with a suitable set of labels - Name , Address etc. - down the left of the screen.


If you want to change the labels for your address book, it is best to do so before typing any entries. (If you edit the labels after adding entries, these entries may not line up with your new labels.) **But the labels should be fine for most address books.** Don't worry if think you won't use some of the labels much; it is better to have them there for the few times they are needed.

 If you do want to edit the labels first, see 'Editing the labels' later in this chapter.

1. To make a new entry, type the name, phone numbers, address and notes alongside the labels. To leave a label blank - for example, if you don't have a work phone number for a particular person - just press Enter (or ↓) to skip to the next line.

Most labels are currently set up for one line only. However, **any label can have any number of lines. To insert an extra line for the label you're at, press Shift-Enter.**

2. When you've finished, press Tab to save the entry. The Database is then ready for you to type another entry. You can type as many as you like; press Tab to save each one.


 If you need to insert a real Tab character, press Control-Tab. Use the 'Set tabs' option on the 'Display' menu to specify how many character widths each Tab should be shown as on the screen.

3. You can type in further entries, pressing Tab after each. (If the last screen you used was the 'Find' screen, and you want to add more entries, press the ◆ key and the 'Add' screen will appear.)

Lining up with the labels


For example, you might want to type an entry which has no work phone number, no fax phone number, and requires three lines for the address. This is how you would type it:

Name:	Simon Evans	Enter	
Home:	081-034-0987	Enter	
Work:		Enter	(to leave this line blank)
Fax:		Enter	(to leave this line blank)
Address:	2 Sighthill Rd	Enter	
	London	Shift-Enter	(for an extra line with this label)
	SW18 9ZZ	Enter	
Notes	Doctor	Tab	(to save entry)

 If you don't want to use labels at all, use the 'Hide labels' option on the 'Display' menu. But they are useful, especially as they identify phone numbers when you dial.

Entering phone numbers

If you want to be able to use *DTMF dialling*, enter phone numbers which are in your own country **with their area codes**. This applies to local numbers too - having entered the area code, you can then use the Dial keypress (Psion-Help) to dial the number, wherever you are. **Use a space or hyphen to separate the area code from the rest of the number** - eg 071-999-8080, 415 000 9999, or 0636 999111 .

 You can enter text after the number if you wish. Nothing after the text will be dialled. For example, you can enter an extension as in 0636 999111 x444 -only the main number will be dialled, because of the x .


If you need to enter and dial international numbers, see the 'Dialling' chapter for more information.

Editing while you enter text

The editing keys work as described in Chapter 1.

If you type information on the wrong line, perhaps by pressing Enter when you meant to use Shift-Enter, you can move it easily:

- To move a line up: move the cursor to the start of the line, and press the Delete key. All of the lines below also move up.
 - To move a line down: move the cursor to the start of the line, and press Enter. All of the lines below also move down. You can also press Enter when the cursor is in the middle of a line, to break it into two lines.
- While you're typing an entry, you can also use the options on the 'Edit' menu:
- 'Copy text' makes a copy of any area of text you've highlighted by using a Shift key with one of the arrow keys.
 - 'Insert text' inserts the area of text you most recently deleted with the Delete key, or copied with 'Copy text'.
 - 'Bring text' brings in text that you have highlighted in other application programs in the Series 3a. A later chapter discusses the operation of the 'Bring' options.

 'Evaluate' calculates a result You can use this option to make numerical calculations while you're typing. If there is no spacing in the calculation, just move the cursor onto it; otherwise, highlight the calculation with Shift← or Shift→. Do not put an equals character at the end of the calculation. When you select 'Evaluate', the result appears. The calculation will be left highlighted, so you can delete it, if you wish, by pressing the Delete key.


If you want to cancel what you've typed, you can press Esc at any time. After confirming that you wish to abandon the changes you've made, you can start typing the entry again.

Using codes in entry text

If you have a lot of related entries, include a code in the text for each one. Then, as you will see, you can find them all, one by one. For example, if you had the numbers of several agencies, you might include the word Agency (or even just the code AGN) in each entry.

The size of an entry

Each entry can contain up to 4094 characters. (This number is reduced very slightly if lines extend over 255 characters.) Other than this, there is no limit on the number of lines in an entry, or on the length of each line.

 The Database does not allow you to save blank entries.


Dialling

Your Series 3a is capable of dialling phone numbers from your address book. When you use the Dial keypress (Psion-Help) the Series 3a emits the DTMF tones required to call the number you chose. The dialling system takes account of international codes and your current home country. Details of how to use this feature are given in the 'Dialling' chapter.

Finding an entry

The 'Find' screen

The \blacklozenge key is used to swap between the 'Add' screen and the 'Find' screen, which looks like this:


Name: Simon Evans Home: 081-034-0987 Address: 2 Sighthill Rd London SW18 9ZZ Notes: Doctor	Data ◆ Find Add A B  Mon 26
Find: <input type="text"/>	1/1


The first entry in the database is shown in the main part of the screen.

Entering a search clue

Type a *search clue* into the highlighted box at the bottom. This can be any piece of text which is in the entry you want to find - doctor, jones, doct and so on. It does not matter whether you type upper or lower case characters as the search is not case sensitive.

DI would match with both **Gliding** and **Diana** .

 The text you are searching for must be on one line. For example, DI would match with
Diana Smith
but not with
Grantham Road
Inglebrook


 Unlike OPL, you cannot use 'wildcards' when finding entries.

If no matching entries are found

If none of the entries contain the search clue you typed, a 'Not found' message is displayed. Press Esc to remove this message. Then, try typing a different search clue instead.

If a matching entry is found

If a matching entry is found it is displayed in the main part of the screen, and the text which matched is briefly highlighted - for example:

Name: Jane Riches Home: 0839 000001 Address: 47 Coogan Rd Carplington Leics	Data ◆ Find Add [A] [B]  Mon 26
Find: jane	2/2

If you left any of the lines blank when typing the entry, those lines are **not** shown. You see only the information you entered, correctly labelled. In this example, no work/fax phone numbers are shown.

Scrolling a long entry

The main part of the window has a highlight around it, and has a small arrowhead by the line in which the match occurred. You can move the arrowhead up and down with ↑ and ↓. If there are too many lines to show at once, use ↓ to move the arrowhead down the entry. When the arrowhead reaches the bottom of the screen, ↓ will make the entry scroll upwards.

You can also use ← and → to scroll the entry to the left and right.


At the bottom right of the screen you will see two numbers, showing the position of this entry, and the total number of entries in the database. 4/5, for example, means that this is the fourth entry out of a total of five in this file.

If more than one entry matches

If a matching entry is found, you can keep pressing Enter to search for further matching entries. When the Database finally fails to find another matching entry, a 'No more found' message is displayed. If you press Enter again, the Database begins the search again from the first entry.

Finding a different entry

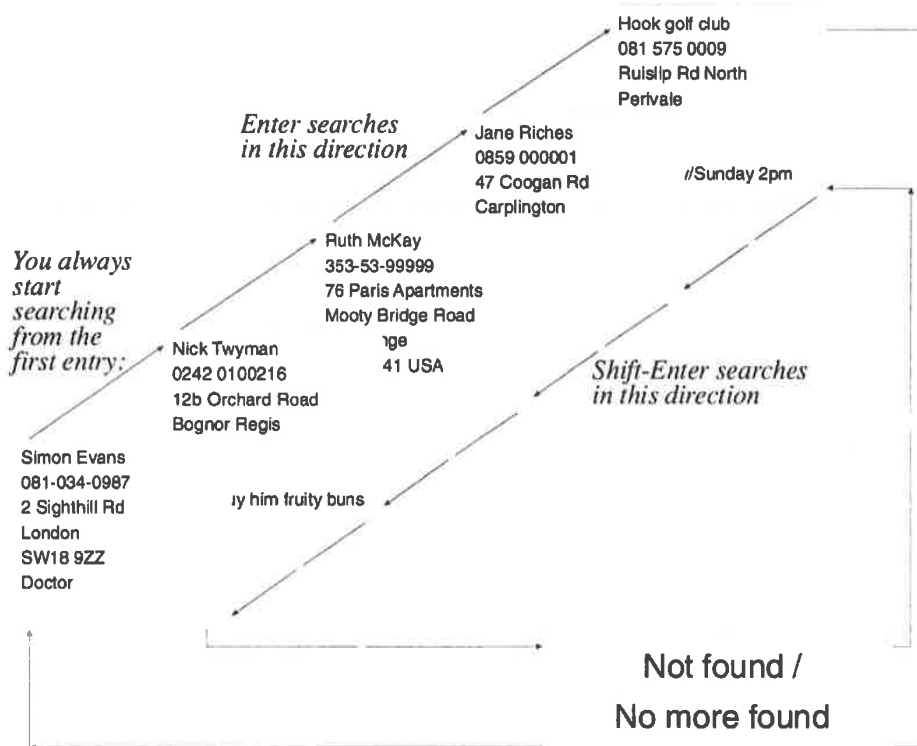
To find a different entry, type the new search clue and press Enter. It doesn't matter whether an entry was shown, or 'Not found' or 'No more found' were displayed: as soon as you start typing the search clue, the Database shows the first entry again, and when you press Enter, it searches from the first entry onwards.

 If you want to re-edit a search clue, perhaps because you made a typing error, press Esc.

Searching backwards

If you press Enter to move from one matching entry to the next, you can use Shift-Enter to move back to the previous matching entry. You might also use Shift-Enter when the 'No more found' screen is shown, to go back to the entries you'd already matched.

This diagram shows the effect of Enter and Shift-Enter:



Stepping through all your entries

If you press Enter without typing in any search clue (or having deleted any previous search clue, which you can do by pressing Esc), you can step through all of the entries in the database, one by one. You'll see the first of the two numbers in the bottom right of the screen increasing by one each time.

You can press Shift-Enter at any time to go back to the previous entry; the first of the two numbers decreases by one.

Searching by label - speeding up searching

You can also request a more specific search if you want to find an entry which has a particular name, phone number, address or note included in a particular field. This is a much faster way of searching for an entry.

For example, to search for all the phone numbers of companies you have listed in inner London:

1. Select the 'Find by label' option on the 'Search' menu. Press the → to select the label for the information you are looking for. In this example, it would be ☎ Work'.
2. Press the Enter key and '☎ Work' will replace 'Find' in the bottom left-hand corner of the screen.

3. You can now perform the search - type 071 (the area code for inner London) and press Enter.

The Database will display the first matching entry it finds, searching from the first entry in the file. Press the Enter key to move on to the next matching entry.

Searching from the current entry

The entries are numbered in the order in which they are created. When you start typing a new search clue, the database immediately resets to the first entry; the Enter key searches forwards from this first entry, while Shift-Enter skips to the last entry and searches backwards.

You can, however, use the 'Start at current entry' option on the 'Search' menu to start a search from the currently displayed entry. You can type a search clue in the normal way, and then:

- Press Enter to start searching forwards from the next entry after the current one.
- Press Shift-Enter to start searching backwards from the entry before the current one.

Once a matching entry has been found, you can use Enter and Shift-Enter as before, to search for other matching entries.

Moving directly to one specific entry

You can go straight to a particular entry by specifying its position in the file. Select the 'Jump to entry' option on the 'Search' menu and a dialog will appear which allows you to enter the number of the entry you want to see.

Changing the way an entry is displayed


Wrapping at the screen edge

The 'Wrap on' option on the 'Display' menu makes each line word-wrap at the right-hand edge of the screen. It applies to both the 'Add' screen and the 'Find' screen.

If you set 'Wrap on', you don't have to use → to see the end of a long line. However, a name and address can look strange if a phone number or part of the address wraps onto more than one line. For this reason, word-wrapping is not initially used when you start using the Database.

When you use the 'Wrap on' option, its name changes to 'Wrap off'. Select it again, and the Database will no longer word-wrap each line.

Word-wrap does not affect the way you find entries. For example, if your search clue is green bay , entries containing green bay will match even if bay has been word-wrapped onto a different line from green .

 You can use *soft hyphens*, *hard hyphens* and *non-break spaces* for precise control of word-wrap. See the Word Processor chapter for more details.

Displaying more text

To change the size of the text, select the 'Zoom in' and 'Zoom out' options on the 'Special' menu.

To increase the screen space available for your entries, use Control-Menu to reduce the size of the status window or remove it altogether.

Managing your entries

Re-editing an entry

When, for example, someone's phone number changes, **don't type in a new entry**. If you do, the old entry will still turn up when you try to find the correct name and address. It will also be using up internal memory or disk space unnecessarily.

Instead, you can change the entry which you previously typed in. Find the entry you wish to change, then select the 'Change' option on the ♦ menu.




The 'Change' screen looks as if you'd just typed the entry, but had not yet hit Tab to save it:

Name: Jane Riches Home: 0859 000001 Work: Fax: Address: 47 Coogan Rd Carplington Leics Notes:	Data Find Add A B  Mon 26
--	--

Press **Tab** to save changes

The cursor is positioned at the start of the entry.


You can now edit this entry in the same way as when typing in a new one. When you press Tab, this new version of the entry is saved, as the last entry in the database. **The old version of the entry is automatically removed from the database.**

-  If, while you're editing, you want to cancel the changes you've made, press Esc. You will be asked to confirm that you wish to lose the changes.
-  If you find that you are using the 'Change' option a lot, you may wish to make the 'Change' screen available to you from the ♦ key. This feature is described at the end of this chapter.
-  The 'Update entry' option has a similar effect to 'Change'. It is provided for Series 3 compatibility reasons.

Deleting an entry

Find the entry you wish to delete, then press the Delete key or select the 'Delete entry' option on the 'Edit' menu. A dialog will be shown, asking for confirmation before deleting the entry.

Copying all or part of an entry

1. Find the entry to copy. Move the arrowhead to point at the first line you wish to copy and press Shift-↓ a few times, to highlight the lines you want to copy. If you hold down Shift-↓, the highlight will soon reach the bottom of the entry.
 -  Although you can highlight text when you've found an entry, you're not editing it; only the 'Change' and 'Update entry' options re-edit an entry.
2. Select the 'Copy text' option on the 'Edit' menu. A copy has now been made of the highlighted area. Even though blank lines are not shown on the screen, they are copied as well.
3. Press the ♦ key, and the 'Add' screen is displayed. The cursor should be at the first line.

4. If you copied just part of an entry, move the cursor to the relevant label.
5. Select the 'Insert text' option on the 'Edit' menu, and the copied text is inserted. Each line should match up correctly with its label.
6. Press Tab to save the copied entry.

Keeping notes in a database

You can use a database file for storing notes. In this case, you'd probably turn the labels off (as described later) and word-wrap on. If you store each note as a separate entry, you can then quickly step through all notes which mention a particular key word.

Compressing your database

When you delete an entry from your database, the space it takes up is not automatically reclaimed. Similarly, when you re-edit an entry and press Enter to put in the new version, space is still taken up by the old version.

The 'Compress file' option on the 'File' menu will reclaim any such space taken up by old information. It's a good idea to use it if you've recently deleted or changed a lot of entries.

The 'Compress file' option does not work if the database file is currently on a Flash SSD. Instead, use the 'Save as' option to create a new copy of the database. Whichever kind of disk you create it on, the new file will be compressed.

If you fill all of internal memory and are unable to enter more information into your Series 3a, one of the first things to do is to compress your database (or databases). If this does happen to you, see the 'Troubleshooting' chapter for more ideas.

Labels

Turning labels on and off

When labels are shown, the 'Hide labels' option on the 'Display' menu will remove them, leaving the whole width of the screen free for your entries. This applies to both the 'Add' screen and the 'Find' screen.

The name of the option then becomes 'Show labels', and if you select it again the Database will return to showing the labels with the entries.

Editing the labels

The 'Edit labels' option on the 'Edit' menu lets you edit the labels in the same way as you edit an entry.

Use the Enter key to put in blank lines. The number of blank lines below a label controls the number of lines the label takes up when displayed.

 When editing labels. Shift-Enter has the same effect as Enter.

The Shift-Dial keypress (Psion-Shift-Help) can be used to insert a phone symbol, to mark a label as being for phone numbers. This is not just for cosmetic reasons; when you dial from the Database, these lines will be searched for phone numbers. See the 'Dialling' chapter for more details.

When you're happy with the new labels, press Tab. There is a maximum screen width which the labels can occupy; if one is too long it will be highlighted, and a 'Label too long' message will be shown. Otherwise, you are returned to the 'Find'/'Add'/'Change' screen, with the new labels in place.

If you do need to change labels after you've typed in entries, you may need to re-edit the entries to match the new labels. However:

- If you add new labels at the bottom, this can only affect entries that use what was previously the bottom label.
- If necessary, you can write an OPL program to change the structure of every entry, one by one. The 'Example programs' chapter in the Programming Manual contains such a program.

Database files


Initially, all of the entries you save are kept in one file. Unless you specify otherwise, it is kept on the internal disk, with `Data` as the filename.

Creating a new database file

You can, if you want, use more than one database file. You might, for example, want a business database and a personal database.

To make a new database file;

1. Use the 'New file' option on the 'File' menu.
2. Type a name for the new file - `business`, for example. The name can be from one to eight letters and numbers, and must begin with a letter.

 You can make the new database on an SSD, if you like: set the 'Disk' line to the *SSD drive*, `A` or `B`, containing your SSD. This frees more internal memory for other information.

3. Press Enter, and a new blank database is made for you. The 'Add' screen is displayed, for you to type new entries.

In the System screen, you'll now see two names under the Data icon- `Data` .the original database you were using, and the name of the new database you have created. To use either database, move the highlight onto the file you want and press Enter.

Creating labels for new files

Each database file has its own set of labels. When you create a new file, the Database automatically gives it the same 'phone book' labels you've seen before.

If you want to change the labels for this database:

- Before you type any entries, use the 'Edit labels' option on the 'Edit' menu.

Think carefully about which labels to use; once you've started typing in entries, adding or removing labels could mean re-editing entries to match.


For a business address book you might, for example, add extra labels for the numbers of a fax or mobile phone. It doesn't matter if most of the entries don't use the extra labels; when you find the entries later, only the labels you filled in are shown.

Changing the name of a database file

The System screen's 'File' menu has a 'Rename file' option. You might use this to rename the Data file to something like `Personal`, especially if you've created other database files such as `Business`. If the file is open (its name is in bold letters), you must press Delete to exit it before you can rename it

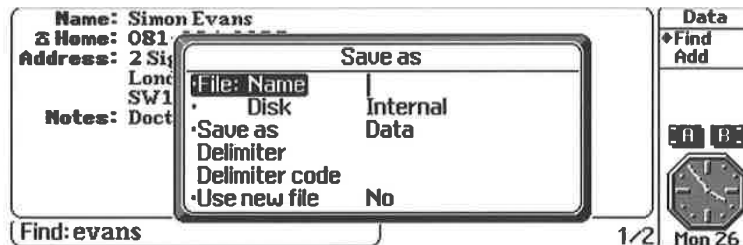
Changing to a different database

As well as using the System screen, you can use the 'Open file' option on the 'File' menu of the Database to exit the current database and open a different one.


 In the Database, the status window shows the name of the database you're using, beneath the Data icon.

Copying a database file

1. Use the 'Save as' option on the 'File' menu to make a new copy of the database you're using. The new file will automatically be compressed. The 'Save as' dialog looks like this:



2. The 'Save as' line controls the type of file created. Set it to 'Text' to save a copy of the database as plain text, perhaps for use by the Word Processor. See the notes on "plain text files" later.
3. If you want to start using this new version of the file, set 'Use new file' to 'Yes'. If you're just making a backup of your database, leave 'Use new file' set to 'No'.

 The other lines in this dialog are described under "Plain text files" below.

Merging databases

The 'Merge in' option on the 'File' menu adds copies of all the entries in another file to the end of the current database. You might use this, for example, to merge your personal and business databases into one big database.

You can specify the same information about the type of file being merged in as you can when creating a file with the 'Save as' option.

Plain text files

If you want to transfer database information to and from other computers, you may wish to use files which contain only the text.

1. In the 'Save as' dialog, the 'Save as' line controls the type of file created. Set it to 'Text' to save a copy of the database as plain text.
2. Now specify how lines in your database should be delimited. You can still make each start on a new line, but you can also keep them on the same line, separated by a tab, comma, semicolon or other character. If you choose 'Other' as the delimiter, type the

character code of the character to use. on the next line of the dialog. (Character codes are listed in an appendix to this manual.)

For example, if you set 'Newline' as the delimiter, your address book would be saved like this:

```
Simon Evans
081-034-0987
(a single space)
(a single space)

2 Sighthill Rd
London
SW18 9ZZ
Doctor
(a blank line)

Nick Twyman
0242 0100216
(a single space)
(a single space)

12b Orchard Rd
Bognor Regis
Sussex
```

There is a blank line between each entry. Note that when there is nothing on one of the lines in an entry itself, it is saved with a single space. (In this example, neither entry has "Work" or "Fax" phone numbers, so a single space is saved for those lines.)

You can use 'Merge in' to merge a plain text file like this into the Database. (You might use 'New' to make a new empty database file, then merge the plain text file into it.) Again, if you want a line inside an entry to have no information on it, use a single space.

Each line in a text file you 'Save as' or 'Merge in' is limited to 255 characters.

Saving on Flash SSDs

It is a good idea to store your database files on a Flash SSD, as it is an extremely secure place to keep information. Additionally, as the Database reads entries from the file into internal memory only when necessary, you can look at large database files without running out of memory.

On a Flash SSD, you cannot use the 'Compress file' option to recover the disk space taken up by modified or deleted entries. Instead, use the 'Save as' option to make anew (compressed) copy of the database.

 The 'Files and disks' chapter contains further information about using SSDs.

OPL and Database files

OPL can manipulate files made in the Database. In OPL terminology, each entry is a *record*, and each line of an entry is a *field*. There is more about this in the Programming manual.

Sorting Database files

If you want to sort your entries alphabetically, an OPL program to do this is included in the 'Example programs' chapter of the Programming Manual. If you want it to sort by people's second names, you must enter second names first, as in
Bartholomew, Eric .

Customising the ♦ list

As described earlier, the ♦ key swaps between the two screens on the ♦ list - the 'Find' screen and the 'Add' screen. When you press the ♦ key, you can see the ♦ symbol move on the ♦ list, on the right-hand side of the screen.

Putting the 'Change' screen on the ♦ list

You can add a further screen to the ♦ list - the 'Change' screen, which is used to update existing entries. You may find it quicker to select the 'Change' screen with the ♦ key than to select 'Change' from the menu.

1. Make sure the Find screen is shown.
2. Select the 'Set up ♦ list' option on the ♦ menu.
3. In the dialog which is shown set the 'Include Change' line to 'Yes'.
4. Press Enter to complete the dialog.


Removing screens from the ♦ list

You can also use the 'Set up ♦ list' option on the ♦ menu to reduce the number of screens which the ♦ key moves between. For example, if you wanted to discourage someone else from adding entries to your database (accidentally or otherwise) you might remove the 'Add' screen from the ♦ list:

1. Make sure the Find screen is shown.
2. Select the 'Set up ♦ list' option on the ♦ menu.
3. In the dialog which is shown set the 'Include Add' line to 'No'.
4. Press Enter to complete the dialog.

You can still use the different screens by selecting them from the menu (or by pressing their hot-keys).

You might also find this option useful to set the ♦ list to include the screens that you use most frequently. For example, if you use a large database you may find yourself changing entries much more often than adding new ones. In this case, it would be easier to have the ♦ key step between just the 'Find' and 'Change' screens.

 When using the ♦ key to swap between the different screens you may see some information messages. You might, for example, be moving from the 'Find' screen to the 'Add' screen but, in moving through the 'Change' screen, a 'Nothing to save' message may be shown.

6

The Agenda

The Agenda is a powerful personal organiser which can be used to record your notes, appointments, anniversaries and things you have to do.

Individual entries can be set to repeat, to sound alarms, and to have memos attached to them.

You can customise the appearance and operation of the Agenda in many ways, to suit the type of information you enter in it.

The power of the Agenda

The Agenda is designed to be flexible. If you want to, you can use it as a blank notebook and just enter notes into it. Alternatively, you can set your entries with times and alarms and use it as a sophisticated time manager. You can even use it as a "what I did today" diary, if you wish, by attaching memos to entries.

There are six different views you can use:

- The Day view can show all the entries in your Agenda, day by day.
- The Week view shows all the entries week by week.
- The Year view is a "year planner", showing symbols for selected entries over a whole year's range.
- The List view shows a list of entries, in order of date.
- The To-do view shows the entries in all the To-do Lists.
- The Anniversary view shows all the anniversary entries, month by month.


You can change the appearance of these views, so that the screen display matches your use of the Agenda. For example, the Day view initially appears with time slots which are one hour long. You can change the range and/or duration of the time slots if they don't suit your usual appointment schedule. Alternatively, you might turn the time slots off altogether, if you want to use the Agenda like a paper agenda.

You can enter notes, appointments, anniversaries and to-dos (with or without due dates); you can also delete or cross out any type of entry when it is completed.

Other Agenda functions allow you to search for particular entries and dates, set up series of repeating entries, copy and insert entries, copy text from other applications on your Series 3a, and even perform calculations inside the Agenda.

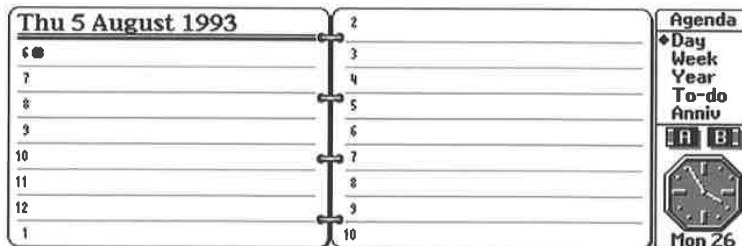
Concepts like due dates and crossing entries out are, however, flexible. You might cross out a forthcoming appointment because it has been cancelled, not completed; a due date might be the date to start taking action on a to-do entry, or the deadline on a project.



As with the other powerful applications on your Series 3a, though, you need only find out about those features - and, indeed, those views - that you want to use.

 **Note for Series 3 users only:** The Agenda can convert files from the Series 3 Agenda. This is a one-way conversion - you will not be able transfer the Agenda back from the Series 3a to the Series 3. Use the 'Open file' option to open your Series 3 file. A dialog asks you for the name to use for the new converted file. You must enter a new filename: the Agenda will not allow you to overwrite an existing file.

Moving between the Agenda views

When you first press the Agenda button you will see the Day view:



On the right side of the screen you will see a status window, which contains the  list. This lists the Agenda views. A  symbol is displayed next to the current view ('Day').

To move to the next view in the list, press the ♦ key. To move to the previous view in the list press Shift-♦ key. Alternatively, use the hot-keys shown on the ♦ menu to go straight to the view you want.

The following keys also move around the different views:

- Control-Space moves to the current day within the Day view.
- Space moves to today within the current view. Pressing it again returns to the day you were on.
- Esc switches between the current and last view.
- Control-M/T/W/T/F/S/S move to the Day view, setting to the next day beginning with the letter.
- Shift-Control-M/T/W/T/F/S/S move to the Day view, setting to the previous day beginning with the letter.

Types of entry

There are three types of Agenda entry: day entries, anniversaries and to-dos. You can set any entry to sound an alarm, or to have a memo attached. You can also repeat, move and copy entries to other dates. The Agenda can store entries for any date within the range 1/1/1980 to 31/12/20149.

Day entries - appointments and notes

Read this section, as it introduces you to the Agenda. Then read whichever sections you feel are relevant to the way you want to use the Agenda.

The Day view

If you do not already have the Day view on display, move to it - with Control-Space, for example, or the Shift-Psion-D hot-key, or with the ♦ key.

The day and date are displayed at the top of the left-hand column, with time slots for morning entries underneath. Time slots for afternoon and evening entries are in the right-hand column. The cursor is shown as a black bullet in one of the time slots.


You can move the cursor with these keys:

- ↑↓ move between time slots on the same day.
- Control-↑↓ and Psion-↑↓ move up/down by a screenful of time slots.
- ←→ move to the other column first, and then to the same time slot on the previous/next day.
- Control-←→ move to the same time slot on the previous/next day.
- Psion-←→ move to the same day in the previous/next week.

Entering untimed entries, eg notes

1. Use the ←↑↓→ keys to move the cursor to a suitable time slot.
2. Type your entry (up to 254 characters) and press the Enter key. The 'Day entry details' dialog will appear.
3. Select 'No' on the 'Timed entry' line, and press Enter.

Untimed entries are shown with a bullet symbol in front of the text. If you want to do something to this entry, such as re-edit it, move the cursor onto this bullet, and press Enter to start editing it again.

 You can enter a phone number anywhere within the text of an Agenda entry. You can then use the Dial keypress (Psion-Help) to dial the number automatically. See the 'Dialling' chapter for more information.

Deleting an entry

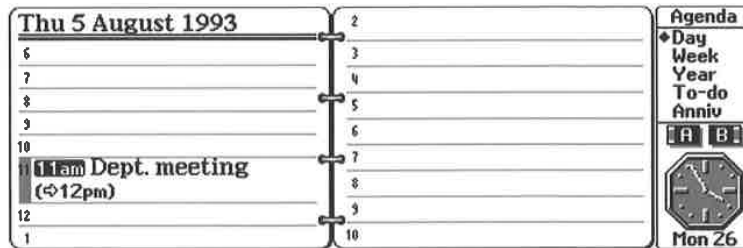
Move the cursor to the entry and press the Delete key. A prompt will appear asking you to confirm the deletion; press Y to confirm.

Entering appointments

You can enter appointments in two ways, according to the way you want to use your Agenda. To use it like a paper agenda, you simply type the appointment's time as part of the entry text. To use it as an appointment manager, you must make the Agenda aware of the time details, by entering them in the 'Day entry details' dialog; the Agenda can then automatically organise appointments in time order and show you where appointments overlap.

The Agenda as an appointment manager


1. Move the cursor to the relevant day (in any time slot) and type the appointment text. Press Enter and the 'Day entry details' dialog appears. The top line, 'Timed entry', should be set to 'Yes'.
2. Type the time for the appointment on the 'Start time' line. (If your times are in 'am-pm' format, don't forget the "am"/"pm" setting.)
3. Either move the cursor to the 'Duration' line and type the duration of the appointment, or move to the 'End time' line and type the end time for the appointment. Press Enter to complete the dialog and the appointment will be entered in the correct time slot.




To the left of the appointment, you will notice a grey line that covers the times of the slots in which the appointment takes place. This is called a *duration bar*, duration bars appear beside any timed appointment in your Agenda. (A black line will appear over the slot times whenever two or more timed appointments overlap. This is called an *overlap bar*.)

The appointment time is displayed in front of the text. The end time of the appointment is shown in brackets after the text.

If you want to, you can turn off duration bars or overlap bars, show the duration instead of the end time, and so on. See "Changing the appearance of the Day view", later in this chapter.

 Appointments that last no time do not display an end time or duration.

 You cannot enter tinted appointments that span more than one day. If you want an entry to go across midnight, enter it as more than one entry, or as a *repeating* entry (described later).

You can also type day entries into the Week, Year and List views. Enter the 'Day entry details' in the dialog as you would in the Day view.

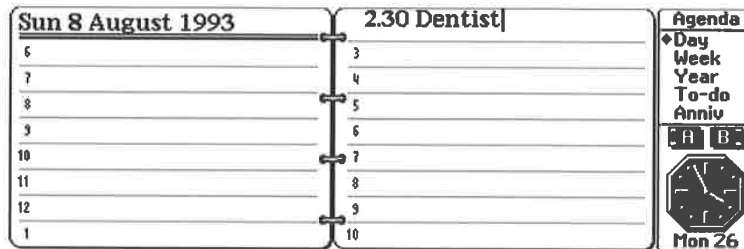
The Agenda as a "plain paper" Agenda

If you intend to use your Agenda as a "plain paper" agenda, you should first change the 'Day entry preferences' so that day entries are untimed by default:

1. Select the 'Set preferences' option on the 'Special' menu. A new *submenu* is shown.
2. Select the 'Day entry defaults' *suboption* on the 'Entry preferences' menu. Then change the 'Day entries timed by default' line to 'No', and press Enter.

You are now ready to enter notes and appointments:

1. Position the cursor to an appropriate place on the screen. (You can put it in the corresponding "time slot", if you like, or you can choose to ignore time slots altogether.) Type the text (and the time, if it is an appointment) For example, you might type 2.30 Dentist .



2. Press Enter, then Enter again to remove the 'Day entry details' dialog from the screen.

To change the position of an untimed entry, press Delete to delete it, then move to the desired position and use the 'Insert entry' option on the 'Edit' menu.

As an alternative to pressing Enter twice, you can press Psion-Enter. No 'Day entry details' dialog will be shown. If you wish, you can even set the Enter key to do this, instead of Psion-Enter:

1. Select the 'Set preferences' option on the 'Special' menu, and in the submenu it displays, select 'General preferences'.
2. Change the first line, 'Prompt for entry details on', to 'Psion-Enter'. Press Enter to complete the dialog.

Now you can type entries and just press Enter **once** to enter them. If you do want to enter 'Day entry details' on occasion, use Psion-Enter (or, having entered the entry, select the 'Change entry details' option on the 'Edit' menu.)

Finally, you may even wish to remove the guide times shown at the start of the slots. To do this:

1. Select the 'Set preferences' option on the 'Special' menu, and in the menu it displays, select 'Day view'.
2. Move to the 'Slot definitions' line, and press Tab. A 'Slot definitions' dialog is displayed.
3. Set both of the 'Show' lines to 'Only slot line' (or, to remove the grey slot lines as well, to 'Neither slot time nor line'). Press Enter to complete the dialogs.

Time slots and slot compression

To insert a second entry in a time slot, simply type it as you did the first one. A new line will be created for it automatically.

Notice that when a time slot needs more than one line to show its entry or entries, the slot expands to accommodate the second entry, while other time slots without entries reduce in size. This feature is called *slot compression*; it allows the maximum number of entries and empty time slots to be displayed.

 If you wish, you can turn slot compression off. See "Changing the appearance of the Day view", later in this chapter.

Changing the display of entries

The 'Zoom in' and 'Zoom out' options on the Special menu allow you to cycle through the fonts available.

The 'Wrap on/off' option, also on the 'Special' menu, controls whether long entries word-wrap on the screen, or are just truncated.

Birthdays and other anniversaries

You can use the Anniversary view to enter birthdays and other anniversaries, rather than entering them as untimed day entries. The Agenda then "knows" that they are anniversaries, i.e. that they repeat every year, and will insert them into your Agenda every year. It will also display age (for birthdays) and/or the start year (for anniversaries) for you.

The Anniversary view

Press the **◆** key until you reach the Anniversary view, or press the Shift-**Psion-A** hot-key to move there directly. It initially looks like this:

Anniversaries (in 1993)	
November	December
•	•


The screen is split into two columns, with the current month in the left-hand column and the following month in the right. The current year is shown at the top of the screen. The cursor appears on the bullet in the left-hand column.

Entering an anniversary

1. Type the text for the anniversary - Steve's birthday ; for example - and press Enter. (It does not matter which month the cursor is currently in.) The 'Anniversary details' dialog will appear.
2. Type the day of the anniversary on the 'Day of month' line and select the month on the 'Month' line.


3. If you don't want to display anything about an anniversary's start year, set the 'Specify start year' line set to 'No'. If you do, set it to 'Yes'; then type the start year (eg the year someone was born) in the 'Start year' line, and set 'Display year as' to display the 'Number of years' or 'Start year' (or both) with the anniversary entry.
4. Move to the bottom line of the dialog. If you want this entry to have a symbol in the Year view too. type the character or symbol to use. If you don't want a year symbol, press the Delete key, to set this line to 'None'.
5. Press Enter to complete the dialog. The anniversary will be entered in the column for the month in which it occurs.


Although the Agenda only shows from 1980 onwards, you can set an anniversary's start date to be before this.


 You can even enter BC dates, by beginning them with a minus sign.

If you press Shift-Psion-D you will move to the Day view on the date of the anniversary. You will see the anniversary entry displayed in the first time slot, with a small candle as its "bullet".

If you press Shift-Psion-Y, you will move to the Year view. The cursor will be placed on the date of the anniversary, and the year symbol **A** will be displayed **for your anniversary**. The text of the entry will be shown on the top line of the screen.

 By default, all anniversary entries are shown in the year view, and with the symbol **A**. You can change these settings by using 'Set preferences' and selecting 'Anniversary defaults'.

 You can enter public holidays that occur on the same date every year as anniversaries, for example Christmas Day and New Year's Day. They will then appear in your Agenda each year. You can distinguish them in the Year view from other anniversaries by giving them a different year symbol. (See "Setting a year symbol for an entry" later in this chapter).

 You can enter anniversaries from within the Day, Week, Year and List views, with the 'New entry' option on the 'Edit' menu.

Movement keys

You can move the cursor with these keys:

- $\uparrow\downarrow$ move to the previous/next entry (or month).
- Control-Psion- $\uparrow\downarrow$ move to the first/last entry in the month currently displayed.
- Psion- $\uparrow\downarrow$ move by a screenful at a time.
- $\leftarrow\rightarrow$ move to the previous/next month.
- Control- $\leftarrow\rightarrow$ move by three months at a time.
- Psion- $\leftarrow\rightarrow$ move by a year at a time.
- Control-Psion- $\leftarrow\rightarrow$ Move to the same month five years before or ahead.
- The Spacebar displays the current month in the current year, and moves to the first entry which is on or after today's date.


Changing the appearance of the Anniversary view

You can change the number of month columns that are displayed at the same time:

1. Select the 'Set preferences' option on the 'Special' menu.
2. Select the 'Anniversary view' suboption on the 'View preferences' menu.

3. Type the number of months that you want to display on the screen (1-4) and press Enter to complete the dialog.

 You can use the 'Find' option (described later) to show a list of all anniversaries

 Some less common uses of anniversaries are described in the note on "Anniversaries and repeats", in the "Repeating an entry" section of this chapter.

To-do lists and other lists

You can use the To-do view to enter to-dos and other lists, for example shopping lists, rather than entering them as untimed day entries. The Agenda then keeps them on a To-do list until you delete them.

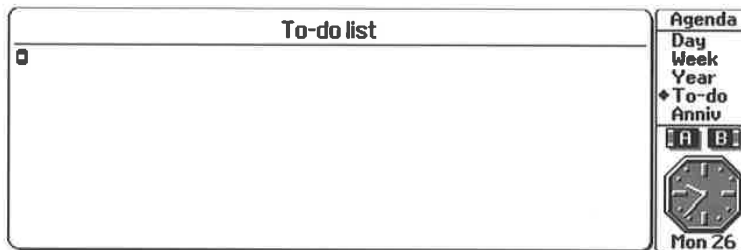
You can set a *due date* for a to-do entry, if you like.

When you enter to-dos you give each one a *priority* between 1 and 9, where 1 is the highest and 9 the lowest. **Initially, all priority 1 entries are automatically shown in the Day/Week/List views as well.** Lower priority entries are only shown on their to-do list.

You can control which priority entries should be shown in other views. **As you'll see, to-do lists can be customised in many ways.** 'Set preferences' has a 'To-do view' suboption for any overall settings for the To-do view, and a 'To-do entry defaults' option for setting the values suggested when you enter each to-do entry. There is also a 'To-do list settings' option on the 'To-do lists' menu, which controls the way each of the lists work.

The To-do view

Press the \blacklozenge key until you reach the To-do view, or press Shift- Ψ -T to move there directly. It initially looks like this:



The To-do view initially has just one list, called 'To-do list'. The name is displayed at the top of the screen. The cursor is on a bullet in the list.

Entering a to-do

1. Type the text for the entry, and press Enter. The 'To-do details' dialog will be displayed. If you want this to-do to appear in the Day, Week and List views too, leave the 'Priority' line set to '1'; if you don't, type in a lower priority.

Typically, most to-dos do not need to have dates.

2. **For an undated to-do**, leave the 'Dated' line set to 'No', and just press Enter.

If the undated to-do has a high enough priority to be displayed in other views, it will be shown on "today" in the other views.

However, you might want an entry like "pay rent" to have 'Due date' set to when the rent is due, and with a warning date (or "start date" or "valid date" - however you think of it) a few days beforehand.


2. **For a dated to-do**, fill in the 'Due date' line. Then move to the 'Date details' line and press Tab to display the "To-do date details' dialog.
3. You can set the warning as a date on the top line, or as a number of days on the second line.
4. If you leave the 'Show due date as' line set to 'Auto', the "time to go" will be displayed in an intelligent fashion. While more than a week away it is shown as a date; then the day is shown; then "tomorrow", "today" and "yesterday"; then as "last Mon", for example, finally, if it is more than seven days overdue (past the due date), it is shown as a date again.


Instead of this, you can choose to show the due date as a number of days to go, or always as a date (or not show it at all). **Overdue dates are always shown in bold.**


5. Press Enter twice to complete both dialogs.

The to-do is displayed with its priority as the entry bullet.

If the dated to-do has a high enough priority to be displayed in other views, it will be shown on its warning/start date. Once the real date has passed this warning/state date, the entry will be carried forward, always appearing on the screen for today, until you delete it or cross it out.

 You might want to repeat an entry like "pay rent". Repeating an entry is described later in this chapter.

 You can enter to-dos from within the Day, Week, Year and List views, with the 'New entry' option on the 'Edit' menu.

 You might use dated to-dos to complement anniversary entries - for example. you might enter 'Buy card for Joe' as a dated to-do, with Joe's birthday as its due date, and a warning date of two or three days.

IMPORTANT: choosing the sort order


Initially, to-do entries are ordered manually. There are two ways to set the position of an entry on a manually ordered to-do list;


- Use the 'Position to-do entry' option on the 'To-do lists' menu.
- Delete the entry, move to the desired position on the list, and use the 'Insert entry' option.

However, you can also sort to-dos automatically, according to their due date, and their priority. For example:

1. Select the 'To-do list settings' option on the 'To-do lists' menu. (If you've defined more than one to-do list, select the name of the to-do list to change, on the top line.)
2. Set the 'Sort order (in To-do view)' line to 'Date first, then priority'.

The list is then ordered according to the importance of the entries. Dated to-dos which are "valid", ie in their warning period, come first. Then come undated to-dos, **sorted by priority**; last come dated to-dos which have not yet reached their warning date.

 You can then enter long-term to-dos with a high priority and a warning date a few days before they are due. They will then stay at the bottom of the to-do list until their warning from date is passed, at which time they will appear at the top of the to-do list.

 The 'Priority first, then date' order sorts dated and undated entries together, by priority. Within each priority the dated entries come before the undated ones.

Bulleting a list with numbers

When a list is manually ordered, you may wish to bullet it with numbers instead of priorities. (This also lets you see how many entries it has.)

1. Select the 'To-do list settings' option on the 'To-do lists' menu. (If you've defined more than one to-do, select the name of the to-do list to change, on the top line.)
2. Set the 'Bullet entries with' line to 'Numbers', and press Enter.

Creating other lists

You can create up to 99 to-do lists in your Agenda. For example, you could create a new list for shopping, which displays unsorted numbered entries, and set it not to have its entries appear in the Day/Week/List views at all:

1. Select the 'New to-do list' option on the 'To-do lists' menu.
2. Type `Shopping` as the name for the new list, and press Enter.

The top line of the To-do view will now display an arrowhead in the top corner to indicate that there is another list $\leftarrow\rightarrow$ move from list to list.

3. Select the 'To-do list settings' option on the 'To-do lists' menu. Check the `shopping` list is selected on the top line. Set 'Manual' on the 'Sort order (in To-do view)' line.
4. Set the 'Bullet entries with' line to 'Numbers', and press Enter.
5. Set the 'Display entries in general views...' line to 'No', and press Enter.

Movement keys

You can move the cursor with these keys:

- $\uparrow\downarrow$ move to the previous/next entry in the current list.
- Psion- $\uparrow\downarrow$ move up/down the current list by one screenful of entries.
- $\leftarrow\rightarrow$ move to the list to the left/right of the current one. (There is no "wrapping" from the start to the end of a list.)
- Psion- $\leftarrow\rightarrow$ move to the list that is furthest to the left/right.

Managing To-do lists

The 'To-do lists' menu has options for renaming and deleting to-do lists. For example, you might wish to rename or delete the initial list in the Agenda (called "To-do list").

If you have more than one to-do list you can change the order in which they are shown. Use the 'To-do list settings' option, and set 'Position among to-do lists' for each list you want to move. The first/leftmost to-do list has position 1.

Showing more than one To-do list

1. Select the 'Set preferences' option on the 'Special' menu.
2. Select the 'To-do view' suboption on the 'View preferences' menu.
3. Type the number of To-do lists to display at once. You can display up to four (if you have created four lists). Press Enter.

To-do entries in other views


1. Select the 'To-do list settings' option on the 'To-do lists' menu, and select the name of the to-do list to set.
2. Move to the 'Display entries in general views' line and set this to 'Yes'.
3. If you want only entries with priorities from 1 to 3 (for example) to appear in the Day/Week/List views, enter 3 on the 'From priority 1 to' line. (If you don't have too many to-dos, you may wish to enter '9' here, so that **all** to-dos on this list are included.)
4. Set 'Default position in Day view' to the time at which to-dos from this list should be positioned in the Day view. (They will have the same position, relative to day entries, in the Week and List views.)
5. Finally, set the bottom line to say whether crossed out to-do entries are allowed to appear in the other views. Then press Enter. (There is more about crossing out entries later.)

You can position individual to-dos when in the other views, by using the Delete key to cut them, then the 'Insert entry' option to insert them at a different position. If you wish you can display to-dos in some, but not all other views. (You might, for example, want to see them on the Day view, but not on the Week view, as they would fill up the slot for the current day.) Use 'To-do list settings' as before to set each list to display to-dos in other views. Then use 'Set preferences'; use the 'Week view' suboption, for example, press Tab on the 'Allowed types' dialog, and set 'To-dos' to 'No'.

Alarms in the Agenda

You can set a single alarm for any type of entry (except undated to-dos), to ring as a reminder before the date/time of the entry. For example, you might set an alarm to ring a few days before an anniversary entry, to remind you to go and buy a card.

Each entry type has a different default alarm sound: 'Rings' for timed day entries, 'Fanfare' for untimed day entries, 'Soft bells' for anniversary entries, and 'Chimes' for to-dos. (See "Defaults for new entries", later in this chapter.)

 As an alternative to alarms, you can warn yourself of an event by making two entries, with one of them appearing a few days before the event as a reminder, or you can enter it as a to-do which has a warning date a few days before the event.

Setting an alarm for an entry

You can set an alarm for an entry while you are entering it, or at any time thereafter.


Alarms for new entries: type the entry and press Enter. In the entry details dialog, set the 'Alarm' line to 'Yes'. Move to the 'Alarm details' line and press Tab to display the 'Alarm details' dialog. (For day entries, you can enter the time of the alarm in the main 'entry details' dialog.)

Alarms for existing entries: move to the entry and select the 'Set alarm for entry' option on the 'Entry' menu to display the 'Alarm details' dialog.

In the 'Alarm details' dialog, set the 'Alarm' line to "Yes" and type the time for the alarm in the 'Alarm at' line (remember to put in am or pm if your Series 3a is set to use a 12 hour clock). Enter the number of days prior to the entry date that you want the alarm to ring in the 'Days previous' line. Select the alarm sound that you want to use in

the 'Sound' line. You can test each sound by pressing the Menu key. Press Enter to complete the dialog.

The entry will now display a bell symbol after the text to indicate that it is set to produce an alarm.

-  To set workday alarms for a day entry or a to-do, you must make the entry repeat on your workdays. (In the 'Repeat entry' dialog, set 'Type' to 'Weekly', and 'Days in week' to include all your workdays.) Then set this repeating entry to have an alarm.

When an alarm rings

When an alarm rings, a dialog appears taking over the whole of the screen, no matter what you are doing on your Series 3a. (The Series 3a will turn itself on if necessary). The dialog shows the text and time of the entry for which it is set. The alarm starts quietly, and becomes louder. You cannot use your Series 3a until you have acknowledged the alarm.

To turn the alarm off: press Esc.

To silence the alarm: press Enter. The dialog will remain on the screen so that you can read it

To snooze the alarm: press Space. The alarm will turn off for five minutes and then resume ringing. If you press Space again, a further five minutes is added to the snooze time. You can do this to a total of 60 minutes.

Removing an alarm

If you decide that you don't want an entry to produce an alarm:

1. Move to the alarmed entry and select the 'Set alarm for entry' option on the 'Entry' menu.
2. Set the 'Alarm' line to 'No', and press Enter.

Alarms and exiting files

Open Agenda files always inform the Time application about their next alarm only. (It is the Time application which actually rings the alarm.) When an Agenda alarm rings, the open Agenda file then informs Time of the next alarm it contains, and so on.

However, when you exit an Agenda file, the Time application still knows about the agenda's next alarm. It will still ring it, but will not be able to ring any others from that file, until you open it again.

- If you did not want the alarm to ring, use the 'View next alarms' option on the 'Alarm' menu in the 'Time' application. When you get to the alarm in question, the Time application knows that the Agenda file is no longer open, and offers you the chance to remove the alarm.
- If you did want this and other alarms in the file to ring, you must re-open the file.

Changing an entry

Crossing out an entry


You can use the cross-out facility to mark entries that are completed or cancelled.

- Move to the entry concerned and select the 'Cross out entry' option on the 'Entry' menu. The entry will be displayed with a line through it.

If you cross out alarmed entries, the alarm is disabled.

You can take the cross-out off an entry by repeating the same procedure. (The 'Cross out entry' option changes to 'Reinstate entry'.) If an alarm had been set for the entry, it will be re-enabled.

To-do lists can fill up with crossed out entries. If this happens, you can use the 'To-do list settings' option, and set 'Display crossed out entries' to 'No' for the list concerned. If 'Display entries in general views' in this dialog is set to 'Yes', and the bottom line of the dialog is set to 'Yes', crossed out entries with a suitable priority will still be displayed in other views. You can therefore still use your Agenda to look back at when you did different to-dos, without them filling up the to-do view itself. (If you don't wish to do this, you should *tidy* your agenda, as explained later.)

-  If you take the cross-out off a to-do entry which is shown **in the past** in other views, it becomes "valid" and will then be displayed on **today**. If, for example, you are currently on a different day in the Day view, the entry vanishes from the screen; however, the message "Entry crossed out" is shown.

Changing the appearance of entry text


You can change the appearance of any entry with the 'Set style for entry' option on the 'Entry' menu. This lets you set the entry's style to bold, italics, underline, or any combination of the three.

To change the *default* style (**to be used for all future entries**), select the 'Set preferences' option, and choose either 'Day entry defaults', 'Anniversary defaults' or 'To-do entry defaults'. Each of these presents a dialog which includes a 'Default style' line. Move onto this line and press Tab, and you can set the default style for that type of entry.

Changing the entry type

Use the 'Change entry type' option on the 'Edit' menu to change an entry to a different entry type. For example, you might want to change a to-do entry into a day entry, or vice versa.

'Change entry type' asks for the entry details appropriate for the new kind of entry. The entry will then be displayed in the views appropriate to its new type.

-  If you are on an entry in the past and you change it to a to-do entry, the to-do will be displayed on the current day. The only way you can display it in the past - should you so wish - is to cross out the original entry before you change it to a to-do.

Changing the date of an entry

You can move an entry to a different date with the 'Change entry date' option on the 'Edit' menu. This even lets you change the due date and warning date of a to-do.

Editing entry text and details

You can edit entry text and entry details independently of each other:

To edit entry text and details: press Enter to edit the entry text. When you press Enter again, the 'entry details' dialog appears: if, instead, you press Psion-Enter, no dialog is shown, and the details remain unchanged.

To edit just the entry details: select the 'Change entry details' option on the 'Edit' menu.

Cutting, copying, inserting and deleting entries

You cannot highlight entries in the Agenda. In general, you can only do things to the entry that the cursor is on.

To cut or delete an entry: press the Delete key. Press Y to confirm and the entry will be cut from the Agenda and placed on the *clipboard*, ready for you to insert it back in if you wish.

To copy an entry: use the 'Copy entry' option on the 'Edit' menu. The message 'Entry copied' will be displayed and the entry will be copied to the clipboard, ready for you to insert it.

To insert the entry which is on the clipboard: move to the time slot in which you want the entry and select the 'Insert entry' option on the 'Edit' menu. Use the 'Change entry details' option to change any of the entry details as necessary.

To delete an entry without affecting the clipboard: press Shift-Delete.

Memos

You can attach notes to any Agenda entry with the *Memo editor*. Each memo can contain over 3000 characters. None of the text is displayed in general views; a symbol like a sheet of paper is displayed after the entry text to indicate that the entry has a memo attached. You can set individual memos to have password protection.

You can use memos to turn your Agenda into a "what I did today" type diary, which nobody else can read without the correct passwords. The Memo editor is a variant of the Word Processor, and has most of the same features.

Attaching a memo to an entry

1. Move to the entry concerned and select the 'Edit memo' option on the 'Entry' menu. The Memo editor appears.
2. Type the text for the memo. If you press the Menu key, you will see that many of the Word Processor features for manipulating and changing the styles of text are available to you.
3. When you have finished, select the 'Exit' option on the 'Special' menu, to return to the previous view. You will see that the entry is now followed by a small symbol like a sheet of paper, to indicate that a memo is attached to it.

Viewing and re-editing a memo

Use the 'Edit memo' option again if you want to read or re-edit a memo.

When you've finished, select the 'Exit' option in the Memo editor. If you've made changes which you do not want to save, select the 'Exit, abandon changes' option, also on the Memo editor's 'Special' menu.

Changing the appearance of text within memos

The Memo editor is essentially a specialised version of the Word Processor. It contains the same functions for manipulating and changing the appearance of text.

The set of styles which can be used within memos is common to all memos in the Agenda file. So if you make any change to a style, that change will affect any memo that uses that style. Initially, the same four styles are available as in new Word Processor documents.

- Use the options on the 'Paragraphs' menu to change the fonts, indents, tabs, alignment and spacing of paragraphs within a memo. (Each change you make creates a new *style*, and that style is then applied to the paragraph.)
- Use the 'Style housekeeping' and 'Emphases housekeeping' options on the 'Styles' menu for complete control over the styles and emphases of text within a memo.

Other Word Processor options

- You can use the 'Insert', 'Copy', 'Bring' and 'Evaluate' options (on the 'Edit' menu) for text within memos in the same way as you can use them within other Agenda views.
- Use 'Find' to search for text. 'Find again' searches for further occurrences of text searched for by 'Find'.
- Use 'Replace' to search for a particular piece of text and replace it with other text.
- Use 'Count' to count the number of words in the memo.
- Press the ♦ key to display an outline of a memo. (Each paragraph style has its own outline level.) The options on the 'Memo' menu to change the level of outlining. The Word Processor chapter has more details of these and other options.

Password protecting a memo

You can set each memo to have a password of up to eight characters. In the Agenda views you cannot tell that a memo has a password, but when you try to view or edit the memo, you will be asked to enter the password.

1. While editing the memo, select the 'Password' option on the 'Memo' menu.
2. Type the password in the 'Enter password' line. The characters are not displayed as you type them; padlock symbols are shown in place of each character. Type the password again in the 'Confirmation' line as a check and press Enter to complete the dialog.
3. Select the 'Exit' option on the 'Special' menu to return to the previous view.

When you next try to edit this memo the 'Password protected' dialog will be displayed. Enter the password in the dialog (again, the characters you type will not be shown), and press Enter.

Changing or deleting a password

1. Edit the memo, and select the 'Password' option on the 'Memo' menu.
2. You are asked for the password again; enter it, and the 'Change password' dialog is shown.

3. **To change the password**, type the new password in the 'Enter password' and the 'Confirmation' line. **To delete the password**, press Enter twice to complete the dialog without entering a new password.


Deleting a memo

You can delete any memo which you no longer wish to keep, by deleting all the text that it contains.

1. Edit the memo, then select the 'Highlight all text' option on the 'Edit' menu, to highlight all of the text. Press the Delete key to delete all of the text.
2. Select the 'Exit' option on the 'Special' menu to return to the previous view. The memo symbol will have disappeared to show that the entry' no longer has a memo attached.

Long memos

Memos can take up to 4K of space on a disk. If you change an entry which has a memo attached, you will use up that amount of disk space again, as the entry is re-written to disk. You should therefore try to avoid making unnecessary changes to entries with long memos.

 You can use the 'Compress file' option (or 'Save as' for Flash SSDs) to reclaim the space taken by deleted or changed entries. This is described later in this chapter.

Repeating an entry

You can repeat any entry on a daily, weekly, monthly by date, monthly by day or yearly basis. Any alarm or memo attached to the entry is also repeated.

- **'Monthly by date'** means that an entry appears on the same day each month - for example the 12th of June, 12th of July and so on. (Note that an entry on the 29th, 30th or 31st of a month can be given a 'Monthly by date' repeat; in months which do not have this day, the entry appears on the last day of the month.)
- **'Monthly by day'** means that the day of the week controls the repeat date - the first Tuesday of each month, the second Saturday, the last Thursday, and so on.

To make an entry repeat on workdays, give it a weekly repeat, then select the days in the week on which you want the entry to appear. (If your workdays were to change you would have to edit any workday repeat entries.)

Repeating entries have their repeat information stored as part of the entry. They do not use up space on disk for each occurrence of the repeat.

Using the 'Repeat entry' option

1. Move to the entry that you want to repeat and select the 'Repeat entry' option on the 'Entry' menu.
2. Select the type of repeat on the 'Type' line.
3. Type the interval for the repeat on the 'Interval' line. For example, if you want an entry to repeat every 2 weeks, set 'Type' to 'Weekly' and 'Interval' to 2 .
4. On the 'Front' line, type the date which you want the repeating entry to start from.


5. If you want the entry to be repealed forever, leave the 'Repeat forever' line set to 'Yes'. If you choose 'No', either type the date that you want the repeating entry to finish, on the 'Until' line, or type the number of times you want the entry to repeat, on the 'Occurrences' line.
6. Use the 'Show' line to set whether just the next outstanding occurrence of the entry is to be shown, or every occurrence.
7. If you are creating a weekly, monthly by date, or monthly by days repeat move to the last line in the dialog and press Tab to display the dialog for entering days and dates.


Weekly repeats: set the days on which you want the entry to repeat to 'Yes', and press Enter.

Monthly by date repeats: select the first date on which you want the entry to repeat, and press the + key to set this date. If you want any other dates for this repeating entry, select them, and press the + key for each. You might, for example, select the 3rd, 4th and 5th of every month. Press Enter to complete the dialog.

Monthly by days repeats: Select the top two lines to the day for the repeat - 'Second' and 'Tuesday', perhaps, or 'Last' and 'Friday' - and press + to set this day. Use this procedure to set any other days to repeat on. You might, for example, select the first Wednesday and last Wednesday of every month. Press Enter to complete the dialog.

8. Press Enter to complete the 'Repeat entry' dialog.

 You cannot enter more than one day for a yearly repeating entry. You must enter a yearly repeating entry for each day of the year on which you want the entry.

 If an overdue repeated to-do is not crossed out or deleted by the time the next occurrence is set to display, it is superseded by the occurrence which is now due.

Keeping track of repeated entries

Select the 'View all repeats' option on the 'Search' menu to display a list of all repeating entries. The entries are sorted by the date which you set as the 'From' date. (This is not necessarily the same date on which the entry first appears in the Agenda views). You can use the ↑↓ keys to scroll the list.

 If an anniversary has a start date before 1980, it will be listed as 1980.


Changing repeat entries

You can edit the text, modify the entry details, change the date and delete any **occurrence** of a repeating entry as you would any other entry.

When you make a change to a repeating entry, a dialog will ask you which occurrences are to be affected by the change. Select 'All', 'Just this one', 'This & all future', or 'This & all previous'. (If you make a change by using the 'Repeat entry' dialog itself, some of these choices will not be appropriate; you may find that no 'Just this one' setting is offered, or even that no dialog is shown at all.)

- If you choose 'Just this one' the Agenda creates a new non-repeating entry with the changes you made, and **disables** (hides) the occurrence of the repeating entry. The new entry has no "repeat" symbol.
- If you choose 'This & all future', or 'This & all previous', a message informs you that the repeating entry has been split into two repeating entries.

Each new entry created in the above ways inherits most of its settings from the repeating entry. Memos are inherited too; if the entry has a long memo, the new entry uses up that much more disk space.

 You cannot set the "due date" or "warning date" for a repeating dated to-do, only the number of days warning. This is because the actual dates on which the entry will be due are controlled by the "repeat" settings.

Anniversaries and repeats

Anniversary entries are always given a yearly repeat. If you use the 'Repeat entry' option on an anniversary, however, you will see that you can change the repeat type from 'Yearly' to 'Yearly by day of week'. This type of repeat is the same as a 'Monthly by day' repeat set to have an interval of '12' - that is, it repeats once a year in the same month, but on the first Tuesday, last Friday, or second Saturday (etc).

If you set the 'Type' line to 'Yearly by day of week', press Tab on the bottom line of the dialog, and set the day for the repeat.

You can also set the 'Type' line to 'No repeat', should you so wish. This allows you to make a non-repeating entry appear in the Anniversary view.


The Week view

The Week view displays all the day entries, to-dos and anniversaries for a week. Press the **◆** key until the Week view is displayed, or press Shift-Psion-W to move to it directly. It looks like this:

Jul - Aug 1993		San Prepare report for Friday	Thu 29
Week 30			
Mon 26	(1) Book a holiday (today) (2) Go Swimming (today) San Plan project	(1) Make copies of reports (Fri)	Fri 30
Tue 27	(1) Buy some food for the cat (tonorr) (2) Make appointment at hairdresser San Design Publication	Spn Party at John's	Sat 31
Wed 28	San Edit design		Sun 1

The screen is divided into eight: a title featuring the current month, year and week number, and sections for the seven days of the week. (The first day is as set in the 'Start of week' option in the Time application. In the above picture it is Monday.)

The slot for today is distinguished by having its name displayed in black while all other day names are white.

 Week numbers are always calculated from the start of the year, according to an international standard.

Movement keys

You can move the cursor with these keys:

- **←→** move to the corresponding day slot on the on the opposing page, or to the same day in the previous/next week.
- **↑↓** move to the previous/next entry, or the previous/next day slot if there are no entries in the current slot.
- **Psion←→** move to the same day in the previous/next week.
- **Control←→** move to the same day slot in the previous/next month.

- The Spacebar moves to today. Pressing it again returns to the day you were on.

Tip: To get to the **end** of a day full of entries, use PgDn (Psion-↓) then ↑.

Changing the appearance of the Week view

Select the 'Set preferences' option on the 'Special' menu, and then the 'Week view' suboption on the menu shown. The 'Preferences in Week view' dialog lets you set the position of the title, the display of entry durations and end times, and the entry types which are allowed in the Week view. You may wish to exclude to-do entries from display in the Week view, to prevent today's slot from becoming cluttered.

- ☞ The Week view always displays entries in two columns; use the List view to show a single column of entries.

The List view

The List view normally displays all the day entries and anniversaries in your Agenda, plus those to-dos of sufficient priority to appear in other views. Press the ♦ key until the List view is displayed, or press Shift-Psion-L to move to it directly. It looks like this;

July 1993	
Thu 29	Prepare report for Friday (☐10am)
Fri 30	(1) Make copies of reports (Fri) 4.00pm Dept. meeting (☐10.30pm)
Sat 31	9.00pm Party at John's
August 1993	
Tue 3	(1) Take book back to the library (3/8/93) (2) Send out invitation cards (3/8/93) (3) Pick up holiday tickets (3/8/93) ▲ Fred's birthday ☐> ■ Bake a cake 3.00pm Phone the office
Thu 5	11.00am Dept. meeting (☐12pm)
October 1993	

Entries are listed in a single column and are separated into monthly blocks. The date of an entry is given to the left of the entry text.

Movement keys

You can move the cursor with these keys:

- ↑↓←→ move to the previous/next entry.
- Control-↑↓ move to the previous/next entry at the start of a day.
- Psion-↑↓ move by a screenful at a time.
- Control-Psion-↑↓ move to the first/last entry on the list.
- The Spacebar moves to today, or as close as possible. Pressing it again returns to the day you were on.

Changing the appearance of the List view

Select the 'Set preferences' option on the 'Special' menu, and then the 'List view' suboption on the menu shown. The 'Preferences in List view' dialog lets you set the display of entry durations and end times, and the entry types which are allowed in the list.

You can also specify whether repeat entries are to be shown 'Once only' (ie at their next occurrence) or 'As normal'.

Days with multiple entries

Up to two year symbols can be displayed for each day in the Year view, though you can set year symbols for as many entries as you like for each day. When there are two or more entries, a message such as '(1/2: + - for more)' is displayed in the top right-hand corner of the screen. The text for the first entry for a particular date is shown on the top line of the screen, whenever the cursor is positioned over that date in the grid. To see the text for further entries use the '+' and '-' keys to move between them.

Movement keys

You can move the cursor with these keys:

- ←→ move to the previous/next day.
- ↑↓ move to the day above or below the current one. If you are at the top or the bottom of the year view they scroll the screen by a year.
- Control-←→ move a week at a time.
- Psion-↑↓ move to the first/last day of the month.
- Control-↑↓ move a month at a time.
- Psion-↑↓ move a year at a time.
- Control-Psion-↑↓ move by four years at a time.
- Shift-↑↓ scroll the Year view backwards/forwards by a month. (You can also use Shift with Control-←↑↓→ to keep the cursor on the same line, scrolling the Year view if necessary.)
- Shift-Space makes the current month go to the top of the Year view. You can then see the next 12 months.

Changing the appearance of the Year view

Select the 'Set preferences' option on the 'Special' menu, and then the 'Year view' suboption on the menu shown. The 'Preferences in Year view' dialog lets you set the month that is displayed first, and whether appointment durations or end times are shown with the entry text on the top line.

You can also change the display to show just one symbol at a time, for example to show all your anniversary entries, without cluttering the Year view with all the other entries for which you have set a year symbol. To do this, select the 'Which symbols' option on the 'Special' menu. Set the 'Which symbols' line to 'One', and type the 'Symbol to display'. Press Enter to complete the dialog.

As a reminder, the symbol is shown in the top left of the Year view. To return to showing all symbols, select 'Which symbols' again and set the top line to 'All'.

Managing your Agenda

As well as deleting entries, you can cross them out when they are completed (or if they are cancelled), and you can use the 'Tidy/extract' option to remove out-of-date entries.

You may wish to leave selected entries in the past, whether crossed out or not, as a "what I did" type of diary, or as a record of appointments and so on. Alternatively, you may wish to remove all out-of-date entries, and then maybe reclaim the disk space they took up.

Tidying your Agenda

Use the 'Tidy/extract' option to delete specific entries from your Agenda.

The top line of the dialog sets what should happen to tidied entries. 'Delete entries' just deletes the entries from the Agenda; 'Copy to file' copies them into a new Agenda file, but still leaves them in the current agenda file; 'Copy to file and delete entries' copies them to a new file and deletes them from the current file. For the last two of these you must enter the name for the agenda file to be created containing the tidied entries.

Choose the 'Start date' and 'End date' of entries to be tidied; however, you can set these dates automatically by setting 'Range' to 'Whole Agenda', 'From/until today', 'This week/month/year', or 'Last week/month/year'.


Two further settings control which entries are tidied:

- The 'Entry types...' line lets you set which types of entries can be tidied.
- The 'Status filter' line lets you tidy 'Crossed out entries only' (or, should you so wish, 'All except crossed out' entries).

For example, you might set both of these lines so that only crossed out to-dos were tidied.

Repeating entries appear in any file created by 'Tidy/extract', but with their date ranges clipped to the range of dates you were tidying. However, they are only **deleted** from the original file if **all** their occurrences lie within the range you are tidying.

If you chose 'Copy to file' or 'Copy to file and delete entries', you can move to the System screen and see the name of the file beneath the Agenda icon. You can access the file in the same way as any other Agenda file.

 It is not possible to use the Tidy/extract option to tidy entries into an existing Agenda file. Instead, open this other file, merge in the file created by 'Tidy/extract', and exit the file again.

Tidying to-do entries

If you use 'Tidy/extract' when in the To-do view, the dialog does not ask for dates, but instead asks which to-do lists to Tidy. Set 'Which lists' to 'AU', 'One' or 'Selection'; if you choose 'Selection', set 'Include list' to 'Yes' for each list you want to tidy, **and to 'No' for all the others.**

If you just want to tidy crossed out entries, set 'Status filter' to 'Crossed out entries only'.

Important: if you are in the Day, Week or List views when you use 'Tidy/extract', low priority to-dos which are not shown in these views will not be tidied.


Merging Agenda files

You can merge in the entries and/or preference settings from another Agenda file. You might wish to do this if you have two separate Agenda files, perhaps for work appointments and domestic entries, and have decided instead to merge them into one file.

Alternatively, you might wish to merge just the preference settings from an existing Agenda file into a new file so that it looks the same and works in the same way as your original one - or if someone else has a layout you want to use for your own Agenda.

1. If any of the files you want to merge in are open, exit them. (If you do not, you will see a 'File or device in use' message later, and the merge will fail.)
2. Open the Agenda file into which you want to merge the entries and/or preferences.
3. Select the 'Merge in' option on the "File" menu, and on the 'Merge in' line select whether you want to merge the entries, preferences or both.
4. Select the name of the file whose entries you want to merge in. and press Enter.

If you choose to merge preferences a confirmation dialog will appear. Press `Y` if you are sure you want to overwrite them.

 If you want to combine one list into another, tidy the list to a file (using the 'Copy to file and delete entries' setting), open the file and rename this to-do list to have exactly the same name as the list where you wanted the entries. Then open your main Agenda file again, and Merge in the tidied file.

Defaults for new entries

The *default* settings are the settings suggested in entry details dialogs. If you find you regularly have to make the same changes in entry details dialogs, you can change the default settings to make the Agenda more suited to the entries you want.

Select the 'Set preferences' option on the 'Special' menu. In the submenu it displays, the 'Day entry defaults', 'Anniversary defaults' and 'To-do entry defaults' suboptions control the default values suggested when you enter a new entry of each type. These suboptions also let you set the default style for each type of entry, and the default year symbol (should you choose to give an entry a year symbol).

Notes on day entry defaults

'Day entries timed by default' is a very important setting. If you are repeatedly selling 'Timed' to 'No' when entering day entries, set this to 'No' instead.

'Default position for untimed entries' controls where untimed entries should be positioned if you enter them while not in the Day view. 'Default position for timed entries' does the same for timed entries, if you enter them using Psion-Enter to avoid the 'Day entry details' dialog.

Defaults for anniversaries

If you don't like the positioning of anniversaries on the Day/Week/List views, set 'Default position for anniversaries' to a different time slot. (If you don't want them at all, you should use the 'Day view' (or 'Week view' or 'List view') suboptions of 'Set preferences', and set the 'Allowed types' line to exclude anniversaries.)

You can also set whether anniversaries should have a year symbol on by default.

You can change the position of any individual anniversary in the Day view: press Delete to delete it, then move to the desired position and use the 'Insert entry' option.

Defaults for to-do entries

You can change these settings for each to-do list **independently**. Set the top line of the dialog to the to-do list you want to change. (Having made changes, you can then change the top line to a different to-do list, and set that one.)

Note that many related settings are available from the 'To-do list settings' option, including the default position in the Day view for entries from each list.

Display functions

There are several display functions that you can use to change the display of text on your Series 3a.

'Zoom in' and 'Zoom out'

The 'Zoom in' and 'Zoom out' options allow you to cycle through the fonts available, in all views except the Year view, to increase and decrease the size of text on your screen. The font in use in each view is remembered separately. You might set the Week view to use the smallest font, for example, while the Day view uses a larger font.

Wrapping text

The Wrap function allows you to set whether text is automatically wrapped to the next line if it does not fit on one line.

When wrapping is on, the option on the Special menu is 'Wrap off'. Select it to turn off wrapping. If an entry is too long to fit on the screen it will be **displayed** truncated. (The entry itself is unchanged.) The option then becomes 'Wrap on'; select it to turn wrapping on again.

The "wrap" setting is remembered separately for each view. You might set just the Week view to have wrapping off.

 In the Year view, the 'Wrap' option is replaced by 'Which symbols'.

You can use *soft hyphens*, *hard hyphens* and *non-break spaces* within the text for more precise control of word-wrap. (See the Word Processor chapter in the manual for further details).

The time separator character

When timed entries are displayed in a view, a dot is used to separate the hours and minutes. You can change this if you wish:

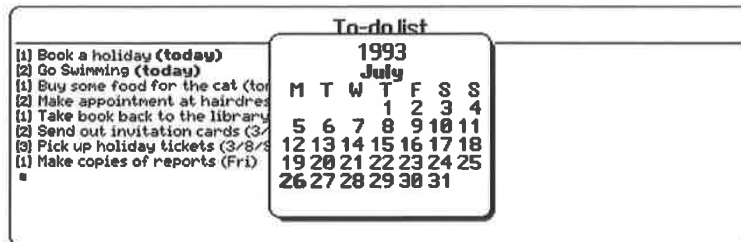
1. Select the 'Set preferences' option on the 'Special' menu, and in the submenu it displays, select 'General preferences'.
2. On the 'Time separator character' line, enter the character you want to use. Press Enter to complete the dialog.

 This does not affect the display of times in dialogs.

Entry management functions

Viewing a calendar

You can press the Tab key to display a calendar from within any view:



Similarly, Shift-Tab (or Tab twice) displays a three month calendar, while Control-Tab (or three Tabs) displays a 12 month calendar.

The ←↑↓→ keys move in their respective directions, changing month and year where necessary. To move from day to day, use Shift-←→. To move by a week at a time, use Shift-↑↓.

You can bring up a calendar, move the cursor to a particular date, then press Enter to return to the previous view, set to this date. You may find the calendar a convenient means of moving around your Agenda.

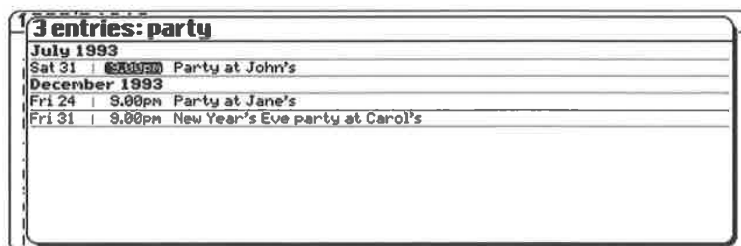
Press Esc to remove the calendar without changing the date displayed.

You can also produce a calendar in this way when entering a date in a dialog - for example, in the 'Jump to date' option.

The 'Find' option

You can use the 'Find' option to search for text, repeating entries, crossed out entries, alarmed entries and particular entry types in your Agenda.

1. Select the 'Find' option on the 'Search' menu.
2. If you want to search for text, type it in the 'Text to find' line.
3. Set the 'Start date', and 'End date' lines, or set them with the 'Range of entries' line, to select the range of entries to search.
4. Use the settings on the 'Repeat entries', 'Crossed out entries', 'Alarms', and 'All entry types' lines to modify the set of entries that are to be searched.
5. Press Enter, and the entries will be searched for:



While a search is in progress, you can move the highlight up and down the list of entries found so far. A 'Special' menu is available, with zoom, wrap and printing

options. If you see the entry you are looking for, move the cursor to it and press Enter to see this entry in the previous view.

When the search is finished the top line shows the number of entries found, and then lists the matching entries, like in the List view. If no entries were found, the message "None found" will be displayed. Press Esc to return to the previous view.

If you are searching the whole Agenda, and you have repeating entries which are set to show all their occurrences, the search could take a very long time, as it keeps finding occurrences of repeating entries. **You can press the Esc key to stop the search at any time.** (If, in the 'Find' dialog, you set 'Repeat entries' to 'Show next only', you should avoid the problem.)

 Find does not search for text within memos.

For example, you could use 'Find' to search for all the anniversaries in this year for which you have set alarms, excluding those anniversaries which are crossed out. To do this you would leave the 'Text to find' line blank, set 'Range of entries' to 'This year', and 'Crossed out entries' to 'No'. Then you would set 'All entry types' to 'No', press Tab on the 'Entry types' line and set all entry type lines except 'Anniversaries' to 'No'.

The 'Find again' option

The 'Find again' option works in the same way as the 'Find' option, but it suggests the same settings you used the last time you used 'Find'.

The previous/next entry

Use the 'Go to next entry' and 'Go to previous entry' option to jump to the next/previous entry in the current view.

The 'Jump to date' and 'Jump to list' options

You can use the 'Jump to date' option on the 'Search' menu in the Day, Week, Year, Anniversary and List views to move to a particular date. A dialog asks for the date to jump to. (Sometimes, you may find that pressing Tab or Control-Tab to navigate by a calendar is quicker.)

In the 'To-do' view, 'Jump to date' is replaced by 'Jump to list'. It asks you to select the list which you wish to jump to.

Printing entries

See the chapter on Printing later in this manual for information about printing all or part of an Agenda file.

Agenda files

All the entries in your Agenda are stored in an Agenda file. You can have more than one Agenda file on your Series 3a.

Reclaiming space - compressing Agenda files

When you delete or change an entry in an Agenda File, the original version of the entry still takes up space in the file. You may therefore need to *compress* Agenda files periodically to reclaim this unused space.


For Agenda files on the Internal disk or on RAM SSDs:

1. Select the 'Compress file' option on the 'File' menu.
The size of your current Agenda file and the amount of space used by deleted entries are displayed (in *bytes*).
2. Press Enter to compress the file. The message "Agenda compressed" is displayed when the process is completed.

You cannot reclaim used disk space on a Flash SSD until you copy all of its files to another disk, *format* the Flash SSD, and copy the files back. When you're doing this, however, you should use 'Save as', to make a new (effectively compressed) copy of the Agenda file. This is then the file to copy back to the formatted SSD.

For an Agenda file on a Flash SSD you can also get to 'Save as' via 'Compress file':

1. Select the 'Compress file' option. The same dialog is displayed showing you how much the file would compress by, but with a message saying that you must use 'Save as'. **The Enter key is displayed with the text "Save as"**.
2. Press Enter, and the 'Save as' dialog appears automatically. Type a name for the new file, and press Enter.
3. You may wish to exit the Agenda, go to the System screen and use its 'Delete file' option to delete the **old** file, in case you were to use it by mistake.

 You can make a new, "compressed" file in this way at any time, if you wish, as long as you have enough disk space free for the new file.

Making new Agenda files

You can use the 'New file' option to create as many Agenda files as you like. For example you might create two Agenda files, one for work and one for home. You can create new Agenda files from the System screen, by first moving the highlight to the Agenda icon, or from within another Agenda file:

1. Select the 'New file' option on the 'File' menu.
2. Type the name for the new file on the 'File: Name' line (maximum 8 characters).
3. On the 'Disk' line, select the disk that you want to create the file on. A message is displayed, confirming the creation of the new file.

If you move to the System screen you will now see the names of two Agenda files beneath the Agenda icon.

If you create the new file from inside the Agenda, or from the System screen while another Agenda file is open, the new file will inherit the preference settings of the open Agenda file. Only if no other Agenda file is open does the new file use the default preference settings.

Opening Agenda files

You can open Agenda files from the System screen or from within another Agenda file.

From the System screen: move the cursor over the name of the Agenda file that you want to open, and press the Enter key.

From within another Agenda file: select the 'Open file' option on the 'File' menu, and select the file to open.


If you open a file from the Series 3, the Agenda must first convert it. A dialog asks you for the name to use for the new converted file. You **must** enter a new filename: the Agenda will not allow you to overwrite an existing file.


The Series 3 is unable to open Series 3a Agenda files - you cannot transfer Agenda files back from the Series 3a to the Series 3.

Saving copies of Agenda files

You can save a copy of an Agenda file onto an SSD or the internal disk. You might wish to do this to create a second copy of the file for back-up purposes.


Select the 'Save as' option on the 'File' menu. Type the name for the copy of the file and select the disk that you want to create it on. Press Enter to complete the dialog and create the copy of the file.

 If you set 'Use new file' to 'Yes', your old file will be exited and you will start using this file instead.

 You cannot import/export plain text (ASCII) files. You can, however, use 'Print setup', set 'Printer model' to 'General' and 'Printer device' to 'File', and print all or part of your Agenda to a plain text file.

Low battery when saving an entry

If there is a 'Battery too low' or 'Batteries too low to write to Flash' error while saving an entry, you will be given a 'Fail'/'Retry' choice. If possible, change the batteries (or insert a mains lead) and select 'Retry'. If you select 'Fail', an incorrect entry will be saved. Exit the file: when you next open the file, the Agenda will remove the bad entry, and you can then add new entries after it.

 Marking it as the end of file could conceivably fail if there was no space at all on a Flash SSD, or if the SSD were write-protected. In these cases, the Agenda would exit immediately, and would refuse to open the file until you remedy the situation.


Customising your Agenda

The appearance and function of the Agenda is highly flexible; the slot times and lines that are initially displayed in the Day view, for instance, are only there for guidance. You can change the settings of many preferences to customise your Day view. You can also change the content of the ♦ list so that you can move more quickly between the views that you most frequently use. A number of example set-ups are given below to give you some ideas. You may wish to experiment until you have found the right combination of settings that you wish to use for the Agenda.

Changing the appearance of the Day view

You can change the following display preferences in the Day view:

1. Select the 'Set preferences' option on the 'Special' menu.
2. Select the 'Day view' suboption. This dialog lets you put the title on the left or right, turn slot compression, duration bars and overlap bars on or off, set whether appointments should be shown with end times or durations, and set which entry types are allowed in the Day view.
3. To change the display of slot times and lines, move to the 'Slot definitions...' line and press Tab to display the 'Slot definitions' subdialog. The settings for the left and right of the screen are separate to allow you to have different layouts on each side. For both left and right side: set the 'From' line to the time that you want the page to start on. Set the 'Slot duration' to the length of time that you want for each slot. Set the 'To' line to the time the last slot on the page ends. You can then choose among four options on the 'Show' line to determine whether or not slot times and lines are displayed.

 Even if you do not display the slot times and lines, the Agenda still knows about the time slots and will always place timed entries in their correct positions on the page. Press Enter to complete the subdialog.

4. Press Enter to complete the dialog and return to the Day view.


 The Day view always displays the day in two columns.

Changing the position of entry types

The appearance of the Day view is also affected by the entry defaults which determine the time slot in which entries of each type appear in the Day view. You can change these defaults to make entries appear at different times in the Day view. For example you could have a number of different to-do lists and make their entries appear at different times of the day.

Use 'To-do list settings' to change where a to-do list's entries appear: use the 'Anniversary defaults' suboption of 'Set preferences' to set where anniversaries should appear.

Within a single time slot entries always appear in the following order: to-dos, anniversaries, untimed day entries, then timed day entries. This allows entries of the same type to be grouped together and appointments to be sorted according to time.

 If you extend the duration of a time slot you may get two or more blocks of entries in this order, depending on the default time positions for to-dos and day entries.

Changing the ♦ list

You can change the views that are included in the ♦ list so that you can move more easily between the views that you use most frequently. For example:

- If you mainly use the Day and Week views, you could just have these two views from the ♦ list. If you're not in the Day view, the ♦ key will always go there, and a second press will always go to the Week view.
- If you mainly use the Day view, you could remove all the other views from the ♦ list. You can then always press the ♦ key, wherever you are, to go to the Day view.

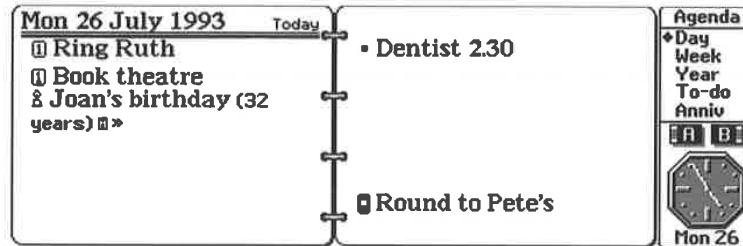
Select 'Set up ♦ list' from the '♦' menu. Set 'Yes' for the views you wish to include and 'No' for those you wish to exclude from the list.

Example setups

You may wish to make further modifications to one of the example setups outlined below, to suit your use of the Agenda.

Note: apart from 'To-do list settings', which has its own menu option, the settings referred to in these examples are suboptions of 'Set preferences'.

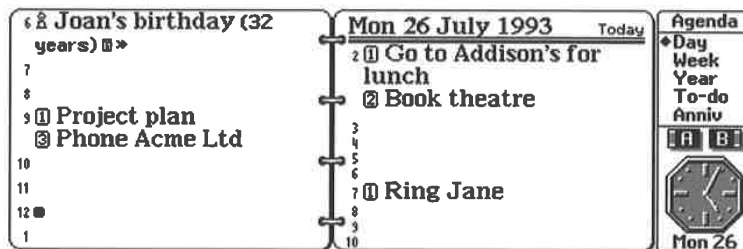
The "plain paper" agenda



- The 'Day view' preferences are set so that neither slot times nor lines are shown on either side. The times and durations of slots are left the same.
- The 'Day entry defaults' are set so that all day entries are untimed by default, and untimed day entries appear in the first morning slot.
- The 'To-do list settings' are set so that to-dos are undated by default and appear in the first morning slot.
- The 'Anniversary defaults' are set so that anniversaries appear in the first morning slot.

The To-do based Agenda

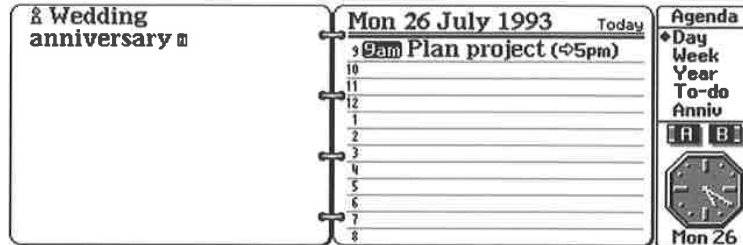
For those who have lots to do, but not many fixed appointments.



- The 'Day view' preferences are set so that:
 - The title appears on the right-hand side.
 - Slot times, but not lines, are displayed on both sides.
- The to-do lists are set up so that:
 - There is a to-do list for the different limes of the day, i.e. a list for morning, afternoon, and evening to-dos.
 - The 'To-do list settings' for each list are set so that entries on each list appear at an appropriate time of the day in the Day view. For example, morning to-do list entries appear at 9am.
 - For each list, entries of priority 3 or above are set to appear in the Day view.

- The 'Anniversary defaults' are set so that anniversaries appear in the 6am slot in the Day view.

The "plain paper" and appointment Agenda



- The 'Day view' preferences are set so that:
 - The left-hand side has one time slot from 6am to 9am. The right-hand side has hourly slots from 9am to 10pm.
 - Neither slot times nor lines are shown on the left-hand side. Both are shown on the right-hand side.
- The 'Day entry defaults' are set so that untimed day entries appear at 6am.
- The 'To-do List settings' are set so that to-dos are undated by default and appear at 7am.
- The 'Anniversary defaults' are set so that anniversaries appear at 6am.

Other editing features

The editing menu

While editing an entry, a special menu (entitled 'Edit') is available. This has a 'Copy text' option, to copy a highlighted region; an 'Insert text' option, to insert text previously copied (or cut with the Delete key); and a 'Bring text' option, to insert a copy of text highlighted in a **different** application on the Series 3a.

This menu also has an 'Evaluate' option, which lets you make calculations on figures while you are editing an entry:

1. Type the calculation that you wish to make, in the text of the entry.
2. With the cursor somewhere on (or just after) the calculation, select the 'Evaluate' option on the 'Edit' menu and the result will be displayed. The calculation is left highlighted; press the Delete key to remove it, leaving just the result.

You can use the advanced editing keys while editing an entry:

- Psion-Delete deletes to the beginning of the line, and Shift-Psion-Delete deletes to the end of the line.
- Control-Shift-Psion-← highlights the current word, while Control-Shift-Psion-→ highlights the whole of the entry.

The 'Bring entry' option


You can use the 'Bring entry' option on the 'Edit' menu to copy text from a **different** application on your Series 3a. There is more about this in a later chapter.

Note that to "bring" an entry from the Agenda into a different application you need only move the cursor onto the entry to copy. (Don't press Enter to re-edit it.) You cannot "bring" more than one entry at a time, to or from the Agenda.

Using the To-do view as a document manager

You can use the memo feature with the To-do view to store and manage small documents. For example, many people store lots of small Word Processor documents (notes and letters) in the \WRD directory. Most are less than 4K and could be conveniently stored as memos on to-dos in a to-do list. The advantages of this are:

- You can enter a document summary of up to 200 characters as the to-do entry to which the document memo is attached, as compared to an eight character filename for a Word Processor document.
- You can use the Agenda's 'Find' option to search for text within the to-dos (ie in the document summaries), making it easier to locate one document from among a large number of them.
- You can set due dates and alarms for important documents, which you cannot do in the Word Processor.

 Encryption, and formatting with styles and emphases are provided for memos in exactly the same way as in the Word Processor application.

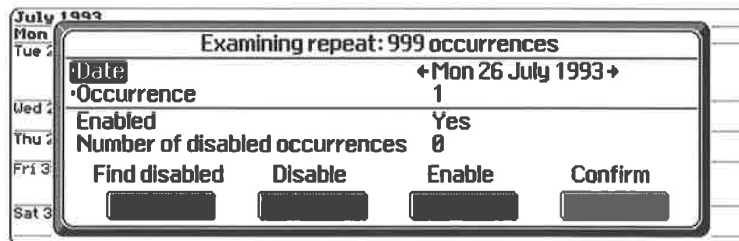
More about repeating entries

Examining the details of repeat entries

An occurrence of a repeating entry is *disabled* (hidden) if you delete just that occurrence. This also happens if you make any change to just one occurrence of a repeat: the occurrence is disabled and a new non-repeating entry, which has the change you made, is inserted at the same point.

- **Examining repeats from within the 'View all repeats' option:** Move the cursor to the repeating entry whose details you wish to examine and press Enter.
- **Examining repeats from Agenda views:** Move to the repeating entry you wish to examine and select the 'Examine repeat' option on the 'Entry' menu.

In both cases, the 'Examining repeat' dialog appears:



A maximum of 999 occurrences will be shown. Typically, you will see a message to this effect when examining a weekly or daily repeating entry which is set to repeat forever.

You can use the ←→ keys on the 'Date' line to view all the dates for the repeating entry. The number of the occurrence is shown in the 'Occurrence' line.

You can press the '+' and '-' keys to set an occurrence as enabled or disabled. You might, for example, re-enable an occurrence which you had deleted. Press the Spacebar to search for the next hidden entry.

Press Enter to confirm any changes you make. If you press Esc, the entry is left unchanged.

Creating complex repeats

You might wish to create complex repeats for events that repeat themselves on varying dates. For example, you could enter a repeating entry for your pay day that occurs on the 26th of each month, unless that is a weekend or public holiday:

1. Enter "pay day" as a monthly repeating day entry (untimed) for the 26th of each month from today's date, with an interval of one (ie set for **every** month).
2. Use the 'Set year symbol for entry' option to set a year symbol (P , perhaps) for this entry.
3. Move to the Year view and find all the occurrences of this entry which fall on a weekend or public holiday. (Weekends are shown in grey; you can enter public holidays yourself, and give them their own year symbol - H , perhaps.) For each of these occurrences, use the 'Change entry date' option on the 'Edit' menu; each time, change 'Just this one' occurrence to the date on which your pay day would occur.

7

The Word Processor

Word processors allow you to type in all kinds of information, from short notes or lists to letters or longer documents that you intend to print.

The Word Processor has powerful editing features. It word-wraps each paragraph as you type. It has 'Find' and 'Replace' functions and an 'Outline' feature, to show you the structure of longer documents. You can set different phrases or paragraphs to be bold, underlined and so on, position paragraphs to the left or right, or indent them. You can set tab positions, and enter tables of information. You can create and save different styles for text, and save templates for documents that you frequently type.

With the Word Processor you can print things like bold and underlined text, in a variety of fonts, on a range of printers. It can print plain text to almost any printer. It can show you a preview of how the document will look, before you print. You can even add headers and footers, for example to add a page number automatically to the bottom of each page.

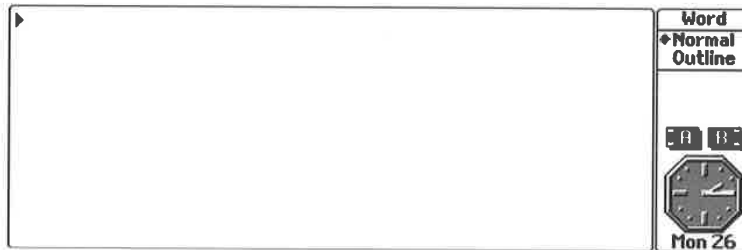
The Word Processor also offers password protection and encryption, to keep confidential information secure. (For information on passwords see the 'Security and backups' chapter.)

Basic use

The Word Processor is as powerful as many word processors used on desktop computers. **You can, however, just use it as a notepad and type in documents without learning in any detail how the Word Processor works.** It is set up to perform everyday functions - making a word bold, for example, or bulleting a paragraph - with a few simple keypresses.

The Word Processor screen

The first time you press the Word button, the screen is blank and the cursor is in the top left-hand corner:



You can change the size of the status window and turn it off and on, if you wish, by pressing Control-Menu.

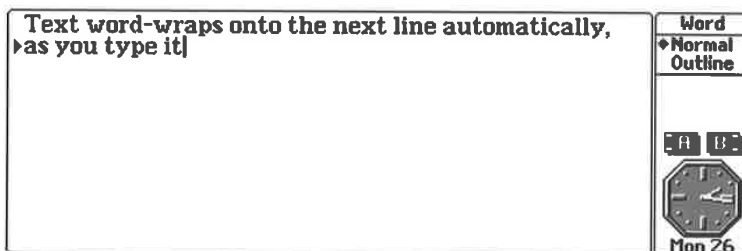
About printing

A separate chapter deals with printing information from the Series 3a. After showing you how to set up the Series 3a for a given printer, it covers "simple printing" from the Word Processor, before moving on to more advanced topics.

As you'll see, Word Processor features which only affect printing, such as headers and footers, and the 'Spacing' option on the 'Paragraph' menu, are covered in the 'Printing' chapter.

Editing text

You can begin typing a document straight away. Everything you type appears in the main part of the screen. The text you type word-wraps when it reaches the right-hand side. For example:



Press Enter when you want to start a new **paragraph**. The cursor moves to the start of the next line.

If you are new to word processors, type in any kind of text at all for the moment, and try out the keypresses and options suggested in this chapter.

As in many other Series 3a applications you can use the 'Zoom in' and 'Zoom out' options on the 'Special' menu to change the display size of the text you type.

Using paragraphs


Paragraphs are an important concept in any word processor. Every time you press Enter, you end the current paragraph and start a new one. The word *paragraph* applies even to headings, or to a few words on their own. For example, if you type Dear Sir/Madam and press Enter, the Dear Sir/Madam is a separate paragraph. As you'll see, many display features, such as font settings, are often applied to paragraphs as a whole.

To start a new line without starting a new paragraph - when typing an address, for example - use Shift-Enter. Such *forced line breaks* are marked on the screen with a down-arrow symbol.

No blank lines are shown on the screen between adjacent paragraphs, so that as much text as possible can be displayed. (If you print documents, you can separate adjacent paragraphs by any amount of vertical spacing - not just by whole lines.)

There are several ways to see more clearly where one paragraph ends and the next begins:

- **To mark the start of each paragraph.** Select 'Set preferences' on the 'Special' menu, and set 'Show style bar' to 'On'. The start of each paragraph will now be marked by the two-letter *shortcode* - such as 'BT' - of the *style* which each paragraph is using. Marking the start of each paragraph in this way does not affect the printed document. (There is more information about styles and their shortcodes later in this chapter.)
- **To mark the end of each paragraph.** Select 'Set preferences' on the 'Special' menu, and set 'Show carriage returns' to 'Yes'. The Word Processor will now mark the end of each paragraph with a symbol like the one on the Enter key. Marking the end of paragraphs in this way does not affect the printed document.
- **To indent the first line.** Select 'Indents' from the 'Paragraphs' menu. Move the highlight to the 'First line' line and type a suitable value. Indents are initially measured in inches. (The unit of measurement is set using the 'Printer setup' option on the System screen.) Press Enter to complete the dialog and return to the document. Indenting the first line of particular paragraphs in this way does affect the appearance of those paragraphs in the printed document.

 You can use this option to set an indent for the current paragraph, as above, or all paragraphs using the same style. Styles and their shortcodes are explained later in this chapter.

Moving the cursor

Whatever you type is always inserted at the cursor position. You can move the cursor around the text with the ←↑↓→ keys. You can also use the following keypresses:

- Control-← and Control-→ move the cursor a word at a time.
- Psion-← ('Home') and Psion-→ ('End') move to the start and end of the line respectively.
- Control-↑ and Control-↓ move the cursor up and down by a paragraph at a time.
- Psion-↑ ('Pg Up') and Psion-↓ ('Pg Dn') move the cursor up and down by a screenful at a time.

- Control-**P**ision-**↑** (Control-PgUp) and Control-**P**ision-**↓** (Control-PgDn) move the cursor to the top and bottom of the document

Long documents

If you type a long document, you can move from page to page with the 'Jump to page' option on the 'Search' menu. The Word Processor calculates where pages would begin and end if you were to print, and lets you move to the start of any page.

Page ends are shown as a dotted line across the screen. For more details of page breaks, see the 'Printing' chapter.

Highlighting text

You often want to highlight an area of text - so that you can delete or copy it. perhaps. You can use Shift with any of the previous 'cursor movement' keypresses to start or extend a highlight by the same amount. For example:

- Shift-**←→** move a highlight one character at a time.
- Shift-**↑** and Shift-**↓** highlight a line at a time.

You can use the 'Highlight all text' option on the 'Edit' menu to highlight all the text in a document.

Esc removes any highlight.

More advanced keypresses:

- Control-Shift-**P**ision-**←** highlights the current word, and Control-Shift-**P**ision-**→** highlights the current paragraph.

Splitting text in a paragraph


Position the cursor at the point where you want to split the text and press:

- Enter to start a new paragraph.
- Shift-Enter to start a new line without starting a new paragraph.

Deleting text

To delete characters you have typed position the cursor and use:

- The Delete key to delete the character to the left of the cursor.
- Shift-Delete to delete the character to the right of the cursor.
- A highlight to mark an area of text and then press Delete to delete the whole area.

 **Text that is deleted by highlighting an area of text and then pressing the Delete key is placed on the clipboard.** (This is like the 'cut' function on some other systems.) The text on the clipboard remains intact until you copy or delete something else onto it, or you exit the Word Processor. To delete highlighted text without replacing the clipboard, press Shift-Delete.

If you delete text by mistake, use the 'Insert text' option to put it back (*undelete* it).

 You cannot use 'Insert text' to replace characters deleted with Shift-Delete.

As you delete text, paragraphs are word-wrapped again.

If you press Delete when the cursor is at the start of a paragraph, the two paragraphs either side of the cursor are joined together. The same happens if you press Shift-Delete when the cursor is at the end of a paragraph.

Advanced Delete keypresses:


- Psion-Delete deletes to the beginning of the line.
- Shift-Psion-Delete deletes to the end of the line.

The deleted text is also put on the clipboard, replacing any previous text there.

Copying text

You can copy any area of text and insert new copies of it elsewhere in your document:

1. Highlight the area to copy.
2. Select the 'Copy text' option on the 'Edit' menu. A copy of the text is placed on the clipboard. Any text previously on the clipboard is lost. A 'Copied' message is displayed.
3. Move to the place where you wish to insert the copy, and select the 'Insert text' option on the 'Edit' menu. You can use this option to insert as many copies of the text as you like, anywhere in your document.

 Each application - Word Processor, Database, Agenda and so on - keeps its own clipboard. If you want to copy information between different open files, see the separate chapter on 'Moving information with 'Bring''.

Moving text

To move text around, just delete it, move the cursor to the new position, and insert it:

1. Highlight the area to move.
2. Press the Delete key. The Word Processor deletes the text from the document and puts it on the clipboard.
3. Move the cursor to the place where you wish the text to be, and select the 'Insert text' option on the 'Edit' menu. You can insert more than one copy, if you wish, by using 'Insert text' again.

Wordcount

To find the number of words in your current document, select the 'Count' option on the 'Search' menu.

The 'Evaluate' option

You can use the 'Evaluate' option to work out a calculation while you're typing:

1. Type the calculation without putting an = at the end.
2. If the calculation is all on one line and has no spacing, just move the cursor onto it; otherwise, highlight it with Shift-← or Shift-→. Then select 'Evaluate' and the result will appear.
3. The calculation is left highlighted; press the Delete key to remove it, leaving just the result.

You can also use 'Evaluate' to sum a list of highlighted numbers, like this:


```
25.16
+10.00
+121.08
-43.71
```

Results are initially shown with two decimal places. You can use the "Evaluate" format' option on the 'Control' menu of the System screen to set results to be in any format supported by the Calculator. See "Decimal places, accuracy, and number formats" in the 'Calculator' chapter.

Word-wrap features

The Word Processor word-wraps your text to the screen width. Word-wrapping occurs at the last suitable space or hyphen in a line. As you'll see, if you print the document it will be word-wrapped to the page width. You can, however, control word-wrapping yourself:

- *Forced line breaks* (press Shift-Enter) are used to make text start a new line.
- *Non-break spaces* (press Control-Space) are spaces at which word-wrap cannot take place. Use them between words or characters which should always stay together - initial and surname, perhaps, like 'J. Smith'.
- *Hard hyphens* (press Control-Shift-hyphen) are hyphens at which word-wrap cannot take place. These are displayed slightly lower on the screen than ordinary hyphens.
- *Soft hyphens* (press Control-hyphen) mark a place at which hyphenation for word-wrap can occur if necessary. A soft hyphen only appears on a printout if it causes word-wrap to occur.

 If you select the 'Use printer layout' option on the 'Word' menu, you can see your document (and even edit it) word-wrapped as it would be on the printed page.

Special characters

The 'Set preferences' option on the 'Special' menu lets you display special characters which are not always easy to see:

Special character:	Displays as:
Tab	right-arrow
Space	dot
Paragraph end	symbol on the Enter key
Soft hyphen	hyphen with gap
Forced line break	down-arrow

This only affects the screen display: these symbols are never printed.

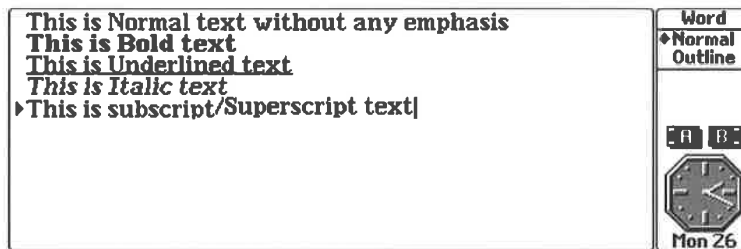
 Non-breaking spaces are always displayed as spaces, even if you set spaces to display as dots.


Using Bold, Italic and Underlined text

You can change the appearance of a highlighted word or phrase by holding down the Control key and typing the two-letter *shortcode* of the *emphasis* you wish to use:

Shortcode:	Emphasis:
BB	bold
UU	underline
II	italic
SS	subscript
EE	superscript
NN	resets to normal text

All of these settings are shown both on the screen and on the printed page:



 You don't have to highlight an area first. If you want to start typing bold letters, for example, press Control-B-B, and start typing. To return to normal letters, press Control-N-N, or move the cursor away from this area.

These settings are pre-defined *emphases*. There is more about defining and using your own emphases later in this chapter.

The saved file on the disk

The Word Processor does not work directly on a file; it loads the information from the file into memory, and it is this "in-memory" working version which you edit.


The 'Exit, lose changes' option

As in other Series 3a applications, the normal 'Exit' option will always save the current document to file. If you were just playing around with a document you may wish to use the 'Exit, lose changes' option instead, to exit the Word Processor **without** saving any changes to the file.

Saving the document to disk

If you are about to make large changes to your document or generally experimenting with the Word Processors features, you may wish to save the document as it is, so that you can revert back to the way it was if anything goes wrong.

- Use the 'Save' option on the 'File' menu, before you make the changes, to copy this working version to the real file on the disk.

-  The file is also saved when you use the 'Exit' option, or if you change to a different file, either with the 'Open file' option on the 'File' menu, or from the file list in the System screen.

Reverting to the saved document

- Select the 'Revert' option on the 'Edit' menu to revert to your previous document. 'Revert' re-loads the file on disk, losing any changes you had made to the in-memory version.

Running out of disk space

Whenever it saves a file, the Word Processor deletes the old version from the disk, then saves the new one. First, though, it checks the free disk space; if there might not be enough space to save the new version, it just displays a 'Not enough space left to save file' message.

In rare circumstances, though, the Word Processor can try to save and still fail with a 'Disk full' error. It will then display a 'File deleted; cannot exit until file is saved' message. Even the 'Exit, lose changes' option will not work, **because the original file on disk has been deleted**. If you were to quit, the file would be gone forever.

- **To save the file**, use the System screen to free some more disk space, then try the Word Processor's 'Save' option. Once you have successfully saved the file you will be able to exit it. (See the 'Troubleshooting' chapter for more information about freeing disk space.)
Alternatively, use 'Save as' to make a new version of the file on a different disk. In the 'Save as' dialog, you **must** set 'Use new file' to 'Yes'.
- **If you want to abandon the file, even though it has been deleted from the disk**, go to the System screen, move the highlight to this file under the Word icon, and select the 'Kill application' option on the 'Apps' menu.

Working with document files

Creating new documents


You should use a separate Word Processor file for each separate document, memo, notepad and so on that you type. You can create new files from within the Word Processor, or on the System screen.

In the Word Processor:

1. Select the 'New file' option on the 'File' menu.
2. The 'Create new file' dialog will appear. Type the name for the new file on the 'File: Name' line, for example `memo1` . The name can be from one to eight letters and numbers, and must begin with a letter.

To make the new document on the 'Internal' disk: set the 'Disk' line of the dialog to 'Internal'.

To make the new document on an SSD: set the 'Disk' line of the dialog to the *SSD drive*, A or B , whichever drive contains your SSD. This frees more internal memory for other information. See the 'Files and disks' chapter for further information about using SSDs.


 If you use a Flash SSD, it is better to keep your document on the 'Internal' disk until you have completely finished editing it, and then copy it to the SSD.

To create the new file using a document template: set the 'Use template' line to 'Yes' and enter the name of the template file on the 'Template: Name' line. Leave the 'Use template' line set to 'No' for now. (Template files are described later in this chapter.)

3. Press Enter and the new file is created. You will see its filename displayed at the top of the status window. If you move to the System screen, you will be able to see its filename below the Word icon.

On the System screen:

1. Place the highlight below the Word icon and select the System screen's 'New file' option from the 'File' menu.
2. Follow steps 2 and 3 above to complete the 'Create new file' dialog shown.

 **Preferred settings for new files** - when you create a new file, it is given the same standard settings for items such as 'Set preferences' and 'Print setup'. **You can, however, give new files your preferred settings**, by creating a *default template*. This is covered later in this chapter.

The list of files on the System screen

On the System screen, under the Word icon, is a list of all the Word Processor documents you have created. The file in which you first typed is called `Word`:

- If you typed real information of some kind and you want to keep it, you may like to use the System screen's 'Rename file' option on the 'File' menu, and give this file a more appropriate filename than `Word`.
- If you were just typing anything while you learned about the Word Processor, you can use the System screen's 'Delete file' option on the 'File' menu, and delete the file altogether.

If the file is open - ie, shown in bold - you need to exit it (by pressing the Delete key) before using the 'Delete file' option. Otherwise, a 'File or device in use' message will be shown.


Opening existing documents

There are two ways to *open* (use) a particular document:

- On the System screen, move the highlight onto the name of the file you want and press Enter. You will move to the Word Processor screen for the document you selected and exit all other open documents. Instead of Enter you can **press Shift-Enter** if you want to open the file without exiting the existing open file(s). (See the 'Open files' chapter for further details of using Shift-Enter to open files.)

or:


- If you are already using the Word Processor, use the 'Open file' option on the 'File' menu, to exit the current document and display the 'Open file' dialog. Choose the name of the file that you want on the 'File name' line and press Enter to open it.

 If the name of the file that you want is not on the list, check that the setting on the 'Disk' line is correct for the disk where the file is stored, that is, 'Internal', 'A', or 'B'.

The name of the currently open document is shown at the top of the status window.

Copying document files

1. Use the 'Save as' option on the 'File' menu to display the 'Save as' dialog.
2. Type the name you want to call the copied file.
3. You can copy the document to the internal disk or to an SSD. To copy it to an SSD: set the 'Disk' line of the dialog to the *SSD drive*, A or B , whichever contains your SSD. This frees more internal memory for other information.
4. If you want to start using the new version of the file, set the 'Use new file' line to 'Yes'. If you're just making a backup of your document, leave 'Use new file' set to 'No'.
5. The 'File type' line controls the type of file created. Leave it set to 'Normal'. for ordinary Word Processor documents.

 Remember that, with a Flash SSD, it is better to wait until you have finished the document completely, and then copy it to the SSD.

Deleting document files

You can delete any document file that you no longer want to use from the internal disk of your Series 3a, or from any SSD on which the file has been saved.

You cannot delete files from within the Word Processor. Press the System button to move to the System screen. A list of all your files will be shown beneath the Word icon.

You cannot delete files when they are open (in use). An error message will be shown to tell you that the file is in use. Press Esc to remove the message, then press the Delete key and press Y to exit the file.

To delete a file:


- Highlight the name of the file and select the 'Delete file' option on the 'File' menu. The name of the file should be given on the 'File: Name' line. Press Enter and then Y to confirm and the file will be deleted, or N to cancel deleting the file.

To delete a file from an SSD when the name of the file is not shown on the list on the System screen:

1. Highlight the name of any other file on the list. The 'Delete file' dialog will appear
2. Move the highlight to the 'Disk' line and choose the drive in which the SSD is placed. Then choose the name of the file that you want to delete on the 'File name' line.
3. Press Enter and then Y to confirm and the file will be deleted, or N to cancel deleting the file.


File size

The Word Processor can handle up to 40K of text in each file. If you try to open a file which is larger than this, an 'Overflow' message will be displayed.

 File size can also be restricted by the number of internal *index entries* in use. The Word Processor uses one index entry for each paragraph, and two for each *emphasis* (phrases which are bold, underline etc). Its limit is 1700 index entries. A long document consisting only of very short single-line paragraphs might hit this limit before hitting the 40K limit.

If you have copied or deleted a very large area of text, this reduces the current maximum size by a similar amount.

If you are typing or trying to insert text from the clipboard, and you reach the size limit, a 'Maximum number of characters reached' message is displayed.

-  When the Word Processor has a large file open, certain operations (such as copying a large area of text to the clipboard) can cause a 'No system memory' message to be displayed. This happens because for each open file the Word Processor can only use 64k of memory, for the information from the file itself, the clipboard, and the memory the Word Processor itself needs to get started. Go to the System screen and press the **◆** key to see whether the internal memory is really full.

Printing

A separate chapter deals with printing information from the Series 3a. After showing you how to set up the Series 3a for a given printer, it covers "simple printing" from the Word Processor, before moving on to more advanced topics.


Features which affect printing, such as the 'Spacing' option in the 'Paragraph' menu, are covered in the 'Printing' chapter.

Altering a paragraph's appearance

The appearance of paragraphs on the screen

As you will see, many settings in the Word Processor are for the **printed** page:

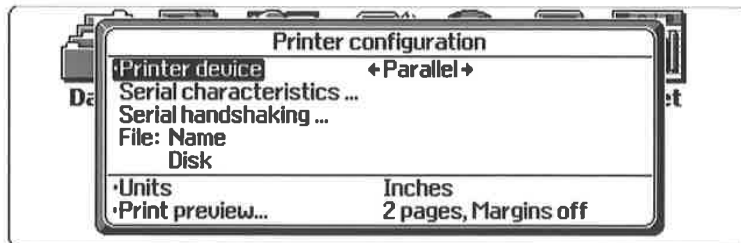
- Some settings, such as paragraph indents, are not shown exactly on the screen; text is normally word-wrapped to the screen width as you type. (When you are ready to print, the 'Use printer layout' option will display the document laid out as it will appear on paper.)
- Some settings, such as font size, cannot be shown on the screen at all.

-  Different fonts are not shown on the screen. However, if a font has *serifs* - the "tails" on the corners of letters, which guide the eye along lines of text - a serif display font will be used. (Conventionally, as in this manual itself, the main text of a document uses a serif font, while headings use a *sans serif* (no serif) font.) Monospaced and proportional fonts are also distinguished on the screen.

Units of measurement

Some settings are distances on the printed page - for example, paragraph indents and tab positions. These are measured in inches or centimetres, according to the 'Units' that are set in the 'Print' option on the 'Control' menu, **on the System screen**.

The System screen's 'Printer configuration' dialog looks like this:



If you have not already done so, select the 'Printer' option from the 'Control' menu on the System screen, move to the 'Units' line of the 'Printer configuration' dialog, and set the line to your preferred setting.

The Word Processor only takes account of this setting when *opening* (moving to) a file. If you want to change the units for the File which is currently open, select the 'Exit' option on the Special menu to exit the file, highlight the name of the file on the System screen, and press Enter.

The options on the 'Paragraphs' menu

The options on the 'Paragraphs' menu allow you to set the font, indents, tabs, text alignment and line spacing for a paragraph.


You would normally use the 'Paragraphs' options to change the appearance of just the current paragraph. You can, however, use them to change a number of adjacent paragraphs:

- Highlight the paragraphs that you wish to change and then use the required option on the 'Paragraphs' menu. Leave the 'Alter' line set to 'Current paragraph(s)'.

Warning: this always sets all of the paragraphs concerned to have **all** of the same layout settings.

You can also use these menu options to change all the paragraphs in a document which have the same *style* as the current paragraph:

- Use the required option on the 'Paragraphs' menu and set the 'Alter' line in the option dialog to 'All using this style'.


 'All using this style' refers to the paragraph style. The default style is 'Body text' (BT), which is a basic style. When you change a paragraph with the 'Paragraphs' options, the Word Processor records the change you have made and saves this as a new style. It gives the style a shortcode, starting from 'ZA' then 'ZB', 'ZC' and so on. Styles, described in full later in the chapter, make it easier to set and apply changes.

Changing the font of a paragraph

The 'Font' option allows you to set font and size, underline, bold, italic and print position for text in a paragraph. **Different fonts and font sizes cannot be shown on the screen - they are just used when the document is printed.**

The fonts and sizes available for you to choose from are governed by the printer model the Series 3a is set to use. You can set the printer model with the 'Print setup' option on the 'Special' menu. (See the 'Printing' chapter for more details.)

1. Move to the paragraph or highlight the paragraphs whose font you wish to change and select the 'Font' option on the 'Paragraphs' menu.
2. Set the 'Font' line to the font you want and select the size on the 'Size' line. Font sizes are conventionally specified in *points*, and the Series 3a uses this convention. There are 72 points in an inch.

 All fonts are either *proportional* (characters vary in width) or *monospaced* (characters are all the same width), and they are shown as such on the screen.


3. Use the other lines of this dialog to set any combination of bold, underline and italic, to be applied to the paragraph as a whole.

Bold, underline and italic **are** shown on the screen. ('Font', 'Underline', 'Bold' and 'Italic' all have an 'Inherited' setting, but this will only be of use when you begin to use styles explicitly.) Don't set the 'Print position' line.

4. Set the 'Alter' line to change to either the current paragraph(s) or all paragraphs using the current style. Press Enter to complete the dialog.


Indenting a paragraph

1. Move to the paragraph (or highlight the paragraphs) you wish to indent, and select the 'Indents' option on the 'Paragraph' menu. The 'Set Indents' dialog will appear.
2. Set the type of indents you want. 'Left', 'Right' and 'First Line' and how far from the left or right you want to position the text.
3. Set the 'Alter' line to change to either the current paragraph(s) or all paragraphs using the current style. Press Enter, to complete the dialog.

 The size of the indents you set is measured in the units that are shown in brackets in the title of the dialog (either inches or centimetres). You can change the units with the 'Printer' option on the 'Control' menu in the System screen.


A 'Left' indent will indent all but the first line of the paragraph, in relation to the other paragraphs. 'First line' lets you set an indent for the first line of the paragraph, as is common in letters. If you set both 'First line' and 'Left' indents, the whole paragraph will be indented.

Right indents position the text away from the right-hand margin by the amount you specify.

 These are **not** margin settings for the document. When you come to print, you'll find separate options which set the overall left and right margins on the paper.

Setting tab positions

When you press the Tab key while typing, the cursor moves to the next predefined Tab position to the right. You can define up to eight tab positions for a paragraph. You might, for example, set the first tab position to 1 cm from the left-hand side, the second to 2cm, and so on. Tab positions are measured in the units - inches or centimetres - you specified with the 'Printer setup' option in the System screen.

 The Body Text (BT) style is supplied with the Series 3a with tab positions already set. You can, of course, change or delete these settings if you wish.

To set or change tab positions:

1. Move to the paragraph or highlight the paragraphs whose tab positions you wish to set and select the 'Tabs' option on the 'Paragraphs' menu. The Set tabs dialog will appear. The title of the dialog indicates which unit of measurement is set.
2. Select the Tab number (1 to 8) on the 'Select tab' line and type the distance from the left-hand margin for the Tab 'Position'.
3. Set the 'Type' of tab you want to use. There are three types of Tab:
 - *Left tabs* are like Tabs on a typewriter.
 - *Right tabs* align the right-hand side of words.
 - *Centre tabs* centre a word around the tab position.

You can set up any combination of left, centre and right tabs. All three tab types can be shown on the screen.

4. Set the 'Alter' line to change to either the current paragraph(s) or all paragraphs using the current style. Press Enter, to complete the dialog.


You can view a symbol for Tabs by setting the 'Show tabs' line in the 'Set preferences' dialog to 'Yes'. If, when you insert a Tab, the cursor is already past the rightmost tab position, or if the next Tab position to the right is close to or beyond the right edge of the screen, the Tab will be shown as a single character - either a space or an arrow symbol, according to the setting in 'Set preferences'.

The following three example paragraphs show the different types of tabs; the first paragraph has left tabs, the second right tabs, and the third centre tabs.

Left- hand- which follow	tabs- edges of text- them.	align the strings	
Right- hand- which follow	tabs- edges of text- them.	align the of text- strings	
Centre- centres- follow	tabs- of text strings- them.	align the which	

Word
Normal
Outline

A B



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Creating tables using tabs


Tabs can be used to display items of information as a table. Type each item of information that is to appear in a row within the table (including row and column headings) separated by Tabs. Each row in a table can take up only one line. This means that each item in each column cannot be wrapped onto more than one line. At the end of each line press Shift-Enter rather than Enter so that the table remains a single paragraph.

Now use the 'Tab' option on the 'Paragraph' menu, and set some regularly spaced left tabs for this paragraph to form the columns of the table:

Chicago	Guards	Centers	Tackles
Tampa Bay	5	9	10
Detroit	12	4	12
	9	n/a	4

Word
Normal
Outline

A B



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If you are going to print your table, you can make sure that it is always printed as a whole on one page. Select the 'Spacing' option on the 'Paragraph' menu, and set 'Keep together' to 'Yes'.

In its normal display, (screen layout) the Word Processor cannot always position tabbed text exactly the way it will be positioned when printed. (This is because of the Word Processor's rules for displaying tabs, and because of differences in font widths between screen and printer.)

To be sure of how your table will be laid out in print, select the 'Use printer layout' option from the 'Word' menu. (This also word-wraps paragraphs as they would be wrapped if printed.) The option becomes 'Use screen layout'; select it to return to normal editing. (There is more about 'Use printer layout' in the 'Printing' chapter.)

- ☞ If you want to add up columns of numbers, highlight the whole table, then go into the Spreadsheet and use 'Bring' to copy the table in. You can then use the SUM function to add up a column: if, for example, the column goes from cell B2 to cell B6, sum it by entering =SUM(B2 : B6) in some other empty cell.

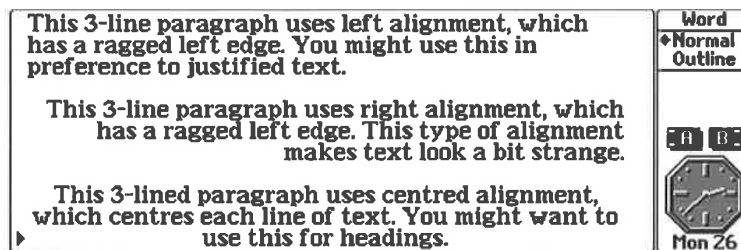
Aligning paragraph edges

To specify how the left and right edges of a paragraph are aligned:

1. Move to the paragraph or highlight the paragraphs whose alignment you wish to change and select the 'Alignment' option on the 'Paragraphs' menu.
2. Set the 'Alignment' line to the type of alignment you wish to use:
 - *Left*-, the left edges of every line are neatly lined up, while the right edges are not. This alignment is sometimes called *ragged right*.
 - *Right*: the right edges of every line are neatly lined up, while the left edges are not. This alignment, sometimes called *ragged left*, looks rather strange, and is only occasionally useful.
 - *Centred*: every line is centred on the screen. This is usually for one-line paragraphs.
 - *Justified*: both the left and right edges of every line are neatly lined up. **This cannot be shown on the screen, and paragraphs set to use 'Justified' alignment are displayed on the screen as if they had 'Left' alignment.** However, when printed, extra spacing is added between words to ensure that each line has the same width on the paper.
3. Set the 'Alter' line to change to either the current paragraph(s) or all paragraphs using the current style. Press Enter, to complete the dialog.

 When you first type in paragraphs of text, they use 'Justified' alignment.

The following example screen shows paragraphs using left, right and centred alignment:



Using styles to change a number of paragraphs

When you make changes to a paragraph's layout, the Word Processor automatically creates *paragraph styles* to define the paragraphs. You can use the Word Processor in this way without needing to know anything about paragraph styles.

However, if you want to change quite a few paragraphs in the same way - for example, to give most of your paragraphs a first-line indent - you can make things easy by learning to use paragraph styles directly. Paragraph styles are described later in this chapter.

Example uses of the Word Processor

The Series 3a Word Processor has many powerful features that can help you to create different kinds of documents - letters, memos and reports, for instance. At first it may be difficult to see how to use them to create the document you want. The following examples demonstrate how to combine features to perform everyday editing and printing tasks. (All of the features are described in more detail in the rest of this chapter.)

If you are happy with the basics of using the Word Processor you may wish to try out some of these examples, referring to relevant sections in the rest of this chapter if you need further help.

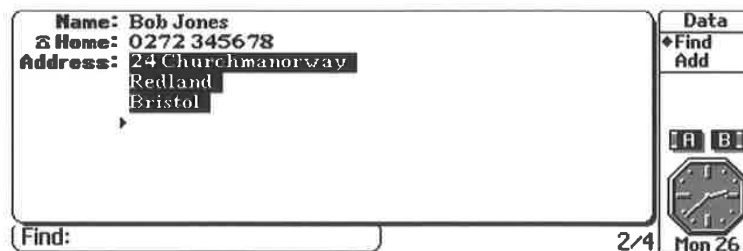
Copying text from another Word Processor document

1. Open the document which contains the text you wish to copy, and highlight the text. Then select the 'Copy text' option from the 'Edit' menu. This copies the highlighted area onto the clipboard.
2. Use the 'Open file' option on the 'File' menu to open the document in which you want to insert the text, and move the cursor to the position where you want to insert it.
3. Select the 'Insert text' option on the 'Edit' menu. The text is copied from the clipboard into the document.


You can insert further copies of the text, if you need to, by using the 'Insert text' option again. The text remains on the clipboard until you delete or copy another piece of text.

Copying an address from the Database

1. In the Database, find the address you wish to copy.
2. Use ↑↓ to move the cursor to the start of the address, then use Shift-↓ to highlight the lines which you wish to copy, like this:



3. Go to the Word Processor file, and position the cursor at the place where you want to insert the address.
4. Select the 'Bring text' option on the 'Edit' menu and the address will be inserted.

 For further details of copying addresses from the Database, see the chapter on the 'Bring' options.

Putting an address on the right

1. Put the cursor in the middle of the first line of the address.
2. Hold down a Shift key, and press ↓ until a highlight extends into the last line of the address.

3. **To line up the left-hand side of the address:** select the 'Indents' option on the 'Paragraphs' menu. Enter a suitable indent - ie how far in from the left margin the address should be - both on the 'Left' and 'First line' lines of the dialog.
Alternatively, to line up the right-hand side of the address: select the 'Alignment' option on the 'Paragraphs' menu, and use the → to set the 'Alignment' line to 'Right'.
4. Leave the bottom line of the 'Set indent' or 'Set alignment' dialog set to 'Current paragraph(s)'. Press Enter to complete either dialog.


Indenting first lines of paragraphs

1. Move the cursor to a paragraph whose first line you wish to indent, and select the 'Indents' option on the 'Paragraphs' menu.
2. Move the highlight to the 'First line' line and type a suitable value for the indent. (The title of the dialog tells you the unit of measurement that is currently being used.)
3. If you want to indent just the current paragraph press Enter to complete the dialog. If you want to indent all the paragraphs that are using the same paragraph style, move to the 'Alter' line and change the setting to 'All using this style'; then press Enter to complete the dialog.

If you intend to use indents for a number of different types of paragraphs, for example for greetings, sign-offs and body text, you can define a paragraph style for each of them that includes the first line indent that you wish to use. (See the section on 'Managing Styles', later in this chapter for further information on defining new styles.)

Writing a standard letter - document templates

When you have found a look which you like for letters, you can save the page/printer settings, paragraph styles, any text you always use (such as an introductory paragraph), and an appropriate cursor position as a *template*. When, in future, you want to create a new letter, you can then use the template and save a lot of time. You can create as many new documents as you like from the same template.

 In this example an existing document is saved, text is deleted from it to create the template and then the 'Revert' option is used to restore the document to its former state. If you were to exit the Word Processor, or open a different file before using 'Revert', you would not be able to restore the document to its former state.

1. Open a letter which has the styles and printer settings you like (or create a new one with the styles and printer settings you want to use in your standard letters). Select 'Save' on the 'File' menu to save the file.
2. Delete any text, leaving only the text that you want to use in your standard letters - for example, your address, a greeting such as " Dear ", and perhaps " Yours " and your name at the bottom.
3. Position the cursor at a suitable place, such as immediately after the " Dear ".
4. Use the 'Save as template' option on the 'File' menu, and enter a suitable filename for the template, such as " letter ".
5. Having saved the template file, **select the 'Revert' option on the 'File' menu, and press Y** to restore this particular document to its previous state.

In future you can create a standard letter like this:

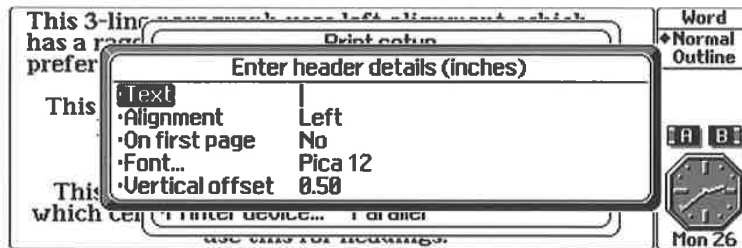
- Select the 'New file' option on the 'File' menu. In the dialog which appears, set 'Use template' to 'Yes', and enter the name of your template file (e.g. letter).

The new file is created with all the correct styles and printer settings. The cursor is positioned ready for you to type the name of the addressee, and the main body of the letter.

Printing simple headed paper

You can enter text - a company name, perhaps - to appear as a *header* on every page.

1. Select the 'Print setup' option on the 'Special' menu. Move to the 'Header' line and press Tab, to display the 'Enter header details' dialog:



2. Type the text for the header in the 'Text' line (maximum 80 characters). Set 'Alignment' to control the horizontal position of the text. Set 'On first page' to 'Yes' so that the header will appear on every page.
3. Move to the 'Font' line and press Tab to display the 'Font' dialog. Choose the settings for each line to set the size and appearance of the text. You might, for example, choose to increase the font size, so that the header stands out. Press Enter to complete the dialog.
4. Move to the 'Vertical offset' line to set the vertical position of the header. It is initially set so that the header appears 0.5 inches below the top of the page. Press Enter to complete the dialog.

Tip: to get the header to print with a horizontal line all the way across the page, experiment with right-aligned headers. Set 'Underline' on in 'Font', and start the header text with a row of spaces, tabs or underscores (or even the more unusual of the characters in the character set).

5. Move to the 'Printer model' line, press Tab, and select the most appropriate printer model. (If your printer is not listed, and does not itself emulate any of those shown in the dialog, select 'General'.) Press Enter twice to complete the dialogs.

Note: the 'Printing' chapter has full details, if you need them, about connecting to printers, setting up to print, and spacing after a header paragraph.



The header is not shown on the screen - however, you can see its position on the printed page by using the 'Print preview' option on the 'Special' menu.

You may now wish to save this document as a template with the 'Save as template' option on the 'File' menu. You can then use the template to create documents on headed paper in the future.

Printing an envelope

The way to print an envelope depends upon the type of printer you have. You don't normally need to change the page size to match the envelope. You can usually just print as if to a normal page, although you need to set the margins to make the address appear on the area covered by the envelope. It may take a little practice before you can print envelopes correctly.

1. Select the 'New file' option on the 'File' menu, to make a new file for the envelope.

2. Type the address, or use the 'Bring' option to copy an address from the Database. If you want to, change the appearance of the text, for example change the Font size.
 -  When you are typing the address, use Shift-Enter instead of Enter, at the end of each line. This keeps the whole address as one paragraph and prevents a vertical gap like a blank line appearing after each line of the address when it is printed.
3. Select the 'Print setup' option on the 'Special' menu.
4. **If your printer takes envelopes end-on** (as most laser printers do): you will probably need to change the *orientation* of the page. Move to the 'Page size' line and press Tab to display the 'Page size' dialog. Change the 'Orientation' line to 'Landscape' and press Enter to complete the dialog. The printer will now treat the paper as if the left side of the page is really the top and print accordingly.
 -  If you do find you have to change the page size, set 'Page size' to 'Monarch' or 'DL', if one of these matches your envelope size. Otherwise set it to 'Custom' and type in the dimensions yourself.
5. Move to the 'Margins' line, press Tab, and set the top margin to something like 3"/8cm and the left margin to 4"/10cm or so. The printing should then start on the area covered by the envelope.
6. Check the 'Printer model' line is correctly set; if not, press Tab, and select the most appropriate printer model.
7. Now use the 'Print' option on the 'Special' menu to print the envelope. The address will probably be printed in the wrong place; if this is the case, change the 'Margins' line in the 'Print setup' dialog and then try again.

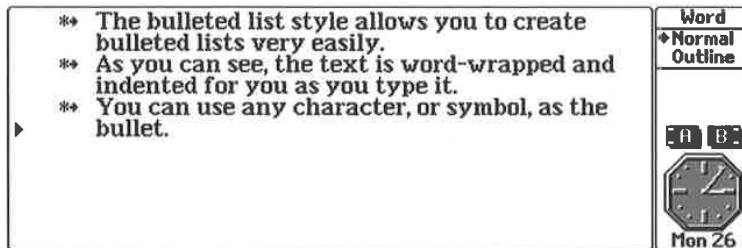
When you have found the settings that will print your envelope correctly, you may wish to save the file, without the address, as a *template* with the 'Save as template' option on the 'File' menu. When you next want to type/print another envelope, you can just create a new file **using this template**. The new file will automatically have the correct page size (and any other settings you've made) for typing a new envelope.

 For further details see the 'Printing' chapter later in this manual.

Entering bulleted lists

There is a predefined style 'Bulleted list' (shortcode BL) for any bulleted list that you want to include in your report or memo.


1. Hold the Control key down while you press BL to turn on the Bulleted list style.
2. Type the character that you want to use as the bullet, for example a *, press the Tab key, and then type the item. Repeat for all the items in the list. The text will be moved over and indented for you as you type:



If you want to, you can change any of the attributes of this paragraph style. For example, you can change the indents and Tabs to move the bullets to the left-hand margin. Select the 'Style gallery' option on the 'Styles' menu and select the Bulleted list style. Move to the 'Indents' line, press Tab to display the 'Set indents' dialog and

change the setting on the "Left" line to 0.25 and the setting on the 'First line' to 0. Then move to the 'Tabs' line, press Tab to display the 'Set tabs' dialog and change the 'Position' line for tab number one to 0.25.

You can also use an emphasis with a bullet character to make it bold, for instance. Highlight the bullet symbol, select 'Emphasis housekeeping' on the 'Styles' menu, select 'Apply' and choose the emphasis that you want to use. You can then use this emphasis on other bullets in the document.

 Most laser printers contain *symbol* character sets, which have a variety of symbols you might want to use as bullets. Consult your printer manual for details. Find which character value represents the symbol you want. You can enter this character by holding down the Control key and typing the three digit number on the keyboard; if this value happens to be an everyday character, you can just type it in directly, of course.

Where appropriate, the printer drivers in the Series 3a try to translate symbols from the Series 3a character set to that of the printer.

Improving document templates

If you make small improvements to the look or layout of a document, you may wish to copy the changes into a particular template, so that new files can, in future, benefit from the changes.

To edit the template directly:

1. Select the 'Open file' option on the 'File' menu, but instead of selecting a file to open, press Control-Tab to display the 'Specify filelist' dialog:
2. Now type the full name of the **template** itself. To do this, type \WDR\ in front of the template name, and .WRT directly after it. For example, for a template called FAX you should enter \WDR\FAX.WRT .
3. Instead of Enter, press Control-Enter.

 Control-Tab and Control-Enter provide short-cuts to using the full *file selector*.


4. Press Enter to complete the 'Open file' dialog.

You can now edit the template directly. Select the 'Exit' option on the 'Special' menu when you have finished to save the changes.

Copying new paragraph styles to the template:

1. Open the **template** file as above.
2. Press the System button to move to the System screen, and move the highlight to the document file containing the styles that you want to copy into the template.
3. Instead of Enter, **press Shift-Enter**. (This opens the new file without exiting the other open file - i.e. the template.)
4. Temporarily apply the various styles to consecutive paragraphs, and use Shift-↑↓ to cover some or all of each paragraph with a highlight.
5. Press the Word button to switch back to the template file.
6. Select the 'Bring text' option on the 'Edit' menu. This inserts in the template a copy of the text you highlighted in the other document, **and also copies over the styles used by this text**.
7. Press Delete to delete the text which was inserted. However, **the styles which were copied over remain as part of the template file**.
8. Select the 'Exit' option from the 'Special' menu to save the template file with the new styles and exit the Word Processor.

9. Press the Word button to return to the document. If you made changes to it in order to assign the styles to consecutive paragraphs, you should use the 'Revert' option on the 'Edit' menu to undo these changes.

 You cannot copy a style in this way if its shortcode is already used for another style in the template. To replace a style by a new one with the same shortcode, first use 'Style housekeeping' on the 'Styles' menu in the template file, and use the 'Delete' option to delete the current version of the style. You can then use 'Bring text' as before.

If you want to keep **both** of the styles in the template, you will need to use the 'Rename' option to give the style in the template a new shortcode. You can then copy over the style from the other document.

(See the chapter on 'Opening files' for more details of using Shift-Enter to open files. See the chapter on 'Moving information with "Bring"' for more details of the 'Bring text' options.)

Standard paragraphs

If you need to include standard paragraphs of information in different documents you can save each standard paragraph as a separate document, then use the 'Merge in' option to add it into your current document:

1. Open a document containing the desired standard text.
2. Highlight the standard paragraph and use the 'Copy text' option on the 'Edit' menu to make a copy of the paragraph on the clipboard.
3. Use the 'New file' option on the 'File' menu to make a new file for the standard text - it's best to give it a name that reflects the text it contains. Use the 'Insert text' option on the 'Edit' menu to paste the standard text into the new file.

You can now insert a copy of your standard text at the cursor position in other documents, like this:

- Position the cursor and select the 'Merge in' option on the 'File' menu. Select the name of the file containing the standard paragraph and press Enter.

Advanced use

Paragraph styles

The Word Processor lets you define different *styles* for the paragraphs in a document. A style determines the way a paragraph looks - which font is used for text, whether it is in bold, whether it is indented from the left or right of the page, and so on. **Once you have created a particular style, you can apply it to any number of paragraphs within a document.**

Predefined styles

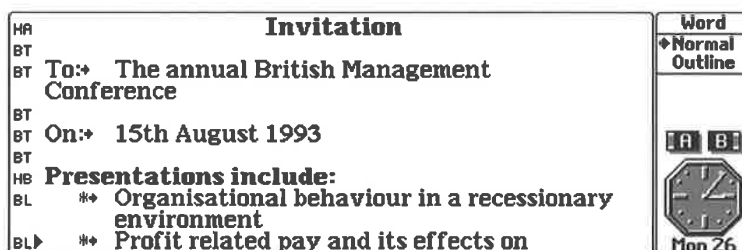
Each style is identified by a two-letter *shortcode*. The Word Processor has four predefined styles for each document you create:

- BT , short for *Body Text* - the style for ordinary paragraphs of text.
- HA, short for *Heading A* - the style for a paragraph which is a major heading, such as the title of a large section of text.
- HB , short for *Heading B* - the style for a paragraph which is a minor heading, perhaps describing a few paragraphs which follow it.
- BL, short for *Bulleted List* - the style for a paragraph which is in a list (and begins with a bullet character plus a tab).

Turning the style bar on

To see which style is being used for each paragraph:

1. Select the 'Set preferences' option from the 'Special' menu to display the 'Set preferences' dialog.
2. Set the 'Show style bar' line to 'On' and press Enter. The shortcode of the style for each paragraph will then be shown on the left of the screen, like this:



Styles and the current paragraph


If you use any of the options on the 'Paragraph' menu, to change the way the current paragraph looks, the Word Processor records the new combination of font, indents, tabs alignment and spacing as a new style and applies it to that paragraph. The first style produced by changing a paragraph in this way is recorded as 'ZA' for both the style name and the shortcode, and the second as 'ZB', and so on. You can change the names and shortcodes of these styles if you wish.

If you only occasionally change the way a paragraph looks, you may wish to continue using the options on the 'Paragraphs' menu, and not worry about how styles are being used for you.

Applying an existing style

You can change the style for the *current paragraph* (the one in which the cursor is positioned), or any highlighted paragraphs by holding down the Control key and typing the two-letter shortcode of the style you want to use. For example, to change the style of a paragraph to the 'Heading A' style, you would hold down Control and press H then A.

Alternatively, you can select the 'Styles housekeeping' option on the 'Styles' menu and choose 'Apply' from its submenu. You may have to use this method if you've forgotten the shortcode of the style you wish to use.

 If a paragraph doesn't appear to change to the right style, check no *emphasis* (bold, italic etc) has been applied separately to the whole paragraph - highlight it, and press Control-NN (for the 'Normal' emphasis).

Managing styles

The styles that you create in the Word Processor are stored with the document file that you were using when you created the styles. They are not stored independently as *stylesheets* as they are in a number of word processors and desktop publishers. So you cannot list all the styles you have ever created in the Word Processor, and select one to use with a new document. However, you can create *template files* which contain styles you wish to re-use. Whenever you then create a new document, you can make it inherit the styles from a given template file. (Template files are described later in this chapter.)


The 'Style gallery' and 'Style housekeeping' options on the 'Styles' menu allow you to manage the styles in a particular document.

The 'Style housekeeping' option has a submenu from which you can define new styles, apply a particular style to one or more paragraphs that you have highlighted, rename a style, delete a style and search forwards and backwards in your document for a particular style.

Reviewing and changing defined styles

To see which styles are defined for the document you are using, select the 'Style gallery' option on the 'Styles' menu.

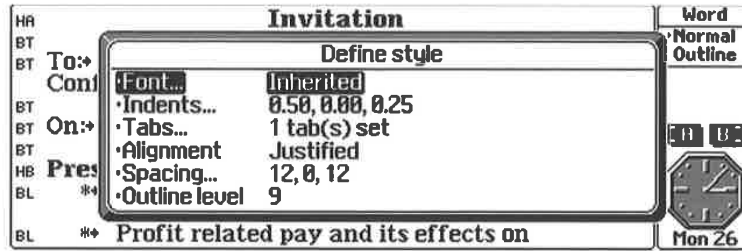
When the highlight is on the top line you can use ←→ to move between the different styles. As you do so, the settings for each style are shown in the rest of the dialog. You can move the highlight down and change any of the settings for any of the styles.

 The 'Style gallery' option doesn't **apply** styles to paragraphs.

Defining new styles

When you create a new style using the 'Styles' menu you can change all the settings that you can change from the 'Paragraphs' menu, and you can also give the style the name you choose.

1. Select the 'Style housekeeping' option on the 'Styles' menu and then the 'Define' option. The 'Define style' dialog is displayed where you can define a new style:



The initial settings in the dialog are those of the style of the paragraph you were editing. So if you want to define a new style which is similar to an existing style, position the cursor on a paragraph which uses the existing style, then select 'Style housekeeping-Define'. Many of the settings in the dialog will then be correct straight away.

2. Make the changes you want to the settings on each line. For dialog lines displaying '...' you need to press Tab to display a further dialog where you can change the setting.

The 'Font', 'Bold', 'Underline' and 'Italic' lines in the 'Font' dialog have the extra setting 'Inherited'. If you use the 'Inherited' setting, the new style will always take that particular setting from the 'Body text' style. If, at a later stage, you then change the 'Body text' style - say, to use a different font - all styles which have 'Font' set to 'Inherited' will change accordingly.

3. Press Enter and the 'Name' dialog is displayed. Type a descriptive name (up to 15 letters) for the new style on the 'Name' line. Type the two-letter shortcode you want to use to identify this style on the 'Shortcode' line. It must be different to any other style shortcode, **and to the shortcodes that can be used to emphasise highlighted areas** - BB for bold, UU for underline etc.
4. Press Enter to complete the dialog, define the new style, and apply it to the current paragraph and any other paragraphs that use this style.

Renaming a style

You can rename any style used in the current document.


1. Select the 'Styles housekeeping' option on the 'Styles' menu, then the 'Rename' option from its submenu.
2. Press ←→ (or the first letter of the shortcode) and select the style you want to rename. Then move the highlight to the 'Name' and 'Shortcode' lines, and change either or both. When you press Enter to complete the dialog, the new names will be used for this style.

Deleting a style

You can delete any particular style, or all unused styles in the current document **except the 'Body text' style** (you can, however, rename the 'Body text' style).

1. Select 'Style housekeeping' on the 'Styles' menu and then 'Delete' from its submenu to display the 'Delete' dialog.
2. Press ←→ (or the first letter of the shortcode) to select a particular style that you wish to delete, then press Delete to delete it, or press Space to delete all unused styles.

A message will be displayed to tell you how many styles were deleted.

 Styles are deleted as soon as you press the Delete or Space key. Pressing Esc to end this dialog will not restore deleted styles. You can only retrieve a deleted style by reverting to a previously saved version of the document, by copying it from another document (see later), or by creating it again from scratch.

If you try to delete a style which is still applied to one or more paragraphs, an 'In use' message will be shown. Before you can delete it, you must find any paragraphs which are using it, and change them to use a different style. You can use 'Find' on the 'Style housekeeping' submenu to Find all the styles that you need to change:

1. Press Esc to quit the 'Delete' dialog.
2. Press Control-Pg Up (Control-Page Up) to move the cursor to the top of the document and select 'Find' from the 'Style housekeeping' submenu.
3. Select the style that you want to find, and press Enter. The next paragraph using that style will be highlighted.
4. Press Control and the shortcode for a different style - for example, Control-B-T for 'Body Text'.
5. Use the 'Find again' option on the 'Search' menu, to skip to each successive occurrence of this style, and change each one. After changing the last one, the next 'Find again' will display a 'Not found' message.

You can now delete the style as above.

Copying styles between documents

Although the Word Processor does not apply stylesheets separately to documents, you can copy a particular paragraph style from one document to another:

1. Open the document that contains the style you want to copy.
2. Apply the style that you want to copy to a paragraph, and highlight some or all of the paragraph. You can highlight an empty paragraph if you like.
3. Press the System button to move to the System screen, and move the highlight to the file into which you wish to copy the style.
4. Instead of pressing Enter, press **Shift-Enter**. (This opens the file without exiting the previously open file. The 'Open files' chapter has more details of using Shift-Enter to open files).
5. Select the 'Bring text' option on the 'Edit' menu. This inserts in your current document a copy of the text you highlighted in the first document, **and also copies over the existing style**. (The 'Moving information with 'Bring' chapter has more details of the 'Bring' options).
6. Press Delete to delete the text which was inserted. However, the styles which were copied over are unaffected.

You can move more than one style at the same time:

1. Apply each of the styles you want to copy to consecutive paragraphs in the document.
2. Highlight all the relevant paragraphs, then use 'Bring text' as described from step 3 above.


A style will not be copied in this way if its shortcode already exists in the new document. If you wish to replace a style by a new one with the same shortcode, first use 'Style housekeeping-Delete', and delete the current version of the style. You can then use 'Bring text' as before.

Managing emphases

As you've seen, you can change the appearance of a highlighted area by holding down the Control key and typing a two-letter shortcode - Control-B-B for bold, Control-I-I for italic, and so on. These are called *emphases*, and you can define your own in a similar way to defining styles for paragraphs.

As with paragraph styles, each document has its own emphases, and they are saved as part of the file.

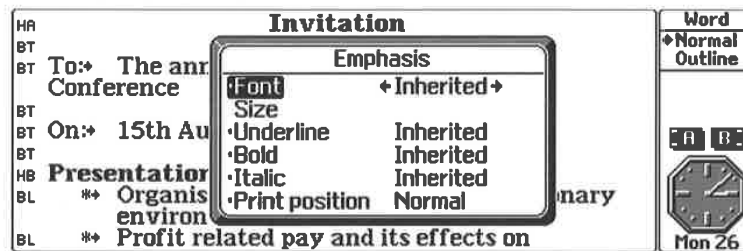
The 'Emphasis housekeeping' option on the 'Styles' menu lets you manage the emphases in a document. **Its submenu contains the same options as the 'Style housekeeping' option, and they act in the same way.**

 It is more common to change or define styles than emphases. You may find that the pre-defined emphases are all you need. Perhaps the most common reason for creating a new emphasis is to use a particular font for a word or phrase.


Defining new emphases

1. Select the 'Emphases housekeeping' option on the 'Styles' menu and then the 'Define' option on the submenu.

The 'Emphasis' dialog is similar to the 'Font' dialog that is shown when defining a new paragraph style:



2. Change the settings on any line with ←→. For example, you might set both 'Bold' and 'Italic' to 'On', or set a particular font for this emphasis.

 When you use 'Emphases housekeeping-Define', the settings initially suggested in the dialog are those of the emphasis at the cursor position. So you will usually see the settings of the 'Normal' emphasis. With neither subscript nor superscript set, and with all other settings set to 'Inherited', text using the 'Normal' emphasis does not differ at all from the style of the paragraph.

The 'Inherited' setting on any line will take the same setting as that in the style of the **paragraph** in which the emphasis occurs. The BB emphasis, for example, has 'Bold' set to 'On', and the other lines set to 'Inherited'. This means that you can use it in any type of paragraph; text with this emphasis will always be bold, but in other respects (font, underline on/off, italic on/off) will look the same as the rest of the paragraph.

You can also set the new emphasis to use superscript or subscript, by changing the setting on the 'Print position' line. Since paragraph styles don't have this setting, you can't set this line to 'Inherited'.

3. When you have made the settings, press Enter, and the 'Name' dialog is shown. Type a descriptive name (up to 15 letters) for the new emphasis on the 'Name' line. Type the two-letter shortcode you want to use to identify it on the 'Shortcode' line. If you were creating a 'bold-italic' emphasis, for example, you might use BI for the

shortcode. It must be different to any other shortcode used by a style or another emphasis.

4. Press Enter and the new emphasis is defined.

If you had highlighted an area, this emphasis is applied to it. If not, this emphasis will be applied to letters you now type. When you have finished, press Control-N-N to return to normal letters. (If you don't want to type anything with this emphasis just yet, move the cursor away instead.)

Using a defined emphasis

You can set an area to use any existing emphasis by highlighting it, then holding down the Control key and typing the two-letter shortcode. You can also set the emphasis for text you are about to type: position the cursor, enter the shortcode (with the Control key), then type the text.

Alternatively, you can select the 'Emphases housekeeping' option and choose 'Apply' from its submenu. You might use this method if you've forgotten the shortcode of the emphasis you wish to use.

Use ←→ to select the emphasis to use, or press Tab to list the emphases in a vertical box. Select the emphasis you wish to use and press Enter to apply it.

Reviewing and changing emphasis settings

To see which emphases are defined for the document you are using, select the 'Emphasis gallery' option on the 'Styles' menu. This is like the 'Style gallery' option.

When the highlight is on the top line you can use ←→ to move between the different emphases. As you do so, the settings for each emphasis are shown in the rest of the dialog. You can move the highlight down and change any of the settings for any of the emphases.

Renaming an emphasis

You can rename an emphasis in the same way as a style:

1. Select the 'Emphasis housekeeping' option and choose 'Rename' from its submenu.
2. Press ←→ (or the first letter of the shortcode) until the emphasis is shown that you want to rename.
3. Move the highlight to the 'Name' and 'Shortcode' lines, and change either or both. When you press Enter, the new names will be used for this emphasis.


Deleting an emphasis

You can delete any particular emphasis, or all unused emphases in a document **except the 'Normal' emphasis** (you can, however, rename the 'Normal' emphasis).

1. Select the 'Emphasis housekeeping' option and choose 'Delete' from its submenu.
2. Press ←→ (or the first letter of the shortcode) until the emphasis you want to delete is shown and press Delete. Or, press Space to delete all the unused emphases.

A message will be displayed to tell you how many emphases were deleted.

As when deleting styles, emphases are deleted as soon as you press Delete or Space - pressing Esc to end this dialog will **not** restore deleted emphases.

 You can only retrieve a deleted emphasis by reverting to a previously saved version of the document, by copying it from another document (see later), or by creating it again from scratch.

If you try to delete an emphasis which is still used in the document, an 'In use' message will be shown. Before you can delete it, you must remove each occurrence of it in the document. To do this:

1. Press Control-Pg Up (Control-Page Up) to move the cursor to the top of the document and then select the 'Emphasis housekeeping' option and choose 'Find' from its submenu.
2. Select the emphasis to find, and press Enter. The next occurrence of that emphasis will be highlighted, and the cursor positioned at its end.
3. You can now press the shortcode for a different emphasis - Control-N-N, perhaps, for normal text.
4. Use the 'Find again' option on the 'Search' menu, to skip to each successive occurrence of this emphasis, and change each one. After changing the last one, the next 'Find again' will display a 'Not found' message.

You can now delete the emphasis as before.

Copying emphases between documents

You can move emphases between documents in the same way that you copy styles:

1. Highlight an area containing the emphasis or emphases to move.
2. Open the second document by highlighting it and pressing Shift-Enter on the System screen.
3. Select the 'Bring text' option from the 'Edit' menu, then press the Delete key. As long as there were no clashes between shortcodes, the emphases will have been copied to the second document.

Keeping track of emphases

When you are using paragraph Styles in your document, you can remind yourself which paragraph styles you have used by displaying the style codes on the left-hand side of the screen. (To do this: select the 'Set preferences' option on the 'Special' menu and set the 'Show style bar' line in the dialog to 'Yes'.) There is no equivalent option that shows all the emphases used in a document. To keep track of the emphases you have used, you have to use the 'Find' option to search for them.

To find each emphasis in your document:

1. Use the 'Find' option on the 'Emphasis housekeeping' submenu. This will allow you to search for a particular emphasis.
2. To skip to the next emphasis of **any** kind set the 'Find' line to 'All'. To find a particular emphasis select its name on the 'Find' line. Use 'Find again' on the 'Search' menu to skip to each successive emphasis.

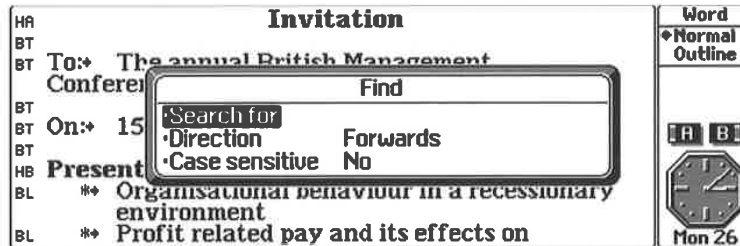
Advanced editing

'Find' and 'Find again'

You can use the 'Find' option to locate a particular piece of text in the current document. You can then use the 'Find again' option to locate further occurrences of that piece of text, without having to enter the details of the text in any further dialog.

Using the 'Find' option:

1. Select the 'Find text' option on the 'Search' menu to display the 'Find' dialog:



2. Type the text to find on the 'Search for' line (maximum 20 characters).
3. Specify on the 'Direction' line whether to search forwards or backwards from the cursor position.
4. Set the 'Case sensitive' line to 'Yes' if you would like to make the search case sensitive. If not, leave it set to 'No'.

For example, if you want to find API in capital letters, and do not want the search to stop on words with a lower-case api, such as capital, set 'Case sensitive' to 'Yes'.

It is more common to leave this setting as 'No', unless you know how the word appears in the document or if you expect the search to stop a number of times at incorrect places.

5. Press Enter to complete the dialog and the search is performed. The found text will be highlighted.

Each subsequent time you use 'Find text', the same text is suggested in the 'Find' dialog. However, you are more likely to follow 'Find text' by using 'Find again', described below.

Using 'Find again':

- Select the 'Find again' option on the 'Search' menu to perform another search, exactly the same as the last search you performed, from the current cursor position.

If you have just used 'Find' on either the 'Styles housekeeping' or 'Emphasis housekeeping' submenu, 'Find again' will perform another search of the same type - finding the next matching style or emphasis.

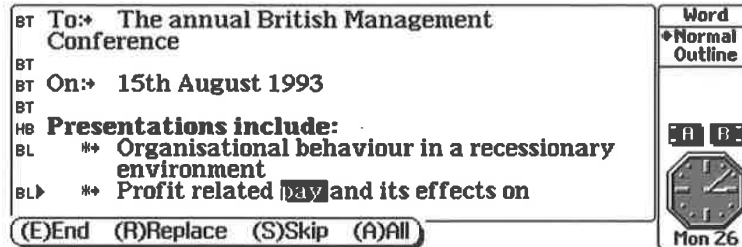
'Replace'

You can use the 'Replace' option to find and replace any number of occurrences of a particular piece of text in your document.

1. Before using the 'Replace' option it may be a good idea to use the 'Save' option on the 'File' menu so that you can revert to this copy of the document if you accidentally replace text you didn't mean to change.

2. Choose the 'Replace' option on the 'Search' menu to show the 'Replace' dialog. It is very similar to the 'Find' dialog.
3. Type the text that you want to find on the 'Search for' line, and the text that you want to replace it with on the 'Replace with' line.
4. Choose the 'Direction' and whether the search should be 'Case sensitive' and press Enter.

The Word Processor will search for the text from the cursor position, in the direction you specified. If it finds a match for the text, it highlights it, and displays a special dialog in which you can choose from four options:



- Press E (or Esc) to leave 'Replace' and to return to normal editing without replacing any of the text.
- Press R to replace the highlighted text, then search in the same direction for the next occurrence of the text.
- Press S to leave the highlighted text as it is, but then to search in the same direction for the next occurrence.
- Press A to replace this **and any other occurrences found in the same direction**, without asking for any further confirmation. **Be very careful with this option.** It's easy for 'Replace' to find an unexpected match - in the middle of a long word, perhaps - for the text you typed.

You can interrupt a 'Replace All' by pressing Esc.

Each subsequent time you use 'Replace', the same text is suggested in the dialog.

- ☞ You can use 'Replace' to delete any or all occurrences of a particular piece of text - leave the 'Replace with' line of the dialog blank. Each "replacement" that occurs will remove the matched text, but then insert no text in its place.

The 'Bring text' option

The 'Bring text' option on the 'Edit' menu brings in a copy of text you have highlighted in another application, such as the Agenda or Database. There is a separate chapter later in this manual for further details of moving information with the 'Bring text' option.


Merging documents


You can use the 'Merge in' option to add a copy of another document into the current document, **at the cursor position**. You might, for example, save an often-used paragraph as a separate document, and merge it into any document which needed it.

- Select the 'Merge in' option on the 'File' menu to display the 'Merge file' dialog. Select the name of the file that you want to add to the end of the current file and press Enter.

Any *styles* and *emphases* in the document you merge in are also merged with those of your current document.

If a *shortcode* already exists in your current document, it overrides any shortcode of the same name in the document being merged. If this happens, you may find that paragraphs from the file being merged change their appearance, as different styles are applied to them. To avoid this, open the document you wish to merge, and rename the styles concerned.

 You should ensure there are no clashes between emphasis shortcodes in one document and style shortcodes in the other. If you merge in a plain text file, as opposed to an ordinary Word Processor document, no clashes of style and/or emphasis names can occur.

 Your document is automatically saved before the Merge begins. If you merge the wrong thing, or in the wrong place, select the 'Revert' option on the 'File' menu to "un-do" the Merge.


Spellchecker and Thesaurus

If you add on Spellchecker and Thesaurus software, two new options will appear in the 'Word' menu, to give access to these features from inside the Word Processor. The Spellchecker and Thesaurus software comes with its own documentation.

Outlining


If you type long documents and use headings to break the text into different sections, you may find it useful to view an *outline* of the document so that you can see the structure of the document more easily. (An *outline* is a summary that shows only the headings in a document) The Word processor allows you to switch between a normal view and an outline view of your document. The appearance of the outline view of your document is dependent upon the paragraph styles you have used.

When you are typing your document you use paragraph styles to differentiate paragraphs. Each paragraph style in the Word Processor has an *outline level*. The outline level determines the ranking of the paragraph style in terms of the document outline, i.e. whether the paragraph is a major heading, minor heading, sub-heading, and so on. The Word Processor allows you to set nine outline levels - 1 is the highest level and 9 the lowest. The pre-defined paragraph style 'Body text' initially has level 9, and the 'Heading A' style has level 1.

 Outlining only makes sense when you are using headings. If all of the paragraphs in your document use the 'Body text' style, there is no outline to show, and when you try to switch to the outline you will see the message "Nothing to show in outline".

Setting paragraph outline levels

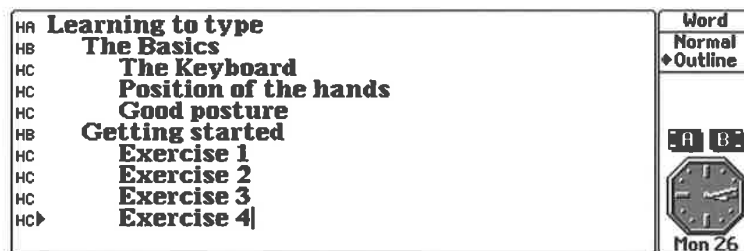
- You can set the outline level for a new paragraph style on the 'Outline level' line in the 'Define style' dialog.
- You can set the outline level for an existing paragraph style with the 'Style gallery' option on the 'Styles' menu.

 If you just want to change the outline level of one particular paragraph, leaving the others of the same style unchanged, you have to create a new paragraph style for the paragraph. You can then set an outline level for this new style.

Turning the outline on

Press the **◆** key to switch to the outline view. Press it again to return to the normal view. The outline view is initially set to display paragraphs whose styles have an outline level between 1 and 8 - ie any styles except those with an outline level of 9.

You can change the display of the outline view by changing the paragraph outline levels that are included. For example, the outline view below has been set to show paragraphs with outline levels between 1 and 3:



Here, the major headings have style HA (outline level 1). Further sub-headings have outline levels of 2 (HB) or 3 (a new style, HC). Apart from the temporary change of indentation, the paragraphs are shown with their current settings, such as the font settings.

- To change the outline levels shown, select the 'Set outline level' option on the 'Word' menu.
- Press the **◆** key to switch to the outline view. Only paragraphs whose styles have outline levels less than or equal to the outline level you set will be shown.

While outlining, you can only move the cursor around the outline. As soon as you make any change to the document, the Word Processor stops outlining and returns to the normal view.

While outlining, you can use the 'Expand outline' and 'Collapse outline' options on the 'Word' menu to increase/decrease the number of levels shown in the outline by 1.

Using a highlight while outlining

If you highlight an area while outlining, and the highlight extends from one paragraph to another, it **includes** any hidden paragraphs of a lower outline level which are between the two paragraphs shown. If you delete ('Cut') or copy this highlighted area, the Word Processor comes out of Outline, and you can see that the whole area has been cut or copied to the clipboard.

Printing document summaries

Outlining also allows you to print document summaries. If an outline is shown, the 'Print' option will print the outline, not the whole document.

Template files

Template files can be used to load styles, settings and text into any new file that is created with the 'New file' option. If you do not choose to use a template file, new files are given the standard set of styles and settings. Any document can be saved as a template file.

You might use templates for a variety of reasons:

- To save an empty document which has the styles and emphases that you wish to use for new files.
- To save all of your favourite settings, such as those in 'Set preferences' and 'Print setup' to use with new files.
- To save the settings, styles and emphases that you use for each of the different documents that you write - letters, memos, and so on.
- To save the styles, emphases, settings and text that you want to use for a particular type of document. The template file will even save the cursor position. For example, you might set a template file for standard letters.


Templates are not the same as stylesheets on other word processors, as you can save settings and text as well as paragraph styles. (You cannot apply templates to existing files, though.)

You can change the settings and/or styles for all new files, by creating a *default template* - described later in this chapter.


Creating a template file

You can create as many templates as you need, for different types of files. If you use more than one printer you may even have different versions of your favourite templates, each set for the appropriate printer model, and each tailored to the fonts it provides.

1. Open a file which has the styles, emphases and text that you want to save in the template file.
2. Use 'Save as' to create a new intermediate copy of the file. Set the 'Use new file' line to 'Yes'.

 If you're careful, you could, of course, do all of this without making a temporary file: just remove the unwanted text from a real document, use 'Save as template', then use 'Revert'. However, if you were to exit the document for any reason before you used 'Revert', you would lose your original file.

3. Check that all of the settings - as in 'Set preferences', 'Printer setup' and so on - are as you want them.
4. Delete all of the unwanted text in the file. If you want to delete it all, press Control-Page Up, Control-Shift-Page Down, then press the Delete key.
5. Select the 'Save as Template' option on the 'File' menu, and type a name for the template file on the 'File name' line (you can use a maximum of 8 characters for the name and it must start with a letter). Press Enter to create the template file.

 The Series 3a adds the *file extension* .wrt onto template filenames. You don't need to enter this yourself, though.

6. You can now use 'Exit', then delete the intermediate file.

Using template files

To use one of the templates you have created, when creating a new document:


1. Select the 'New file' option and set the 'Use template' line in the 'Create new file' dialog to 'Yes'.
2. Select the name of the template file, that you wish to use, from the 'Template name' line and press Enter.

Creating a default template file

If you use 'Save as template' and give default as the filename to use, this becomes the template to use whenever no other template is specified. For example, it will **always** be used when opening a document from the System screen, as there is no way to specify any other template.

The default template is kept on the default disk. This is initially 'Internal', but you can set it with the 'Default disk' option in the System screen. **You may wish to create a default template, with the settings, styles and emphases that you wish to use in most of (or all) your new documents.**

Important: if you use 'Create new list' in the System screen, and create a new file list for the Word Processor, the name of the default template for this list will be the same as the name you gave the list itself. (If you save the list as faxes, say, then you can create a template called faxes and it will be the default for all new files in this list.)

 If you forget the original name you gave to a list use the 'About application' option in the System screen. The top line of the resulting dialog tells you the name.

Deleting template files

You can delete any of the template files you have used with the Word Processor if you no longer wish to use them, and wish to free up space on your disks.

Template files are stored in a different place to document files. To delete one, find it using the *file selector*.

1. Move to the System screen and place the highlight under the Word icon.
2. Choose the 'Delete file' option from the 'File' menu. The 'Delete file' dialog will then be displayed, as if you were about to delete a document file.
3. Press the Tab key to display the 'File selector'. You will see your document files listed with their full filenames (that is, with a *.wrd file extension* appended to each name.)
4. To list the template files instead, move the highlight up to the top of the list, over the \ symbol, and press Enter. Then move the highlight over the \WDR\ line and press Enter. You will now see a list of files, including template files (which have a *.wrt file extension*.) Choose the name of the one that you wish to delete and press Enter.
5. The 'Delete file' dialog will be redisplayed. The name of the template file is shown. Press Enter again to delete it.

File extensions and the file selector are explained in greater detail in the 'Files and disks' chapter.

Other file formats

Plain text files

Word Processor files contain text that you type in, plus coded information about all of the styles and emphases. This coded information is put into the file by the Word Processor.

If you want to transfer documents to and from other computers, you may wish to use files which contain only the text.

Saving a plain text file

1. To save a copy of the document as plain text, first select the 'Set preferences' option from the 'Special' menu. There are two settings for 'Text file type':
 - 'Paragraph': each paragraph in the document will be saved as a single line of text, with no blank lines between paragraphs. Most Word Processors will understand this format.
 - 'Line': each paragraph will be word-wrapped to a width of less than 80 characters, and a blank line will separate paragraphs. You could then copy the file direct to a printer, or type it on a PC. Text editors, and many Word Processors, understand this format.
2. Select the 'Save as' option on the 'File' menu. Type a different name for the new file on the 'File Name:' line. Set the 'File type' line to 'Text' and the file will be saved as a plain text file.


Opening a plain text file

The Word Processor can open any plain text file.

1. Select 'Set preferences', as when saving a plain text file, and set 'Text file type' to the setting - 'Paragraph' or 'Line' - which corresponds to the file you wish to open.
2. Select 'Open file', and type the name of the file to use. The Word Processor recognises that the file does not have the Word Processor's own format, and so treats it as plain text. The file will inherit the same styles and emphases as the file you were previously editing.

Important: when you next use the 'Save' option, or you switch to a different file, the current document will be saved in Word Processor format, including style and emphasis information. The filename will be changed to use the standard `.wrd` file extension.


If you later want to send a file back to another computer, you can use 'Save as' to save it as a text file, as described before.

 Full filenames, including file extensions, are shown when you press Tab in the System screen. See the 'Files and disks' chapter for more details.

Plain text editing

If you do need to keep documents in plain text format **all** the time, you can use the Word Processor as a plain text editor. (Don't worry if you don't understand some of the terms mentioned in this procedure.)

1. Move the highlight in the System screen to the Word icon. Select the 'Create new list' option on the 'Special' menu.
2. On the 'Directory for files' line, enter a name of up to 8 letters for the *directory* to keep text files in. For example, enter `text`.


 If you know about directories, note that this will be a **subdirectory** of `\WRD`. For a directory off the root directory, you might for example type `\text`. There is more information about directories in the 'Files and disks' chapter later on in this manual.

3. On the 'Extension for files' line you can enter a different *file extension* for your text files, if you wish. It should be from one to three characters; `txt` or `doc` are commonly used for text files.
4. Make sure the 'Type' line is set to 'Text editor'.
5. On the 'Save list as: Name' line, enter a name to save this information as - `textedit`, perhaps.
6. Press Enter. A dialog is shown, listing your choices; press Enter again to confirm them.

A new Word icon is shown in the System screen. All files you create with it will be plain text files. It does not have the menu options for features (eg styles, emphases and passwords) which require non-textual information to be saved in files. There are a few other differences:

- There is an 'Indentation' option, for setting the tab width and turning auto-indentation on and off.
- There is no outlining facility.
- The 'New file' option will only ever use a default template (stored as `default.$`). When you select 'Save as template', you are given the option of replacing this template. **Do not try to swap templates between the Word Processor and the Text editor.**
- 'Set preferences' has settings for bold/normal and mono/proportional text.

 Use the Program editor icon in the System screen if you want to edit OPL programs,

 The Text editor, like the Program editor, does not save the status window or "Zoom" settings to file, as its files only contain the plain text you type.

Editing Rich Text Format (RTF) files

A small software add-on to the Word Processor allows it to save and load Rich Text Format (RTF) files, compatible with Microsoft Word and other word processors. The Psion serial 3 Link is supplied with this add-on. The serial 3 Link allows you to transfer RTF files, like other files, to and from a desktop computer. Documentation for the RTF software is on the serial 3 Link disk.

8

The Spreadsheet

The Spreadsheet allows you to keep all sorts of inter-related numerical information, and to perform calculations based on it.

- **This chapter begins with two pages of information *experienced spreadsheet users* may need to use the Series 3a Spreadsheet.**
- **After this comes an introduction to spreadsheets and their uses, guiding *new users* through the everyday features.**
- **The rest of the chapter contains a full reference for the various functions and features of the Spreadsheet.**

Like the Word Processor, the Spreadsheet offers password protection and encryption, to keep confidential information secure. Passwords are discussed in the "Security and backups" chapter.

Press the Sheet button to use the Spreadsheet.

Quick start for experienced spreadsheet users

The Spreadsheet works in a very similar way to versions 1A and 2 of Lotus. If you're already familiar with other spreadsheets, you won't need most of the information in this chapter; experiment with the Spreadsheet, and use this manual when in doubt.

The main points to note are:

- Use = (not +) to start a formula.
- No @ symbol is needed on function names.
- Range references use a colon; A1 . . C3 in Lotus is A1 : C3 in the Spreadsheet.
- ** is the power operator; Lotus uses ^ . (The precedence of all the operators is the same.)


Other differences:

- To hide columns, set their column width to zero.
- Numbers in 'Bargraph' format are shown as a graphical bar.
- The logical operators AND and OR do not need # symbols around them as they do in Lotus - for example, the formula A1=1#AND#A2=2 in Lotus would be =A1=1 AND A2=2 in the Spreadsheet.
- The Spreadsheet has a % operator.
- The @ function is called AT in the Spreadsheet.



File types and file transfer


Files from the Series 3a Spreadsheet can be loaded into other spreadsheet packages, such as Excel or Lotus 1-2-3, and vice versa.

You should be familiar with the basic use of 3 Link before you transfer worksheet files. You don't have to **transfer** files at all, though; while linked to a PC or Macintosh you can save and open worksheet files **directly** on the other computer, without copying the file to the Series 3a.

 When linked, the PC/Macintosh drives become available to you as the REM: : *filng system*. See the 3 Link User Guide for full details.

The file types which the Spreadsheet supports have these file extensions:

- **SPR** - the Series 3 and Series 3a Spreadsheet format. (You can transfer SPR files to and from a Series 3, as long as you do not use the 'Password' option in the Series 3a Spreadsheet.)
- **WKS** or **WK1** - a standard format which most spreadsheet programs support, in which virtually all the information in your worksheet is saved.
 -  SPR files are smaller than WKS and WK1 files, so save files as SPR until you need to export them, and only then save them as WKS or WK1.
 -  Most accented characters, and symbols used by certain languages (such as ¿ , « and ») should be converted correctly. Some other symbols with values above 127 in the character set cannot be converted.
- **DIF** - use only when your other spreadsheet program supports DIF but neither WKS nor WK1. The DIF format only transfers numbers, text and evaluated results. All other information is lost.

 The SPR file format on the Series 3a is a superset of that used by the Psion MC Spreadsheet. You can transfer files between the computers in both directions, but with one proviso: **if you move a Series 3a worksheet to the MC and save it on the MC, any information not used by the MC Spreadsheet - graphs, for example - will be lost.**

Opening a different type of worksheet

You can use 'Open file' directly on files with the WKS, WK1 and DIF formats. When you press Enter to complete the 'Open file' dialog, a 'Convert to SPR format' dialog is shown. This is to remind you that **when the file is next saved it will be in the Spreadsheet's own format, with a .SPR extension.** This dialog allows you to set the filename to use when this happens.


Exporting to a different file type


To 'export' to another spreadsheet program, use 'Save as', and set the 'File type' to one suitable for your other spreadsheet program. The file extension will be set to match the file type.

Lotus 1-2-3 WKS/WK1 compatibility

All cell information is converted - i.e. format and alignment information, column widths, formulae, values, text, range names and protection. Note:

- The Spreadsheet cannot understand macros from Lotus. The cells containing the instructions making up the macro will be left intact - you just cannot run the macro in the Spreadsheet. If you subsequently transfer the file back to Lotus, the macro will run as it did originally.
- The differences in notation listed earlier - such as using = to start formulae - are handled **automatically**.

 Day numbers are the same as in Lotus except before 28/2/1900, because Lotus treats 1900 as a leap year.

 The Spreadsheet displays only the D4 and D8 date/time formats. If you import a Lotus file you may get others returned in functions such as CELL.


The graph features closely match those of Lotus 1-2-3. You can even create .PIC files, which you can print with the Lotus PrintGraph utility. However, a few graph features change when you transfer files:

- A few graph settings are lost when you convert to Lotus format: whether to use 3D; whether to show titles and axis titles; fixed axis limits; whether to show values on pie charts; and the name of the current graph, which changes to the next available name like Graph1, Graph2 etc. Also, Lotus can only display one cell reference in any piece of text on a graph, while the Series 3a Spreadsheet can use many - e.g. \b1....\c1.
- If you do not define a graph in your Lotus worksheet, Lotus saves it with a current graph showing no information. This is what you will see initially if you open the file on the Series 3a.
- The Series 3a Spreadsheet supports neither *colour codes* nor *exploding codes* when displaying pie charts.


What are spreadsheets and worksheets?

A spreadsheet allows you to keep all sorts of numerical information, and to perform calculations based on it. It consists of a large area, or *grid*, in which you can enter numbers and text, and work out sums:

B6	479						Holiday
	A	B	C	D	E	F	Normal Graph
1	Flight	120	Salary	850			
2	Hotel	85	Spent	779			
3	Car	95	LEFT:	71			
4	Total	300					
5							
6	Other	479					
7							
8							
9							



- You can manipulate the *data* (the information you enter) again and again - for example, you might sort databases of sales figures into various orders, keep running totals and do statistical calculations.
- You can do calculations quickly with the help of functions, like on a calculator. Unlike a calculator, though, you can see all the elements of your calculation, enter descriptions beside the numbers, and work out many related results at once. **And** you can quickly try out the same calculations with different numbers.

 The Spreadsheet loads the information from a file into memory. The information in memory is the version you edit. Changes are not saved to file until you exit the Spreadsheet with the 'Exit' option (or by using the Delete key in the System screen).

Spreadsheet files


Just as the Word Processor lets you keep many separate documents, the Spreadsheet lets you keep many separate *worksheets*. When you first use the Spreadsheet you will be using a worksheet file called *sheet*. If you're new to Spreadsheets, use this to experiment with.

You can create, open, copy and delete worksheet files in the same ways as Word Processor documents.

For example, there are two ways to create a new file:

- In the Spreadsheet: use the 'New file' option on the 'File' menu.
- On the System screen: move the highlight to below the Sheet icon and select the System screen's 'New file' option..

In the 'Create new file' dialog shown, type a name for the new file - for example, budget. The name can be from one to eight letters and numbers, and must begin with a letter.

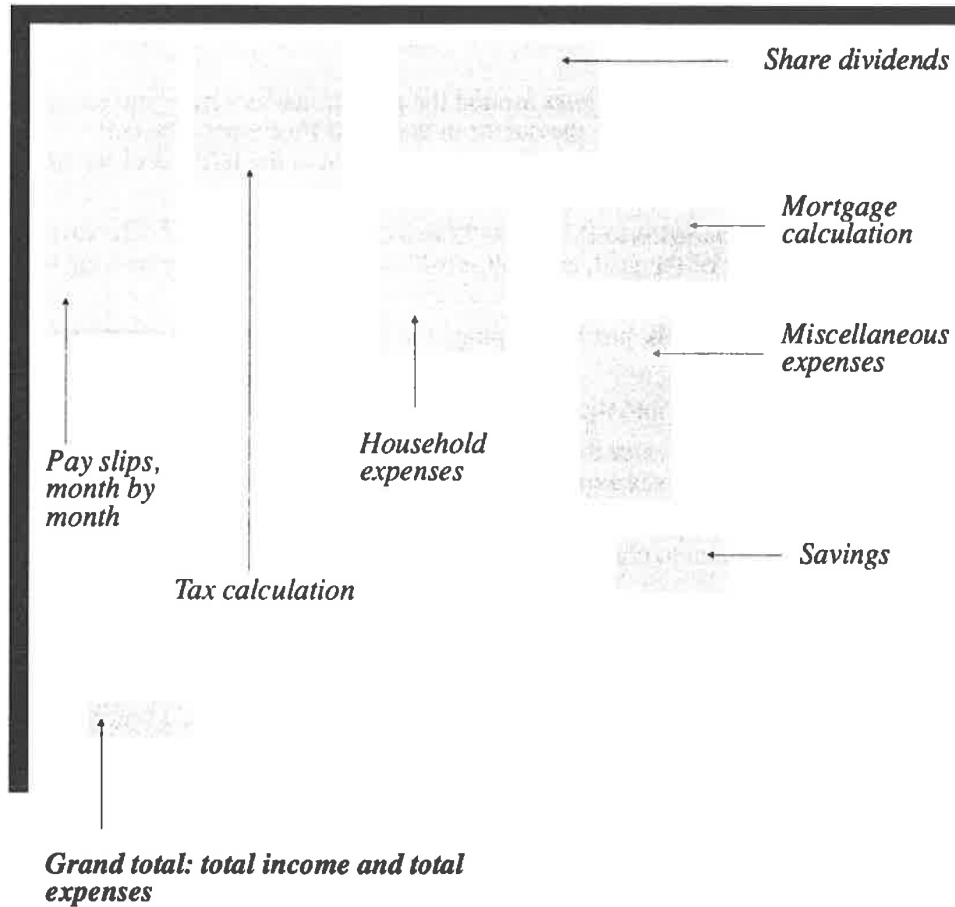
 It is usually better to keep worksheets on the 'Internal' disk or a RAM SSD. A Flash SSD will slowly fill up as you keep saving worksheets to disk.

Press Enter to complete the 'Create new file' dialog. The Spreadsheet creates the new file and you can start entering information.

As with any important information, you should back up your worksheet files regularly - either to an SSD which you keep separate from your Series 3a, or via 3 Link to another computer.

Big worksheets

A worksheet can cover an area much larger than the Series 3a screen. You can have different calculations in different areas of the worksheet. For example, you could have a worksheet for all aspects of your personal finance:



You can give *range names* to each area, to identify them more easily, and/or add explanatory text.

The results of one calculation (say, the 'Miscellaneous expenses' calculation) can be used in other calculations (say, the 'Grand total' calculation).

This manual uses simple example worksheets - your own may well be larger, but they will use the same principles.

Moving around and entering data

The *grid* is the working area of the Spreadsheet - where you enter your data. Each *cell* in the grid can contain one piece of information. Each cell is identified by its *cell reference*, made from its column (A , B , C ...) and row (1 , 2 , 3 ...). The top left cell, for example, is called A1 .

You can use ←↑↓→ to move a *cell pointer* around the grid. It marks where you are on the grid - the *current cell* - rather like the cursor in the Word Processor. The cell reference of the current cell - A1, B2 and so on - is shown at the left end of the *input line* at the top of the screen.

There are 256 columns, labelled A to IV, and 8192 rows, labelled 1 to 8192. The display can only show a small part of the grid, and will scroll as required if you try moving the cell pointer off the screen.

To enter data into the current cell, just start typing. The data appears in the input line. When you've typed it:

- Press Enter to enter the data into the current cell.
- Alternatively, use ←↑↓→ to enter the data and then move the cell pointer in the corresponding direction. This is a quick way to enter a series of cells.

As in many other Series 3a applications you can use the 'Zoom in' and 'Zoom out' options on the 'Special' menu to change the display size of the data you enter.

Types of data - text, number, formula

Each cell can contain only one piece of data. It will be one of three types, **depending on the first character you enter:**

- If the first character is one of these: 0123456789 (. + - then the data is treated as a *number*.
 - ☞ You can also enter calculations, which are immediately calculated and entered as numbers - for example, $78 * 36$ would enter into a cell as 2808 .
- If the first character is = the data is treated as a *formula*. Formulae are used to do calculations.
- For any other first character, the data is treated as *text*. (Separate items of text are sometimes called *text strings*.)

Cell width

If a text string is too long for its cell the text is **displayed** on top of adjacent cells to the right, as long as they are empty. (Text strings may be up to 236 characters long.)

If a number in the selected format is too large for its cell, the cell is displayed filled with # symbols.

'Illegal character' message

If you see an 'Illegal character' message when you try to enter data remember that the **first** character you type controls what type of data you are entering. For example, 30b

is illegal, as the initial 3 sets the type of data to numbers, so letters, like b, aren't allowed.

To force the Spreadsheet to accept data as text, type the ' symbol first. You might, for example, enter a phone number like this: '081-999-0102. If you want to enter a text string which itself begins with a ', enter ' twice.


The ' doesn't appear in the cell - it just instructs the Spreadsheet to treat the characters which follow as text. You can use the same trick if you want to enter text beginning with = ; if you don't use a ' symbol, the = character tells the Spreadsheet to treat what you type as a formula.

There are three other *prefixes* which behave in this way: ^ " and \ . They are covered later.

Editing data in cells

You can change data entered into the grid as much as you like, until it's as you want it.

- To **edit as you type**: you can press the Delete key to delete to the left of the cursor. **Remember that the arrow keys enter the data, then make the cell pointer move.** If you press Psion←('Home') or Psion→('End') you can use the full range of Series 3a editing keys, including ←↑↓→. When you've finished editing, press Enter to enter the data in the current cell.

 If the Spreadsheet displays an error message such as 'Illegal character', because you have tried to enter something it doesn't understand, it will **automatically** let you edit the whole input line.

- To **re-edit** the current cell: press Enter. Here again you can use the full range of editing keys, including ←↑↓→.
- To **overwrite** the current cell: just type the new entry.
- To **clear** the current cell: press the Delete key.

Formulae

All calculations in the Spreadsheet are done through formulae. Formulae always start with an = character. You enter formulae into cells in the same way as text or numbers, but **the cell shows the calculated result of the formula it contains, not the formula itself.**

Working out what a formula should be

To work out the formula you need, use the cell references - A1, B2 and so on - of the cells you wish to refer to, with the appropriate mathematical *operators* - characters which represent arithmetic operations, like +, -, * (multiply) / (divide) and so on. For example, a formula to add whatever is in cells A1 and B2 would be =A1+B2 .

When you enter a formula into a cell it is evaluated - using the current values of the cells it references - and the **result** is displayed in the cell. However, it is the formula which is stored. The formula will be displayed in the input line whenever you move the cell pointer back to this cell.

Here is a simple example worksheet that contains a list of bills, and calculates money free after deducting these bills from a salary:

D2		=C2-B2-B3-B4-B5-B6				Bills	
A	B	C	D	E	F	◆Normal Graph	
1	BILLS	SALARY	FREE			A B	
2	Electric	30	850	160		Mon 26	
3	Gas	40					
4	Food	100					
5	Mortgage	420					
6	Car	100					
7							
8							
9							


If you want to, you can enter the data and follow the example through. Enter the text in column A and the numbers in column B and C by moving to the cell, typing the number (eg 30 in cell B2) or the text (eg Gas in A3) and pressing Enter, or one of the arrow keys.

You now want to enter a formula to calculate the amount of money you have left over. This is "SALARY minus all the BILLS"-that is, C2-B2-B3-B4-B5-B6 . To enter this:

1. Move the cell pointer to an empty cell - here, use D2.
2. Type =C2-B2-B3-B4-B5-B6 (note the = to start the formula).

When you press Enter, the formula is evaluated and the result, 160 , appears in cell D2.

Note that the formula is still shown in the input line.

 There is often more than one way to enter a formula. This example could also have been entered as =C2-(B2+B3+B4+B5+B6) . Brackets, as in the Calculator, group together part of a calculation.

'What if?'- trying different values

Once a formula is set up, you can change the values in the cells to which it refers and see the change in the result. For example, move to B3 (the gas bill) and change 40 to 50 . When you press Enter, the result in D2 changes to match.

Breaking calculations into sections

You might want to break a bill down into its constituent parts - in this example, fuel, repair and loan:

B6		=D6+D7+D8				Bills	
A	B	C	D	E	F	◆Normal Graph	
1	BILLS	SALARY	FREE			A B	
2	Electric	30	850	160		Mon 26	
3	Gas	40					
4	Food	100					
5	Mortgage	420					
6	Car	100	Fuel	50			
7			Repair	20			
8			Loan	30			
9							

These can then be summed to give the value for cell B6, the car bill, which is part of the main calculation.

To do this you would enter the formula =D6+D7+D8 in B6. in other words: **total car bill=fuel+repair+loan**. The result (100) returned by this formula is then used in the calculation in cell D2.

Especially with complex calculations, it is best to break a calculation down into its constituent parts. You can have as many levels of formulae as you like in a worksheet. You can make a change at any level and the effect will 'ripple through' to the top.

Cell ranges

You can highlight a *range* of cells in the Spreadsheet, in the same way that you highlight text in the Word Processor. Cell ranges have many uses:

- You can use them to change the display of a group of cells, or copy data into them - it is easier than doing it cell by cell.
- You can use them for calculations that work on sets of numbers - for example, averaging a set of figures.

Highlighting a range

Move to a cell in one of the corners of the range you wish to highlight. Then **hold the Shift key down and press any arrow key** to extend the range in that direction. The screen will scroll if you reach the edge of the screen, so that you can keep highlighting cells.

To remove the highlight on a range of cells, press Esc, or use the arrow keys to move the cell pointer outside the highlighted range.

You can also use Control-Space to highlight the whole of the current row, and Control-Tab to highlight the whole of the current column.

Range references

Just as each cell has its own cell reference, any range you highlight has its own *range reference*, made from the cell references of its top left and bottom right cells. If a range extends from A2 (top left) to C6 (bottom right), its range reference is A2 : C6 .

Choosing cells and ranges

If, while you're typing something in on the input line, you want to type the reference of a cell or range in the input line, you can instead **select** it. like this:

1. **Press Shift-Space.** A new icon appears in the top right of the screen, and the reference of the current cell is inserted, highlighted, in the input line.

The arrow keys now move the cell pointer, and as they do so, the highlight in the input line changes to reflect the current cell.


2. Move the cell pointer to the cell you want. **For a range reference, highlight the range you are interested in.**
3. Press Enter, and the cell or range reference appears on the input line.

Entering a range reference in this way is called *range painting*. It is slower than typing the reference, but it may help avoid typing errors.

Functions in formulae

The Spreadsheet has a set of *functions* which you can use in formulae, in a similar way to OPL functions in the Calculator. For example, the formula =COS (A4) uses the cos function. The functions are listed later in this chapter.

Functions can save you a lot of work. In the earlier example worksheet, you could use the SUM function, which adds up the contents of the cells in a specified range, to calculate the result in D2. In cell D2, instead of typing =C2-B2-B3-84-B5-B6 or =C2-(B2+B3+B4+B5+B6) you would just type =C2-SUM(B2:B6) .

 If you want to enter a one-off calculation (as opposed to a formula) which starts with a function name, use a + symbol, e.g. +COS(pi/4) .

More ways to move around

You don't have to learn the keypresses mentioned here, but you may wish to try some of them out.

If you have a highlighted range, you'll find that Home/End, Tab/Shift-Tab, and Control-Enter/Shift-Enter keep the cell pointer within the highlighted range; if you then go outside the range, the highlight is removed.

Note: the *extent* is the area which encompasses all the cells currently in use.


- Home and End (Psion-← and Psion-→) go to the left/right edge of the *extent*, or of the highlighted range if there is one.
Control with Home/End goes to the top left/bottom right of the extent, or of the highlighted range if there is one.
- Tab and Shift-Tab move one cell right or left respectively. If there is a highlighted range, they "wrap around" to the next row when they reach the edge.
Shift-Tab in cell A1 wraps round to the bottom right corner of the grid (cell IV8192). This area is sometimes used to enter data which needs to be accessible but out of the way of the main work area.
- Control-Enter steps down the first column, then down the second, and so on. When it reaches the end of the range, it returns to the beginning.
Shift-Enter works in a similar way, moving up and left.
- Use Pg Up and Pg Dn (Psion-↑ and Psion-↓) to move the cell pointer up and down the grid a screenful at a time. To move it by one screenful horizontally, use Control-← and Control-→.

Using 'Jump to'

You can use 'Jump to' to move to a particular cell, or one corner of the current extent (or highlighted range).

The top line of the 'Jump to' dialog lets you choose between jumping to a specific cell, or one corner of the current extent (or highlighted range). Leave it set to 'Range/cell', and move to the line below. Type in the cell reference you want, and press Enter.

If you type a range reference, the whole range will be highlighted, and the cell pointer will move to the top left cell in this range.

 Remember that, as long as you have not highlighted a range, the quickest way to go to A1 is to press Control-Home (Control-Home-←).

If a range is already highlighted, you can use 'Jump to' to jump to one of the corners of the highlighted range.

The top line of the 'Jump to' dialog will also offer options for *named ranges* and *circular references*, if they exist in your worksheet. These are covered later.

Operators

These operators are available:

<i>Operator</i>		<i>precedence</i>
**	raise to power	1
-	make negative	2
* /	multiply, divide	3
+ - &	add, subtract, string concatenate	4
= > >= < <= <>	comparison operators	5
NOT, AND, OR	logical operators	6
%	percent	(precedence varies)

In this list, the *precedence* numbers indicate the order in which operations are performed. For example, $2+3*4$ would evaluate as $2+12$, not $5*4$. Where precedence is equal, calculation is from left to right (except for powers, which evaluate from right to left). To override this order of precedence, use brackets.

AND, OR and NOT work in the same way as in OPL.

The '%' operator

The percent operator % can be used after a number to mean "divide by 100". For example, as in the Calculator, $500*10\%$ is the same as $500*0.1$ - both mean "10 percent of 500".

The '&' operator

You can add together (*concatenate*) two text strings with the & operator. For example, if A1 contains xyz and B1 contains abc, the formula $=A1\&B1$ will give the text string xyzabc. In practice, string concatenation is rarely used.

Error messages when entering data

These are the error messages specific to the Spreadsheet. They may occur when you try to enter data into a cell.

Illegal character: You've tried to enter a number or formula containing a character not allowed in that type of data.

Function argument error: You've given the wrong number of arguments to one of the Spreadsheet functions.

Type mismatch: You've given the wrong type of argument (for example a range instead of a cell reference) to one of the functions.

Syntax error: You've mistyped a formula.

Mismatched (or): You've missed out an opening or closing bracket.

Too complex: You've tried to type in a formula which is too complex for the Spreadsheet to evaluate.

After one of these errors, the cursor is automatically positioned in the input line at the point where the error was detected.

Deleting and moving data

If you are familiar with other applications on the Series 3a, you should find deleting, copying and moving data very easy to do.

As in the Word Processor, when you delete or copy data it is kept on the *clipboard*, ready to be inserted back into the worksheet if required.


The clipboard holds complete cell information - values, formulae, and format and alignment information (as explained later). Cell information remains on the clipboard until it is overwritten.

Deleting, copying and pasting cells

- Press the Delete key to delete the current cell, or **all** the cells in a highlighted range.
- Use the 'Copy' option on the 'Edit' menu to make a copy of the current cell (or all the cells in a highlighted range) on the clipboard. This leaves the original cell or cells unchanged.
- To copy cells back from the clipboard to the grid, use the 'Paste' option on the 'Edit' menu.

Important: 'Paste' differs from the 'Insert' options found in the other built-in applications, as it **overwrites** existing cells. If you want to move existing cells out of the way before using 'Paste', see the 'Open/close gap' option, described later.

If you mistakenly overwrite something with 'Paste', the 'Undo Paste' option will "undo" the damage.

 You can copy cells from one worksheet to another. Use 'Copy', then 'Open file' to open the other worksheet, and 'Paste' to paste the cells into this second worksheet.

Pasting when a range is highlighted

- If you highlight a range which is smaller than the range on the clipboard, **no paste will be done at all**.
- If you highlight a range which is larger, the clipboard contents will be **repeated** as many times as possible within the range.

For example, you may want to fill a range of cells with the same formula. Enter the formula once, copy it, highlight the whole range and select 'Paste'. The cell references will be automatically modified, because they are *relative references*.

Relative and absolute references

If, for example, A1 contains the formula $=A2+4$, and you copy this and then paste it into cell B1, cell B1 would then contain the formula $=B2+4$ **not** $=A2+4$. This is in order to preserve the same meaning as in the original formula - "make the contents of the current cell equal to the value of the cell below, plus four":

The cell and range references you have used so far (such as the A2 in the formula $=A2+4$) are *relative references*.

Sometimes you may want to stop a formula from changing if copied to different cells. You can do this by using *absolute references*. Put a \$ before the parts of the cell reference you don't want to be modified. The formula $=\$A\$2+4$ will always be pasted in as $=\$A\$2+4$ - "make the contents of the current cell equal to the value in A2, plus four". (The \$ symbols don't affect the calculation.)

You can also use just one \$, before either the row or the column part of a cell reference. This makes only the row or the column part of the reference fixed. For example:

Formula in A1	will paste into C3 as:
$=\$B2$	$=\$B4$
$=B\$2$	$=D\$2$
$=\$B\2	$=\$B\2

Any part of the reference not preceded by a \$ is modified.

Recalculation

Initially, recalculation is automatic: as soon as you change the contents of a cell, any other cells whose formulae are dependent on this cell are themselves recalculated.

In larger worksheets, a **Recalculating** message may be shown while the Spreadsheet is recalculating.


You can continue to use all the features of the Spreadsheet while it is recalculating - for example, you can move to a different area of the grid and start entering data.

Manual recalculation

You may find it irritating to have the worksheet redrawn every time you make a change. If so, you can turn automatic recalculation off - select 'Set preferences' on the 'Special' menu, and set 'Auto recalculation' to 'No'.

Now, when you make a change, the grid will continue to display the old results of formulae. A +/- indicator comes on at the right end of the input line, whenever there are formulae in the grid which need to be recalculated:

D6	75							Recalc
	A	B	C	D	E	F		Normal Graph
1	BILLS		SALARY	FREE				
2	Electric	30	850	60				
3	Gas	40						
4	Food	100						
5	Mortgage	520						
6	Car	100	Fuel	75				
7			Repair	20				
8			Loan	30				
9								

[-] [A] [B]  Mon 26

While the  indicator is showing, some of the values in the grid may not be correct.

You can make a manual recalculation with the 'Recalc' option on the 'Edit' menu.

-  Setting recalculation to manual can save battery power and improve response, particularly with large worksheets.


Circular references - the indicator

In its simplest sense, a circular reference is where a formula refers to itself - for example, if cell B2 contained the formula =B2 .


It is also a circular reference when two formulae depend on each other - for example, if you have =D3+1 in cell B2, and =B2+1 in cell D3.



A circular reference usually means you've made a mistake - for example, you've typed in the wrong cell reference. They are rarely used deliberately in a worksheet.

Circular references can be very complex, leading from cell to cell around the worksheet, finally returning to the cell from which they started.

 Each time a worksheet is recalculated, the values in cells involved in a circular reference may change in strange ways. For example, in the previous example, the values in B2 and D3 would rise by one at each recalculation.

Detecting circular references

The  indicator appears at the right end of the input line when the worksheet contains a circular reference. Use the 'Jump to' option, and accept its suggestion of 'Circular reference'; the cell pointer will move to one of the cells involved in the circular reference.

 If you have Manual recalculation set on, the  indicator may not be up to date, as the worksheet is only checked when it is recalculated.

Moving data with 'Bring'

You can use the 'Bring' option on the 'Edit' menu to copy data highlighted in another application. To get data out of the Spreadsheet, highlight it, then select 'Bring' in the other application.

1. In the file you are copying from, highlight the data to be copied.
 2. Move to the file to which you want to copy the data. Position the cursor or cell pointer where you want the data to go, and select 'Bring' from the 'Edit' menu. The data is copied in. In the Spreadsheet, it will overwrite cells, just like 'Paste'.
- Between two worksheets all values, text and formulae are copied. This is as if you'd used 'Copy', then opened the second worksheet and pasted the data in. Relative references in formulae are automatically updated. Absolute references are left as they are. The format, alignment and protection information are also copied.
- Both files must be open at the same time.** To open the second one without **exiting the first one**, highlight it in the System screen and select it with **Shift-Enter**.
- Between a Spreadsheet and other applications, everything you can see is pasted. Formulae are copied as the values they display on the screen. Format information is lost. A row in the Spreadsheet corresponds to a line in the other application.

 Some applications will limit the amount of data they accept - for example, taking only the first line of the data.


If you separate numbers and text in the Word Processor with tab characters, you can 'Bring' them into separate cells in the Spreadsheet.

The file saved on the disk

The Spreadsheet does not work directly on a file: when you edit a file, you change the version which is currently held in memory, not the version on the disk.

Exiting the Spreadsheet

As in other Series 3a applications, the normal 'Exit' option will always save the current worksheet to file.

 Although the position of the cell pointer is stored as part of the file, a worksheet will not be re-saved if moving the cell pointer is the only change you make.

If you were just playing around with a worksheet and you do not wish to save the file, use the 'Exit, lose changes' option instead, to exit the Spreadsheet **without** saving any changes to the file.

Undoing changes

The 'Undo' option on the 'Edit' menu lets you reverse the last change made by insertion, deletion, pasting and so on. The name of the 'Undo' option reflects the last operation you performed.

For example, delete cell A1. The 'Undo' option appears in the menu as 'Undo delete'; select it, and A1 is restored.

You can use 'Undo' on the following operations:

- 'Paste', 'Bring', 'Paste special' and 'Open/close gap' on the 'Edit' menu.
- 'Format' and 'Alignment' in the 'View' menu.
- 'Protection', 'Clear' and 'Sort' in the 'Range' menu.
- 'Data extract', 'Data delete', 'Table 1' and 'Table 2' in the 'Database' menu.


Changes made to the clipboard cannot be undone. So if you copy one cell, then delete a second, and then select 'Undo', the cell which was deleted will be restored, but the clipboard will still contain a copy of this second cell, not the cell you copied first.

To disable the 'Undo' feature, select 'Set preferences' from the 'Special' menu and set 'Keep undo buffer' to 'No'. This can save memory, and also makes the Spreadsheet run more quickly.

Saving the worksheet to disk

If you are about to make large changes to your worksheet you may wish to save it as it is, so that you can revert back to the way it was if anything goes wrong.

Use the 'Save' option on the 'File' menu, before you make the changes, to save this working version to the real file on the disk.

 The file is also saved when you use the 'Exit' option, or if you change to a different file, either with the 'Open file' option on the 'File' menu, or from the file list in the System screen.

Reverting to the saved worksheet

If something does go wrong, select the 'Revert' option on the 'File' menu to revert to the version you just saved.

'Revert' re-loads the version of the file on disk. This abandons any changes you have made to the in-memory version.

Backup files

You can choose to keep the previous version of a file as a backup, whenever you save a file. Use 'Set preferences' from the 'Special*' menu and set the 'Keep backup files' line to 'Yes'. The backup file will be in the same directory and have the same filename, but with the .SP! file extension.

Important: 'Disk full' message

If a 'Disk full' error prevents the Spreadsheet from saving a file, a 'Not saved, continue anyway?' message will appear. **Press N to answer 'No' to this**, and your changes are safe: the Spreadsheet will stay as it was, keeping the file open. **Use the System screen to free some more disk space, then try again.** (If the file is on a Flash SSD, use 'Save as' to save the file onto a different disk.)

If you answer 'Yes' to the 'Not saved, continue anyway?' message, you will exit the Spreadsheet and lose any changes. The previous version of the file will still exist, though it will normally have a .SP! file extension, like backups. You can find it if you move the highlight in the System screen to below the Sheet icon, and press Tab.

Opening or closing a gap

You can insert new blank cells, or remove areas of the worksheet (whether they contain data or not), with the 'Open/close gap' option on the 'Edit' menu.

 This option has no effect if the cell pointer is outside the extent.

When you open or close gaps, **all** cell references in formulae are adjusted so that they still refer to the same cells in their new positions.

Inserting a new row or column

Rows always shift **down** to make room for the extra row; columns always shift to the **right** if you're inserting new columns.

1. To insert rows, move onto the row above which you wish to insert a gap, and press Control-Space to highlight the whole row. For columns, go onto the column concerned, and highlight it with Control-Tab.
2. If you want to insert more than one new row or column, use Shift—> (for rows) or Shift 4 (for columns), and highlight an equivalent number of rows or columns.
3. Select 'Open/close gap' from the 'Edit' menu. Set 'Action' to 'Open', and press Enter. (The 'Move' line in the dialog has no meaning when a whole line or column is highlighted.)

To insert a range

1. Highlight the range where you wish to insert a new rectangle of blank cells, shifting the present cells out of the way.
2. Select 'Open/close gap' from the 'Edit' menu. Set 'Action' to 'Open'.

3. Set the 'Move' line of this dialog to 'Right' or 'Down', to specify the direction to move the cells currently in this range, and press Enter.

To remove whole rows or columns

Closing a gap has exactly the opposite effect of opening one; other cells will move left or up as a result.

1. Highlight the row/column to be removed, with Control-Space or Control-Tab.
2. If you want to remove more than one row or column, use Shift and an arrow key to extend the highlight.
3. Select 'Open/close gap' from the menu, set 'Action' to 'Close', and press Enter.

To remove a range of cells

1. Highlight the range you wish to remove, as if you were going to delete it.
2. Select 'Open/close gap', and set 'Action' to 'Close'.
3. Set the 'Move' line of this dialog to 'Up' or 'Left', as the direction to move cells into this range, and press Enter.

The display of data

Column widths

To change the width of whole columns: use the 'Column widths' option on the 'View' menu. (If you want to change more than one adjacent column, first highlight any range of cells which extends across the columns to change.)

To reset columns to the current default width: set the 'Action' line of the 'Column widths' dialog to 'Restore'.

Column width is measured in numeric character widths - in other words, the width of a zero. The default width is initially 8 characters.

If a number cannot be displayed because the column is not wide enough, the cell is filled with # symbols. The cell contents are unaffected: if you move the cell pointer onto such a cell, the contents will be displayed in the input line.

Alignment

Text and numbers align differently by default: text aligns left, numbers and formulae align right.

To align text as you enter it: start the text with one of these alignment prefixes


' align left " align right
^ centre \ repeated


 The \ prefix repeats text in a cell as many times as will fit.

To align a cell or range: move to the cell, or highlight the range, and use the 'Alignment' option on the 'View' menu.

Leave the top line of the 'Alignment' dialog set to 'Range'. **You can set either the alignment to be used for displaying text, or the alignment for displaying numeric data.** Set 'Cell type' to 'Text' or 'Numeric', then set 'Align' to the desired alignment.

'Numeric' alignment can only be set to 'Left' or 'Right'. 'Text' alignment also has 'Centred' and 'Repeated' options.

 If you want to set both text and numeric alignment for a cell or range, you must use the 'Alignment' option twice.

 Setting the alignment of empty cells takes up memory, so do this only for cells which are going to contain data. If you highlight a whole column or row, the range shown in the dialog will be cropped either to row 100/column Z or to the extent, whichever is larger.

To change the default alignment (to be used for all cells which have not had their own alignment set): in the 'Alignment' dialog, set the top line to 'Default'.

You can set the alignment either for text or for numeric data, in the same way as before.

Display formats

You can set many different display formats for numeric data (numbers, and the results of formulae). As with 'Alignment', you can choose between setting a range of cells, or setting a *default*, to be applied to all cells which have not had a display format set.

Cells containing text are not in general affected by the 'Format' option.

To set a display format: move to the cell you wish to set (or highlight a cell range, columns or rows), then use the 'Format' option on the 'View' menu and set the 'Show as' line to the format you wish to use.

 Again, setting number formats for blank cells does use up memory.

You can set any of the following formats:

Fixed: Displays to a fixed number of decimal places.

Scientific: Displays in scientific (exponential) notation - for example, $3.24E-1$.

Currency: Like 'Fixed', but with a currency symbol. Negative numbers are shown in brackets, for example (£54.00) .

Percent: Like 'Fixed', but with a % sign. **Percentages should be entered as decimal fractions**, so e.g. to enter 71 %, type in 0.71

Triad: Like 'Fixed', but with a Triad separator (a comma) between every three digits.

General: Displays numbers to as many decimal places as will fit in the cell at its current width.

Default: Displays numbers in whichever format is the default, as set in the 'Format' dialog.


Hidden: Hides the contents of cells. The contents are still shown in the input line.

Bargraph: Displays numbers as horizontal bargraphs. Like text, bargraphs overflow across adjacent cells if they can't fit into a cell at its current width, as long as the adjacent cells are empty. Negative values are shown as bars with no outline.

Show formulae: Displays formulae as they appear in the input line. (Numbers are displayed in 'General' format.)

Date and Time: Shows numbers generated by the date and time functions (described later in this chapter) as dates and times.

To change the default format, change the setting in the 'Set' line to 'Default' and select the format as before.

 Numbers can be from 1E-99 (inclusive) to 10E99 (exclusive), from -1E-99 (inclusive) to -10E99 (exclusive), and zero. If a number outside these ranges is entered in a cell (through a formula) that cell is filled with *** characters.

Font styles

You can change the *font style* for a range with the 'Change styles' option. The four font styles work rather like styles in the Word Processor - you can set any range to have any of the four font styles.

Initially, the four font styles are defined to use the same font, but in normal, bold, italic and bold/italic. The screen display reflects the underline/bold/italic settings of the font styles.

See the 'Printing' chapter for more details of these styles.


Titles

Many worksheets consist of a table with column titles along the top and row titles down the side. When you move around the grid, away from the top left corner, you can lock the titles on screen, to remind you of what the data in a given cell means:

1. Go to the cell immediately below the column titles, and to the right of the row titles. This will usually be B2.
2. Select 'Titles on' from the 'View' menu.

A thin line now separates the titles from the working area. You cannot move the cell pointer into the titles area. The titles will remain visible even when you scroll away to other parts of the worksheet:

	K16	45					
	A	K	L	M	N	O	
1	Exam 94	Sociology	Spanish	Woodwork	Zoology		Exam Normal Graph
16	Steve L	45	41	84	41		
17	Steve T	25	35	34	69		
18	Sue	65	71	60	29		
19	Terry	54	79	71	33		
20	Una	77	46	46	47		
21	Vince	21	n/a	82	33		
22	William	6	15	12	95		
23							Mon 26

 You cannot turn titles on if the cell pointer is in A1.

To enter or edit data in cells which are part of the titles you must turn titles off temporarily.

Other display controls

To show/hide grid lines and labels: use the 'Show' option on the 'View' menu.

You can hide any cell containing the number zero, or a formula returning to zero by setting the 'Zero values' line in the 'Show' dialog to 'No'.

You can turn the status window on and off, if you wish, by pressing Control-Menu.

Separators and currency

The 'Number formats' dialog in the System screen has two lines - 'Number separators' and 'Currency' - which allow you to set a variety of numeric settings, such as the decimal point character and the currency symbol. Press Tab to expand either line into a subdialog, allowing you to change the appropriate settings.

The Spreadsheet treats the 'Number separators' settings as follows:

- The 'Decimal point' setting is used in all decimal numbers displayed by the Spreadsheet. If you use dot as the decimal point character, use a comma between parameters to functions. If you use comma as the decimal point, use a semicolon between parameters. (You will have to do the same in the Calculator, when you call a function or OPL procedure.)
- When displaying numbers in 'Triad' format, the Spreadsheet will separate every three digits with the 'Thousands separator' character. If 'Separate thousands' is set to '10000 and above', no separator will be used for four digit numbers.
- When displaying numbers in 'Currency' format, the 'Separate thousands' setting controls whether every group of three digits is separated (the way they are in 'Triads' format).

The Spreadsheet uses the settings on the 'Currency' line **only** when displaying numbers in 'Currency' format, taking all four settings into account.

If you make changes, the Spreadsheet takes your settings into account when you return to it. This also causes a recalculation.

More operations on the worksheet

Searching a worksheet

To find a string of text, a number, or part of a formula in a worksheet: use the 'Find' option on the "Search" menu.

On the 'Search for' line of the dialog, type in the characters to search for. Then set the 'In' line to control where to search. 'Values' means text, numbers, and the current results of formulae; 'Formulae' means **only** the formulae, not their results; 'Values & formulae' means all of the data in your worksheet.

If you set the 'Exact match only' line to 'Yes', only cells containing exactly the same characters **and nothing else** will be found.

If you set the 'Case sensitive' line to 'Yes', characters must also have the same case.

The first cell in which a match is found becomes the current cell. Note that if you have titles on, cells in the titles area will not be found.

 Unlike the FIND keyword in OPL, you can't use *wildcards* in search clues.

To find the next occurrence: use the 'Find again' option, also on the 'Search' menu. Keep selecting 'Find again' until you find the cell you are looking for.

'Find' starts searching from the current cell. 'Find again' starts searching from the cell after the current cell. They then search across the current row to the edge of the extent. Then they search from the left end of the next row, and so on. At the end of the worksheet area, they loop back and start searching from cell A1.

To search inside a particular range: highlight the range before you start the search and 'Find' and 'Find again' will only search inside this range.

Range names

If you use a range of cells over and over again, you can give it a *range name* by which you can refer to it. You can use the range name in formulas and with 'Jump to' to move directly to the range.

To name a range: highlight the range, then use the 'Name range' option on the 'Range' menu. Type in a descriptive name for the range.

Names can be up to 15 characters long. They can contain letters and numbers, but they must start with a letter. Since they can be used in place of cell references, they cannot themselves be valid references (such as A1, etc).

If you try to use a name which has already been defined, you will be asked whether you want to replace the previous definition.

Use the 'Edit range' option on the 'Range' menu to re-edit the name of a range, change the range to which a name refers, or delete a range name entirely.

To use a range name in formulae: use it instead of the range reference. If `totals` is a name for the range A3:A12, you could enter the formula `=SUM(totals)` instead of `=SUM(A3:A12)`.

Important: Named ranges act as relative references. You can refer to a named range as an **absolute** reference by adding a `$` symbol in front of it - `$totals`, for example. You can then copy or move a function which uses the named range, without the range changing.

To 'Jump to' a named range: select the 'Jump to' option on the 'Search' menu. It will offer 'Named range' as one of the types of places you can jump to.


When you jump to a named range, the cell pointer goes to the top left corner, and the whole range is highlighted.

While a named range is highlighted, you can use 'Jump to' to jump to one of the corners of the highlighted range- 'Top left', 'Top right', 'Bottom left' or 'Bottom right'. The range will remain highlighted.

Protecting cells

You can use cell protection to prevent the contents of cells being modified. A common use is in worksheets used mainly for data entry, in which the formulae have been set up and should not be modified.

To protect cells: highlight them, and then use the 'Protection' option on the 'Range' menu. Press the '+' key to turn protection on for the range.

A padlock symbol  is displayed, at the right-hand end of the input line, if the current cell is protected. If you try to paste, delete or clear any cells which have been protected, you will see a message 'Protected cells were not changed'.

To remove the protection on cells: highlight the cells and then use the 'Protection' option again. This time, press the '-' key to unprotect the range shown.

To unprotect all protected cells temporarily: select 'Set preferences' from the 'Special' menu, and set 'Override protection' to 'Yes'.

More operations on data

Sorting a range

You can sort tabular data into alphabetic or numeric order. For example, you might sort product information by price:

A3	'flour						Sort1	
	A	B	C	D	E	F	G	Normal Graph
1		price	amount					
2	dates	0.95	3					
3	flour	1.22	3					
4	jam	0.66	3					
5	salt	0.53	4					
6								
7								
8								
9								

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Highlight the range to sort, then use the 'Sort' option on the 'Range' menu:

A3	'flour						Sort1	
	A	B	C	D	E	F	G	Normal Graph
1		price	am					
2	dates	0.95						
3	flour	1.22						
4	jam	0.66						
5	salt	0.53						
6								
7								
8								
9								

Sort range

•1st key (col) B
Ascending

•2nd key (col)
Ascending

•Sort by Rows


•Case sensitive No


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In this example, each **row** has the data for one product, so you want to leave 'Sort by' set to 'Rows'. The '1st key' is the *sort key* - "what to sort by"; to sort according to price, the sort key to use is column B.

The second line of the 'Sort' dialog controls the order in which the rows/columns are sorted. 'Ascending' means that cells are ordered from lowest to highest.

When you press Enter, the rows are rearranged in the desired order. Any relative references in formulae are automatically modified.

 Cells containing text are sorted alphabetically, before ("lower than") cells containing numeric data. If you set 'Case sensitive' to 'Yes' in the 'Sort' dialog, lower-case characters always sort after upper-case characters.

 If you have rows/columns which have the same value for the first sort key, you can sort them according to a second sort key.

Clearing selected information


The 'Clear' option on the 'Range' menu lets you selectively clear the information in a range of cells. (It does not affect the clipboard.) It has settings for 'Formulae', 'numbers' and 'text'.

If you choose the 'Formats' setting, any empty-looking cells which still contain format or alignment information are cleared; no other cells are affected.

If you use the 'Clear' option, set 'Formulae' to 'Convert to values', and set all of the other options to 'No', any formulae in the highlighted range will be replaced by their current values.

Paste special

The 'Paste special' option on the 'Edit' menu pastes the contents of the clipboard, like the 'Paste' option, but allows you to choose which aspects of the cell information to paste:

- 'Formulae', 'Numbers', 'Text' - if you set any of these, cells with the corresponding kind of data will be pasted. The 'Action' line controls what happens to the data:
 - 'Overwrite': inserts the new data into the cells.
 - 'Add': values on the clipboard are added to those currently in the cells. Formulae and/or numbers are added together: text strings are *concatenated* (joined together).
 - 'Subtract': numbers and formulae on the clipboard are subtracted from the existing ones. (Subtracting has no effect on cells which contain text.)
-  If you try to mix text with numeric values, the cell will be left with its contents unchanged.
- 'Formats' means information set by the 'Format' and 'Alignment' dialogs. If set, format information will replace the existing formats.

Graphs


You can create a graph to display the **current** values of one or more ranges in a worksheet. You can define any number of graphs in each worksheet. **The ♦ key changes the display between the worksheet and graphs.**

Creating the first graph

1. Enter the numbers for which you want to create the graph in a single row (or column) and highlight them, using ←↑↓→
2. Press the ♦ key, and the numbers are displayed as a 3D bar graph.

To return to the worksheet, press the ♦ key again (or the Esc key). You might then highlight a different range of figures, and press the ♦ key to see them displayed as a graph.

If you highlight several rows of figures before selecting 'Graph', the rows are displayed **together** on the same graph. If the top left cell contains text, the top row will be used as labels along the bottom of the graph.

 You can also highlight and display columns in this way.

Saving the graph

While a graph is displayed, a new set of graphics menus is available. If you use any of their options to change the appearance of the graph, the Spreadsheet **saves** the graph for you with the name Graph1 . (It is not a separate file, but part of the worksheet itself.)


Once graphs have been saved, the current graph - the one most recently displayed will always be displayed when you press the ♦ key. This is because there are now two reasons why you might highlight another range of figures before pressing the ♦ key:

- To add the highlighted range to the current graph, so that it displays two sets of figures. (Use the 'Set ranges' option). Or:
- To start a new graph with the highlighted figures, as before. (Use the 'New graph' option).

Adding a new range to the current graph

Up to six *graph ranges* can be displayed on a graph. The first range shown on the graph is called range **A** . Further ranges are named from **B** to **F** .

1. Highlight the range of figures to add, and press the **◆** key. **The current graph is shown, as before.**
2. Select the 'Set ranges' option. Set the top line of the dialog to **B** , **then press Space**. This sets 'Enabled' to 'Yes', and the range you highlighted appears on the 'Range' line of the dialog.
3. Press Enter, and the graph will now show the two sets of figures, side by side, each with a different shading pattern.

 Graph range **X** is a special graph range, used to label the X-axis. It is described later.

Adding adjacent rows or columns of figures

If you want to add figures from several adjacent rows (or columns) to the graph, highlight the figures as a block, and select 'Set ranges'. Repeat step 2 above and define each new range for the graph.

If there are more rows than columns in the highlighted range, the Spreadsheet treats each **column** as a new graph range. Otherwise, each **row** becomes a new graph range.

Displaying a legend for graph ranges

You can enter names for graph ranges on the 'Legend' line of the 'Set ranges' dialog, for example 'Sales', 'Profits' and so on. You can then use the 'View Legends' option on the 'Special' menu to display a box containing the graph's legends. The box is removed when you press a key.

Background drawing

A graph may take a little time to draw if it contains a very large number of cells. However, you can use options on the menus while the graph is redrawing, or press Esc to return to the worksheet.


Adding text to a graph

Labelling the X-axis

You can put *X-labels* along the bottom of the graph (the X-axis) to show what each value on the graph represents. For example, you might add the text for months from Jan to May to a graph showing the sales figures for those months.

1. Highlight the range of text cells to use as X-labels, display the graph and select the 'Set ranges' option.
2. Set the top line of the dialog to 'X'. **Then press Space:** this sets the "Enabled" line to 'Yes' and fills in the range you highlighted. Press Enter to complete the dialog.


If the X-labels are too wide and overwrite each other, select 'Set ranges', set the top line of the dialog to 'X', and change the setting in the 'Step' line to a number greater than 1. If, for example, you set it to 3, only every third X-label is shown.

 If your graph displays just one set of figures, you can show the figures corresponding to the bars on the X-axis, by using the range of figures themselves for the X range.

Labels on each bar

You can use text or numbers in the worksheet as *labels* on the top of each bar, to show what each bar represents:

1. Highlight the range of cells to use as labels, display the graph and select the 'Set labels' option.
2. Set the top line of the dialog to the graph range for the labels, e.g. A . **Then press Space:** this sets the 'Enabled' line to 'Yes' and fills in the range you highlighted. Press Enter to complete the dialog.

 If you use numbers as labels, they are shown in exactly the same way as they are shown in the Spreadsheet.

As with 'Set ranges', you can highlight several rows or columns before selecting the option. You would then enable each graph range to have labels in turn by pressing Space.

Adding a main title to a graph

Select the 'Titles' option on the 'Display' menu, set the 'Show titles' line to 'Yes', and type the title on the 'First' line. If you wish, enter a second line of title text on the 'Second' line. Press Enter to complete the dialog.

To turn the titles off and on, without losing the text itself, select the 'Titles' dialog again, and set the top line to 'No' or 'Yes'.

 Titles do not affect the name which is given to the graph.

Adding a title to an axis

You can add a title of up to 39 characters for the X-axis (across the bottom of the screen) and/or Y-axis (down the left):

- Select the 'Axis titles' option on the 'Display' menu, set the 'Show X-axis title' and/or 'Show Y-axis title' line(s) to 'Yes' and type the text that you want to use. Press Enter to complete the dialog.

Entering cell values as text

To insert the current value of a cell (text or numbers) into text you have added to a graph (for example in titles), use the \ character and the cell reference. For example, to enter the title "Result:", followed by the contents of cell B2, you would type `Result: \b2` in the 'First' line of the 'Set titles' dialog.

 To enter a \ character itself in text you must type it twice.

Changing the graph type

The graph format that you have seen so far is a Bar graph in 3D. You can change the graph type to show data as a Stack-bar, Pie chart, Line graph, or X/Y scatter graph:

1. Use the 'Format' option on the 'Display' menu to change the display of the graph.
2. Set the 'Type' line to the new graph type.

For 'Bar', 'Stack-bar' and 'Pie' graphs, you can set the '3D' line to 'Yes' to display a 3D graph, if you wish.

Stack-bar graphs


Use these when several sets of figures comprise a breakdown of one larger set of figures - for example, a graph showing bars for sales in months Jan to May, where the bar for each month comprises sections for corporate, retail and direct sales.

Pie charts

Pie charts can only display one set of figures. Use them to reflect the percentage of some overall figure taken by each of its parts. For example, a pie could show the breakdown of sales, with slices for corporate, retail and direct sales.

The pie chart displays the values in the first enabled graph range - usually A . Any negative numbers in the graph range will be ignored. The X-label for each value is shown alongside its slice of the pie.


When defining a pie chart you can use the 'Pie labels' line to make the value of each slice appear next to any X-label. You can choose the way to display the value - 'Percentages', 'Values' or 'None'.

 On pie charts you cannot display labels (set with the 'Set labels' option) or use the 'View legends' option.

Line graphs

Line graphs are designed to show several sets of figures. Values are displayed as symbols, joined together by lines. You can set each graph range to show lines, symbols, or both, with the 'Line formats' option on the 'Ranges' menu.

X-labels for a range initially appear centred on the symbol positions. You can change the position of the X-labels by changing the setting in the 'Alignment' line in the 'Set labels' dialog. Or you might turn the lines and symbols off and show just labels in the centred position.

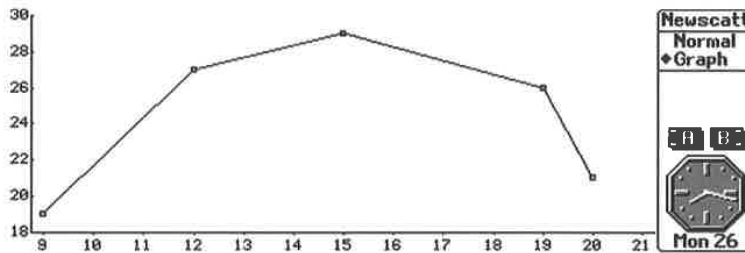
 Lines, when set, are only shown between values in adjacent cells. If a cell within a range is blank, no line will be drawn between the values of the cells before and after it.

XY/Scatter graphs

Use the XY/Scatter format when sets of figures are dependent on some other variable. The values in graph ranges still represent a position "up the screen", but their positions "across the screen" are determined by the values in graph range 'X'.

For example, you measure the temperature at five points in the day: 19°C at 09:00, 27°C at 12:00. 29°C at 15:00 (3pm). 26°C at 19:00 (7pm). and 21°C at 20:00 (8pm).

You can set the temperatures (19, 27, 29, 26, 21) as graph range 'A', the times (9,12, 15, 19, 20) as graph range 'X', and use the XY/Scatter format:




formats for the X-axis as well as the Y-axis (see 'Axes' later in this chapter for further details). For other aspects of the display, the 'XY/Scatter' format acts like the 'Line' format.

Other display options

Axes - changing limits and number formats

The 'Axis' option on the 'Display' menu controls the way the axes are drawn. The top line of the dialog controls which axis to set - 'X' or 'Y'. (You can only change this to 'X' when using the 'XY/scatter' format.)

- Normally, the axes are automatically sized to accommodate the values you are displaying. To set the limits, change the 'Limits' line from 'Automatic' to 'Manual'. Type the new limits on the 'Upper' and 'Lower' lines, and press Enter.
- Numbers on the axes are initially displayed using the 'General' format. To change this, move to the 'Format' line, and select the new number format. Change the 'Decimal places' line, if required, and press Enter.

 You can use any of the formats used by the Spreadsheet to display numbers in cells, apart from 'Show formulae' and 'Default'.

When you use the 'General' number format with very large values, the Spreadsheet will automatically display the words THOUSANDS or MILLIONS vertically down the Y-axis, and use correspondingly smaller numbers on the axis.

Changing the font size


You can change the size of all text and numbers displayed on a graph. When you select the 'Format' option, you can set the 'Font size' line of the dialog to:

- **Small:** a 5x3 pixel font is used.
- **Medium:** a bigger font is used. Medium is used as the default font size for text and numbers on graphs.
- **Big:** an even bigger font is used - on the Series 3a, the standard system font is used.

Alternatively, you can use the 'Zoom in' and 'Zoom out' options to cycle through the font sizes.

Grid lines

If you select the 'Format' option, and set the 'Horizontal grid' line to 'Yes', you may find you can read across more easily from a bar or point to its value on the Y-axis. (You may also wish to do the same to 'Vertical grid'.)

 Grid lines are not shown in 'Pie' format.

Horizontal scaling

If, for example, you want a graph of "yearly profit", adding the figures throughout the year, you may wish to set the graph ranges to be 12 cells wide, right from the start. You could then fill in the cells month by month.

Multiple graphs

Creating a new graph

Highlight the first set of figures to use in the new graph, then press the **◆** key. **If you have already defined a graph previously, it will still be shown.** Now select the 'New graph' option on the 'Graphs' menu. Type a name for this new graph.

Leave 'Keep data' set to 'No' for a brand new graph. If you set it to 'Yes' your new graph inherits the same sets of figures as the previous graph.

To use **all** of the same settings as before - format, text, and so on - set 'Keep settings' to 'Yes'. To start with a 3D bar graph, with no legends, axis settings (etc) set at all, set 'Keep settings' to 'No'.

New graphs with multiple graph ranges

To create a new graph using figures from several adjacent rows (or columns) as the ranges, highlight them all together, before using 'New graph'.

If the first cell in the range contains text, the first row/column will become graph range 'X'. Otherwise, it will be 'A'. **You can therefore highlight a range of figures with or without X-labels, and 'New graph' will fill in the graph ranges correctly for you.**

As with 'Set ranges', if there are more rows than columns in the range (i.e. if the range is "tall and thin"), the Spreadsheet treats each column as a new graph range. Otherwise, each row becomes a new graph range.

Managing your graphs

To cycle round the graphs use the Tab key. Shift-Tab cycles round in the opposite direction.

To select a graph by name select the 'Use graph' option. If you press Tab here, you can see a list of all the defined graphs.


To rename the current graph select the 'Rename graph' option on the 'Graphs' menu.

To delete an unwanted graph use the 'Delete graph' option on the 'Graphs' menu.


This also frees the memory which it took up. If you delete all existing graphs, you are returned to the worksheet.

Printing graphs: .PIC files

As the Series 3a does not have graphics-based printer drivers, you cannot print graphs directly. You can, however, save graphs as "industry-standard" .PIC files, and then use spreadsheets, word processors, or print utilities on other computers to print them.

 The .PIC files mentioned here have no connection with OPL bitmaps, which also use .PIC as the default file extension.

Use the 'Create .PIC file' option on the 'Special' menu. The 'Colour' line of the dialog controls whether areas are saved as filled blocks ('Yes') or as shading patterns ('No'). If you intend to use a black and white printer, set 'Colour' to 'No'. **You can change the shading pattern used for a set of figures by entering it in a different graph range ('A' to 'F').**

 In fact, colour information is always saved, but will only be used if you print to a colour printer.

The .PIC file format stores information on the items which make up the graph. It is **not** a pixel-by-pixel format; the resolution and precise detail of the printed graph depend on the resolution of your printer, and of the program which prints the .PIC file. Note, however:

- All bar graphs are stored as 2D. Only pie charts can be 3D.
- Titles are always shown, if set - even if they are not shown on screen.
- A guide to the different graph ranges is always included. This performs the same function as the box shown by the 'View legends' option, which is itself not included in the .PIC file.

 .PIC files are by default kept in a \SPR directory - the same as worksheet files themselves.

Entering a database

A *database* is a table of information which you can sort and search by various *criteria*. For example, here is a database of contractors working for an agency;


D1	London						Database
	A	B	C	D	E	F	Normal Graph
1	Name	Rate	Car	London	S'hand	Wpm	
2	HARVEST	4.5	Y	N	Y	45	
3	HUMPHREY	4	Y	N	Y	35	
4	HUSSEIN	6	N	Y	N	55	
5	WALKER	6.5	Y	Y	Y	50	
6	MILES	6	N	Y	Y	60	
7							
8							
9							

Each row is a record



Each column is a field

Each column **must** have a *field name* in the first row.

To define it, highlight the whole range, including the field headers. In this example, the range is A1:F6. Then use the 'Set database' option on the 'Database' menu.

 Setting the database simply creates a named range called `database`. (Each worksheet can only have one database.) You can check or change this at any time with the 'Edit ranges' dialog. You can also use 'Jump to', and select the `database` range; this highlights the whole range.

If you enter any new records at the bottom of the range, remember to redefine the database range to include them. You can also use the 'Open/close gap' option to add or remove records or fields to the middle of a database. This adjusts the range automatically.


-  You can sort the Database range in exactly the same way as any other range,
-  Databases in the Spreadsheet have no connection with the Database application.

The criterion range

Criteria specify conditions which a record has to meet in order to be highlighted, rather like search-clues in the 'Find' option. However, criteria can be more complex:

- You can specify several conditions at once.
- A condition can make use of Spreadsheet functions and logical operators.

The first row of the criterion range should contain the same field names as the database range.

-  Although you would normally copy all the field names, this is not obligatory: you can quite happily copy only those that are of interest. The order of field names is unimportant.

The second row contains the first criterion - the data which a record must contain in order to match - for example:

A1	Name						Database
	A	B	C	D	E	F	Normal Graph
1	Name	Rate	Car	London	S'hand	w p m	
2			Y	N			
3							
4							
5							
6							
7							
8							
9							

Records in the database must have both Y in the Car column and N in the London column to match this criterion. In this example, the 'Harvest' and 'Humphrey' records match. (Note that the match is case-sensitive, so if you used y in the criterion, no records would match.)

You can add further criteria in further rows if you like. A record only has to meet one of the criteria (i.e. to match one of the rows) to be highlighted.

To define the criterion range highlight the range to use (including the field names), then use the 'Set criteria' option on the 'Database' menu. **Make sure you do not highlight any blank rows below the criteria** - all records will match with a blank criteria.

-  The criterion range is also just a named range (`criterion`).

Searching by the criteria


Select the 'Data find' option on the 'Database' menu. The first record (from the top downwards) meeting the criteria is highlighted. Select 'Data find again' from this menu to highlight the next matching record.

Extracting matching records

To make the Spreadsheet **copy** all the matching records into a separate area:

1. Copy the field headers from the top row of the database, and paste them into a new area of the worksheet.
2. Highlight the field headers you have just pasted, **and enough rows below to fit all the matching records**.
3. Select the 'Data extract' option on the 'Database' menu.

This asks the question 'Extract unique records only?'. If you answer 'Yes', then any identical matching records will only be copied once into the extract range.

 "Identical" includes different formulae returning the same result. And if not all of the field headers were copied to the top of the extract range, "identical" records have only to be identical in the field names which were copied.

All the matching records are copied into the extract range. You are told if no matches are found, or if the range isn't big enough to fit all the matches in.


Deleting matching records

Use the 'Data delete' option on the 'Database' menu to remove all those records which match the criteria. The other records close up to fill the space, and formulae are adjusted accordingly.


Matching a range of values

To match records with a Rate below 5, enter the formula =B2 in the criterion's Rate column. Note that the formula should refer to the cell (B2) in the **first** record, whichever row of the criterion range it is on.

You can use these operators: < (less than), <= (less than or equal to), > (greater than), >= (greater than or equal to), and <> (not equal to).

 For criterion cells which use formulae, like =B2, use the 'Format' option to set their display format to 'Show formulae'.

Other database notes

- If, in a criterion, you refer to a cell outside the database range, you must use an absolute cell reference.
- You can use these wildcards: ? (any one character), * (any number of characters) ~ (anything except what follows it). For example, the criteria ~*Jones* would match all records which don't have Jones anywhere in that field.
- You can use Spreadsheet functions in criteria. For example. =F2>AVG(\$F\$2:\$F\$6) would search for all those with above average w.p.m. (Note the use of absolute references, so that AVG always works on F2:F6.)
 In this example, you could improve performance by using AVG in a cell outside the criterion range, and referencing this cell in the criterion range, AVG would then only be evaluated once.
- There are a range of *database statistical functions* described later in this chapter. These automatically work out statistical data (such as averages) of records in a database range which match a criteria in a criterion range.
- The database and criterion named ranges, like other named ranges, are normally relative. If you copy or move a function which uses a named range you will find that this range will change. To stop this, use **absolute** references by adding a \$ symbol- \$database and \$criterion.

Tables

Tables let you perform *sensitivity analysis*, or 'what if' calculations.

Table 1

A *Table 1* tries different values in **one** particular cell (the *input cell*) elsewhere in the worksheet. Each time it does so it recalculates the whole worksheet, and records the results of several formulae. (As an example: you have several "profit" cells, all dependent on an "exchange rate" cell, and you want to see what the profit figures would be for different exchange rates.)

1. Find a blank rectangular area of your worksheet, to use as the table. Leave the top left cell of this area blank.
2. Down the first column, below the top left cell, enter the values you want to try for the input cell. (In the example: some different exchange rates.)
3. Across the first column, to the right of the top left cell, enter the formulae you wish to work out. (In the example: simple formulae, like $=F7$, referring to the cells which have the profits.) You may wish to use the 'Format' option to set these cells to the 'Show formulae' format.
4. Highlight the whole area and select the 'Table 1' option on the 'Database' menu. On the dialog it displays, enter the reference of the 'Input cell' - the cell to try the different values in. (In the example: the "exchange rate" cell.)

The table is filled in. Each cell in the body of the table shows the value the formula at the top of this column had, when the value at the left of this row was copied into the input cell.

Table 2

A *Table 2* tries different pairs of values in **two** particular *input cells* elsewhere in the worksheet. Each time it does so it recalculates the worksheet, and records the result of **one** formulae. (As an example: you have a "profit" cell, dependent on an "exchange rate" cell and a "unit cost" cell, and you want to see what the profit figures would be for different exchange rates and unit costs.)

1. Find a blank rectangular area of your worksheet, to use as the table. In the top left cell of this area, enter the formula you wish to work out. (In the example: a simple reference to the profit cell, eg $=F6$) You may wish to use the 'Format' option to set this cell to the 'Show formulae' format.
2. Down the first column, below the top left cell, enter the values you want to try for the first input cell. (In the example: some different exchange rates.)
3. Across the first column, to the right of the top left cell, enter the values you want to try for the second input cell. (In the example: some different unit costs.)
4. Highlight the whole area and select the 'Table 2' option on the 'Database' menu. On the dialog it displays, enter the references of the two cells - 'Input cell 1' and 'Input cell 2' - to try the different values in. (In the example: the "exchange rate" and "unit cost" cells.)

The table is filled in. Each cell in the body of the table shows the value the formula in the top left cell had, when the value at the left of this row was copied into the first input cell, and the value at the top of this column was copied into the second input cell.

More about tables

- The formulae and the values may contain references to cells containing values or expressions, using any of the Spreadsheet functions.
- The original contents of the input cells are restored after the table has been filled.
- To make the table recalculate every time a change is made to the worksheet, use 'Set preferences' on the 'Special' menu to turn 'Table recalculation' on. This may slow down recalculation.
- You can use the 'Table 1' and 'Table 2' options in conjunction with databases. The input cells for the table should be in the criterion range; the formulae you are calculating should be database statistical functions. In this way, various different criteria are tried, resulting in various sets of records matching. The data in the matching records is then analysed by the database statistical functions.

Date and time functions

- You can enter dates and times using these formulae:
=DATE (year, month, day) enters dates as *day numbers* - a count of days since 31/12/1899. (Day 93503 - 31st December 2155 - is the maximum value.)
=TIME (hour, minute, second) enters times as a *time number*, from 0 (midnight) through 0.5 (noon) to 0.999... (just before midnight).

To see a day or time number displayed as a date or time, use 'Format' from the 'View' menu, and set the 'Show as' line to 'Date' or 'Time' as appropriate. The exact format is as set by the 'Formats' option **in the Time application**.

- You can enter dates and times as ordinary text, with the ' ' prefix. Then in formulae which refer to these cells, use one of these functions to convert the text into day or time numbers:

DATEVALUE (cell) for dates

TIMEVALUE (cell) for times

- where cell is the reference of the cell containing the date or time.

Date functions

DATE (year, month, day) returns the appropriate day number, giving the date as year (0-255, where 0 is 1900), month (1-12) and day (1-31).

DATEVALUE ("datestring") returns the appropriate day number given datestring, the date as a text string **in the format set up in the Time application**.

DAY (x)

MONTH (x)

YEAR (x) returns the day of the month (1 to 31), month number (1 to 12), and year number (0 to 255) from the day number x.

Time functions

HOURL (x)

MINUTE (x)

SECOND (x) returns the 'hour value' (0-23), 'minute value' (0-59) and 'second value' (0-59) for the time number x.

TIME (hour, minute, second) returns the time number for the specified hour (0-23), minute (0-59) and second (0-59). Returns ERR if any of the values are out of range.

TIMEVALUE (timestring) returns the time number given the time as a text string. timestring must be in one of these formats:

"hour:minute:second"

"hour:minute:secondAM" (or PM instead of AM).

You can omit second if you like.


Combined date and time function

NOW returns the combined date and time number, corresponding to the current time on the Series 3a.

To display the current date, use the formula =NOW and set the cell to 'Date' format.

To display the current time, use the formula =NOW and set the cell to 'Time' format.

This date and time will update when the worksheet is recalculated.

 If you just want to record the current date/time, enter +NOW in a cell, and set it to either 'Date' or 'Time' format.

Financial functions

When using these functions:

- Enter rates as either a percentage or as a decimal - e.g. 5% or 0.05
- Enter interest rates for the same unit of time as used for the term. So if you specify that a loan lasts for 12 months, rather than 1 year, enter the interest rate per month, not per year.
- To calculate the annual percentage rate (APR) from a percentage for a monthly period use the following formula:

$$\text{annual rate} = ((1 + \text{monthly rate})^{**12}) - 1$$


More generally, to convert from an interest rate for one period to the equivalent interest rate for another period, use the formula:

$$\text{rate2} = (1 + \text{rate1})^{**(\text{period2}/\text{period1})} - 1$$

where period1 and period2 are measured in the same units.

Lump sum investments

CTERM (interest, future_value, principal) calculates how long it will take for an investment of principal to increase to future_value, if the investment is earning interest at a fixed rate of interest per period.

 The CTERM function uses the formula:
$$\text{term} = \ln(\text{future value}/\text{principal}) / \ln(1 + \text{interest})$$

where ln is the natural logarithm.

To calculate how much the investment will be worth after a certain period of time, use the formula:

$$\text{future_value} = \text{principal} * (1 + \text{interest})^{**\text{term}}$$

RATE (*future_value*, *principal*, *term*) calculates the interest rate needed for an investment of *principal* to increase to *future_value* over a *term* of compounding periods.



The RATE function uses the formula:

$$\text{interest rate} = (\text{future_value}/\text{principal})^{1/\text{term}} - 1$$

Cash flows

In these functions, the parameter *cash_flows* is a range reference, specifying the cells containing the initial cost and the receipts.

- **Enter the cash flows in chronological order.**
- **Enter outflows (expenditures) as negative and inflows (receipts) as positive.**

Enter any initial cost in the first cell in the range. Use the remaining cells in the range to specify the receipts. These may be of varying amounts, but **must** be listed in the order in which they are paid. If there is no receipt during one period, leave the cell blank. **The cash flows are assumed to occur at equal time intervals, at the end of each period.**

The cells in the range are read from left to right top to bottom.

IRR (*guess*, *cash flows*) calculates the Internal Rate of Return (the effective interest rate earned) on an investment returned in a series of cash flows.

guess can be a value, or the reference of a cell containing a value. The value is your guess at the interest rate. The Spreadsheet uses it as the first in a series of approximations to calculate the interest rate. Specify a number between 0 and 1 (that is, between 0% and 100%).

NPV (*interest*, *cash flows*) calculates how much an investment would be worth if it were possessed as a lump sum now (before earning any interest) rather than as a series of future receipts - i.e. the present value. *Interest* is the interest rate per receipt period.

The NPV function assumes that the receipts (cash flows) occur at the end of each period. To calculate the NPV (*Net Present Value*), where cash flows occur at the **beginning** of each period, use the function like this:

$$\text{npv} = \text{first_receipt} + \text{NPV}(\text{interest}, \text{remaining_receipts})$$

since the first receipt is received before it earns any interest.



The NPV function uses the formula:

$$\sum (\text{cashflow}_i / (1 + \text{interest})^i)$$

where $\text{cashflow}_i \dots \text{cashflow}_n$ is the series of cashflows.

Annuity investments

An annuity is an investment of a series of equal payments earning a fixed rate of interest - such as a savings account into which you pay £200 every month.

The following functions assume that the annuity is an ordinary annuity - in other words, payment is made at the **end** of each period.

FV (*payment*, *interest*, *term*) returns the matured value of an investment given the *payment* per period, the *interest* rate per period, and the *term* of the investment (a number of periods).




The FV function uses the formula:


$$\text{future value} = \text{payment} * ((1 + \text{interest})^n - 1) / \text{interest}$$

where *n* is the number of periods.

PV (*payment, interest, term*) returns the present value of an investment given the payment per period, the interest rate per period, and the term of the investment (a number of periods).

 The PV function uses the formula:
$$\text{present_value} = \text{payment} * (1 - (1 + \text{interest})^{-n}) / \text{interest}$$

TERM (*payment, interest, future_value*) returns the number of payments needed to accumulate future value from a series of payments earning a periodic interest rate.

 The TERM function uses the formula:
number of payments = $\ln(1 + (\text{future_value} * \text{interest} / \text{payment}))$
divided by $\ln(1 + \text{interest})$
where $\ln()$ is the natural logarithm.

Annuity due

To calculate 'annuity due' - an annuity where payment is made at the **beginning** of each period - use the functions like this:

```
=FV(payment, interest, term) * (1 + interest)
=PMT(payment, interest, term) * (1 + interest)
=TERM(payment, interest, future_value / (1 + interest))
```

An annuity due is always worth more than an ordinary annuity, since the interest has longer to mature.

Loan payments

PMT (*principal, interest, term*) returns the amount to be repaid per period on a loan, given the principal of the loan, the interest rate per period and the term the loan has to run (expressed as the number of periods).

This function assumes that repayment is made at the **end** of each period. For a loan where repayment is made at the **beginning** of each period, use the function like this:

```
=PMT(principal, interest, term) / (1 + interest)
```

 The PMT function uses the formula:
$$\text{payment} = \text{principal} * \text{interest} / (1 - (1 + \text{interest})^{-\text{term}})$$

Note: you can use the TERM function to calculate the number of payments needed to pay back a loan, by making future value a negative amount.


Depreciation

These functions calculate the depreciation of an asset over a period of time. In these functions:

- The asset has the initial ('book') value *cost* .
- The asset has the value *salvage* at the end of its life.
- The asset's salvage value is taken at the end of *life* number of periods.
- The periods of depreciation are *period* length of time.


The Spreadsheet provides functions that allow you to spread the depreciation in 3 different ways.

SLN (*cost, salvage, life*) returns depreciation using the **straight-line method**, which assumes that the asset loses the same value during every period of its life.

 The SLN function uses the formula:
depreciation per period = (cost-salvage)/life


SYD (cost, salvage, life, period) returns depreciation using the **sum-of-the-years'-digits** method, where the asset depreciates more at the beginning of its life than at the end.

Change the `period` to find how much the asset loses in each particular period.

 The SYD function uses the formula:
depreciation per period = (cost-salvage)*(life-period+1)
divided by (life*(life+1)/2)

DDB (cost, salvage, life, period) returns depreciation using the **double-declining balance** method, where the asset depreciates **much** more at the beginning of its life than at the end.

Change the period to find how much the asset loses in each particular period.

 The DDB function uses the formula:
depreciation per period = (book value*2)/life
where book value at the start of each period = (total cost - total depreciation over all previous periods)

Mathematical and logical functions

Trigonometric functions

These functions use angles expressed in radians. If you want to type in and display angles in degrees, convert the angle using these formulae:

radians = PI*degrees/180 degrees = 180*radians/PI

PI returns the value of the mathematical constant PI.

ACOS (x) returns $\text{COS}^{-1}(x)$ - the angle, in radians, whose cosine is `x` .

ASIN (x) returns $\text{SIN}^{-1}(x)$ - the angle in radians whose sine is `x` .

ATAN (x) returns $\text{TAN}^{-1}(x)$ - the angle in radians whose tangent is `x` .

ATAN2 (x, y) returns $\text{TAN}^{-1}(y/x)$ - the angle, in radians, whose tangent is `y/x` - using the signs of `x` and `y` to return an angle in the appropriate quadrant:

<i>x and y</i>	<i>value returned</i>
<code>x>0 and y>0</code>	between 0 and $\pi/2$
<code>x<0 and y>0</code>	between $\pi/2$ and π
<code>x<0 and y<0</code>	between $-\pi$ and $-\pi/2$
<code>x>0 and y<0</code>	between $-\pi/2$ and 0

COS (x) returns the cosine of the specified (radian) angle `x` .

SIN (x) returns the sine of the specified (radian) angle `x` .

TAN (x) returns the tangent of the specified (radian) angle `x` .

Logs

EXP (x) returns the value of the mathematical constant `e` raised to the power of `x` (which can be negative).

LN (x) returns the natural (base e) log of x , or ERR if $x < 0$.

LOG (x) returns the logarithm base 10 of x , or ERR if $x < 0$.

General mathematical functions

ABS (x) returns the absolute (positive) value of x .

CHOOSE (x, v₀, v₁ . . . v_n) returns the x th item in the list v_0, v_1, \dots, v_n . The list may contain a mixture of strings and values. The first item in the list has the number 0, not 1.

Returns ERR if x is greater than the number of items in the list minus 1.

INT (x) returns the integer part of x by truncating **toward zero**.

ROUND (x, n) returns x rounded to n places, n must be between 15 and -15 inclusive. If it is not an integer, just its integer part is used.

$n > 0$: x is rounded to n decimal places

$n = 0$: x is rounded to the nearest integer

$n < 0$: x is rounded to the n th power of ten - that is, to the nearest ten, hundred, thousand ...

RAND returns a random number between 0.0 (inclusive) and 1.0 (exclusive), to 16 decimal places. Multiply by 10 to get a number between 0 and 10. Use the expression $=INT(RAND*6)+1$ to get a number between 1 and 6.

MOD (x, y) returns the remainder of x/y . Returns ERR if $y < 0$.

SQRT (x) returns the square root of x , or ERR if $x < 0$.

Logical functions


TRUE returns 1.0 (true).

FALSE returns 0.0 (false).

IF (x, then, else) returns the value of *then* if $x <> 0$ (true) or the value of *else* if $x = 0$ (false). x , *then* and *else* may be cell references, values or expressions.

A common use of the IF function is to check for a 'divide by zero' error. For example, if a cell contains the formula: $=23/A2$ and it is possible that A2 will contain the value 0, then you might change the formula to this: $=IF(A2, 23/A2, "Infinite")$. This formula evaluates like this:

- if A2 is true (that is, contains a non-zero value) then the formula becomes $=23/A2$.
- if A2 is false (that is, contains the value zero) then use the text *Infinite*.

 See the Series 3a Programming Manual for a full explanation of the comparison and logical operators available on the Series 3a.

'Error' and 'Not available' functions

Any cells which refer to cells containing ERR or NA also have ERR or NA in them. You can check for this ripple-through effect with ISERR or ISNA.

ERR returns ERR (error).

NA returns NA (not available).

ISERR (x) (where x is a cell reference) returns 1.0 (true) if the value in x is ERR, or 0.0 (false) if the value in x is not ERR.

ISNA (x) (where x is a cell reference) returns 1.0 (true) if the value in x is NA, or zero (false) if the value in x is not NA.

Range functions

All of these functions require a full range reference. Should you wish to specify a single cell - perhaps with the N, S or CELL functions - enter it as a range (e.g. A1:A1).

General range functions

COLS (range) returns the number of columns in range.

ROWS (range) returns the number of rows in range.

INDEX (range, column, row) returns the contents of the cell at position (column, row) in range, where the upper left-hand cell in range is the 'origin' (column 0, row 0).

N (range) returns the value of the top left-hand cell in range as a number. If the cell contains a string, 0 is returned.

S (range) returns the value of the top left-hand cell in range as a string. If it does not contain a string, a null string ("") is returned.

Cell attribute functions

CELL (attribute, range) returns attribute information about the **upper left-hand cell** in range. The value for attribute must be enclosed in quotation marks: it is not case sensitive.

CELLPOINTER (attribute) returns attribute information like the CELL function, but about the cell which was current at the last recalculation.

You can use these values of attribute:

Attribute	Value returned
ADDRESS	absolute cell address
ROW	from 1 to 8192 - row number
COL	from 1 to 256 - column number
CONTENTS	contents of cell, e.g. text or number string
TYPE	data type: b (blank), v (number or formula) or 1 (text)
PREFIX	text prefix: ' (left-aligned), " (right-aligned), ^ (centre-aligned), \ (repeated) or blank if no prefix.
PROTECT	1 if cell is protected, 0 if unprotected
WIDTH	from 1 to 99 - column width
FORMAT	numeric format: F0 to F15 - fixed, 0 to 15 decimal places S0 to S15 - scientific, 0 to 15 decimal places C0 to C15 - currency, 0 to 15 decimal places ,0 to ,15 - comma, 0 to 15 decimal places P0 to P15 - percent, 0 to 15 decimal places G, T, H, + - general, text (Show formulae), hidden and bargraph D1 to D5 - date formats DD-MMM-YY, DD-MMM, MMM-YY Long International and Short International D6 to D9 - time formats HH:MM:SS AM/PM, HH:MM AM/PM. Long International and Short International


For example, if clients is the name of range A1:C3,
=CELL("Address",clients) returns A1.

LOOKUP functions

HLOOKUP (*x*, *range*, *offset*) looks along the top row of a range until it finds the value *x*, then looks down the column to the cell which is *offset* number of rows below, and returns the value of that cell.

The first row of the range must contain values in ascending order with no duplicates.

HLOOKUP returns **ERR** if *x* is less than the value in the first cell of the top row.

 HLOOKUP in fact finds the last cell which is less than or equal to *x*. The effect is that each column covers a range of numbers. For example, if the values in the top row of the range are 1, 2 and 3, HLOOKUP will look in the first column when *x* is from 1 to 1.99999..., in the second column when *x* is from 2 to 2.99999..., and in the third column when *x* is 3 or above.

VLOOKUP (*x*, *range*, *offset*) does the same as HLOOKUP, except that it tracks down and then looks across. It locates the last cell in the first column of *range* which is less than or equal to *x*. It then looks across to the cell *offset* number of columns to the right, and returns the value of that cell.

The first column of *range* must contain values in ascending order with no duplicates.

String functions

In these functions, *string* may be either a series of characters enclosed in quotation marks, e.g. "hello", or a formula which results in a string, for example =B2 where cell B2 contains a string.

Editing strings

You can join strings together by 'concatenating' (adding) them. For example, the formula ="help"&"mate" would return the string value helpmate.

You can also use comparison operators to compare the character codes of the first characters in the strings, as in the 'Sort' option. For example, =A1<B1 would return 1 if A1 were "Brown" and B1 were "Smithson" since the character code of 'B' is less than that of 'S'.

EXACT (*str1*, *str2*) returns 1.0 ("true") if *str1* is exactly the same as *str2*, otherwise returns 0.0 ("false").

EXACT is case-sensitive and notes accents, whereas the = operator treats upper and lower case as the same, and ignores accents.

FIND (*searchstr*, *str*, *start_pos*) returns the position in *str* where *searchstr* starts. The search begins from *start_pos* in *str*. Make *start_pos* 0 to search from the first character of *str*. The number returned is 0 for the first character in *str*, 1 for the second and so on.

If *searchstr* isn't found, or if *start_pos* is negative, **ERR** is returned.

LEFT (*str*, *n*) returns a string comprising the first *n* characters of *str*.

LENGTH (*str*) returns the number of characters in *str*.

LOWER (*str*) returns *str* entirely in lower case.

MID (*str*, *start_pos*, *n*) returns a string comprising *n* characters taken from *start_pos* in *str*. For *start_pos*, 0 is the first character, 1 the second and so on.

PROPER (*str*) returns *str* with "Proper Capitalisation" - i.e. just the first letter of each word in upper case.

REPEAT (*str*, *n*) returns *str* repeated *n* times.

REPLACE (*str*, *start_pos*, *n*, *newstr*) removes *n* characters from *str*, starting from *start_pos*. Then inserts *newstr* at *start_pos*, and returns the resulting string. *start_pos* can be immediately after the end of *str*, in which case *newstr* is simply added to the end of *str*. (*n* is ignored.)

RIGHT (*str*, *n*) returns a string comprising the last *n* characters of *str*.

TRIM (*str*) returns *str* with all leading and trailing spaces removed, and consecutive spaces replaced by single spaces.

UPPER (*str*) returns *str* entirely in upper case.

Strings and numbers

AT (*str*) returns the contents of the cell at the reference given by the string *str* (e.g. AT("B2")).

CHAR (*x*) returns the character with the character code *x*, or ERR if *x* is not between 1 and 255.

CODE (*str*) returns the character code of the **first** character in *str*.

STRING (*x*, *n*) returns the number *x* as a string, to *n* decimal places. This uses 'Fixed' format, and rounds if necessary.

VALUE (*str*) returns *str* converted to a number, *str* may specify a decimal or scientific number, or may include a fraction - for example "0.34", "4.2E3" or "91 3/4". You can also use a cell reference, e.g. =VALUE(B2).

Returns 0 for blank cells and null strings. Leading and trailing spaces are ignored.

Identifying strings from numbers

ISNUMBER (*x*) returns 1.0 if *x* is a number or a formula returning a number. Otherwise returns zero.

ISSTRING (*x*) returns 1.0 if *x* is a string (even a null string) or a formula returning a string. Otherwise returns zero.

Statistical and database functions

The statistical functions perform calculations on lists of values. A *list* is a variable number of parameters, where each parameter is either a single value or cell reference, or a range reference or name.

In a list, empty cells are ignored if they are part of a range - in other words they are taken to contain the value zero and do **not** add one to any count of cells. But the individual reference of a blank **cell** does count.

Statistical functions

AVG (*list*) returns the average of the values in *list*.

COUNT (*list*) returns the count of the items in *list*.

MAX (*list*) returns the maximum value in *list*.

MIN (*list*) returns the minimum value in *list*.

SUM (*list*) returns the sum of the values in *list*.

Standard deviation and variance

These are measures of the extent to which individual values in a list vary from the mean (average) of the list. The less the variance or standard deviation, the closer values are to the average, STD returns a result in the same units as the input values, while VAR=STD².

STD (*list*) returns the standard deviation of the values in *list*.



The STD function uses the formula:

$$\text{standard deviation} = \sqrt{\Sigma(V_i - \text{AVG})^2 / n}$$

where *n* is the number of items in *list*, **AVG** the average of *list* and V_i the *i*th item in *list*. This is the biased method. To calculate the unbiased standard deviation, use the function like this:

$$=\text{STD}(\text{list}) * \text{SQRT}(\text{COUNT}(\text{list}) / \text{COUNT}(\text{list}-1))$$

VAR (*list*) returns the variance of the values in *list*.



The VAR function uses the formula:

$$\text{variance} = \Sigma(V_i - \text{AVG})^2 / n$$

where *n* is the number of items in *list*, **AVG** the average of *list* and V_i the *i*th item in *list*. This uses the biased method. To calculate the unbiased variance, use the function like this:

$$=\text{COUNT}(\text{list}) / \text{VAR}(\text{list}) * \text{COUNT}(\text{list}-1)$$

Database statistical functions

DAVG (*range1*, *column*, *range2*)

DCOUNT (*range1*, *column*, *range2*)

DMAX (*range1*, *column*, *range2*)

DMIN (*range1*, *column*, *range2*)

DSTD (*range1*, *column*, *range2*)


DSUM (*range1*, *column*, *range2*)

DVAR (*range1*, *column*, *range2*)

These perform the same calculations as the statistical functions **AVG**, **COUNT** and so on. However, they get the values to use from cells in a specified *field* (*column*) of those records in a database range *range1* which match criteria in another range *range2*.

Column 0 is the leftmost field in the database range, column 1 the one to the right of that, and so on.

Although you can use any two ranges for the database and criteria, you would normally use `database` and `criterion`, as set by 'Set database' and 'Set criteria'.

 You cannot use these functions in a criterion range.

Worksheet size

The Spreadsheet has been designed to use memory efficiently, for example by "formula sharing", when one formula is used in more than one cell.


If the worksheet reaches its maximum size, and you try to add more data, a 'Worksheet too big' message will be shown. You will also find this if you try to open a worksheet file from a different Spreadsheet program, and the file is already too big.

Memory usage

With very large files some situations instead cause a 'No system memory' message to be displayed. This happens because for each open file the Spreadsheet can only use 64k of memory, for the information from the file itself, the clipboard, "undo" information, and the memory the Spreadsheet itself needs to get started. Go to the System screen and press the \blacklozenge key to see whether the internal memory is really full.

To minimise the memory used by a single worksheet:

- Disabling 'Undo' can save memory. For example, if you copy and then paste some cells, the Spreadsheet uses memory to remember what the worksheet was like before you did the paste. (Again, no formula sharing is used here.) If you are **confident** that you don't need the security of 'Undo', turn it off: use 'Set preferences' on the 'Special' menu, and set 'Keep undo buffer' to 'No'.
- If you delete or copy a large range of cells, considerable memory is used to retain the cells on the clipboard even after you have pasted the cells back into the grid. (Note also that there is no formula sharing on the clipboard.) To clear the clipboard, move to an empty cell and select 'Copy'.
- Get rid of cells which contain only format or alignment information. Highlight a range (or all of the worksheet), and use 'Clear' from the 'Range' menu. Set 'Formats' to 'Yes', **and all other lines to 'No'**. (Cells with values or formulae in them will be left exactly as they are.)

 You can also get rid of unnecessary formulae - for example, `=34*78` can be entered as just `34*78`. Also, each graph that you define takes up a certain amount of memory. Use the 'Delete graph' option on the 'Graphs' to delete any unwanted graphs.

9

The Sound recorder

The Series 3a sound recording application lets you record sound as files on the 'Internal' disk (or on a Ram SSD), and play the files back. The sound recorder plays sound files to the speaker on the underside of the Series 3a, and records from the microphone behind the small hole between the 'B' SSD door and the bottom right corner of the keyboard.

You can use recorded sounds as alarm sounds when you set an alarm in the 'Time' or 'Agenda' application.

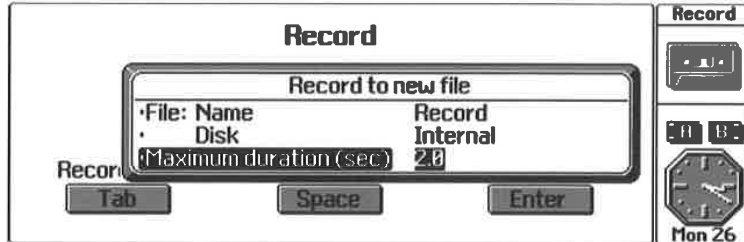
The files are 8000 bytes long per second of recorded sound. Play back of sound (especially loud sound) does use more battery power than normal.

Using the 'Record' application

The 'Record' icon initially appears towards the right end of the icons in the System screen, between 'Sheet' and 'Program'.

1. Move the cursor to the 'Record' icon and press Enter. Alternatively, hold down the Control key and press the 'Time' button; this keypress is pre-assigned to take you to the 'Record' application.

The first time you use it, 'Record' displays the following screen;



The dialog is already displayed, asking you for a filename for the sound you are about to record.

The status window is always displayed on the 'Record' screen.

2. The dialog suggests the filename "Record", on the internal disk. For the moment you may wish to use this filename. If not, type a different filename for the sound and select the disk on which it is to be created. **Note: you cannot record directly onto Flash SSDs. If you want to record directly onto an SSD, you must use a Ram SSD.**

When choosing names for sound files, don't use the names of the built-in alarm sounds, like "rings" and "chimes".

Sound files are automatically given the *file extension* .WVE, so you do not need to enter a file extension.

3. The dialog also asks for the maximum duration of the sound recording (in seconds). This is to try to avoid using up all of your internal memory. The dialog suggests a maximum duration of two seconds. A recording of this length will take up 16k of memory. Again, you may wish to leave this setting while experimenting with sound recording.

As a precaution, 'Record' does not allow you to use up all of the free memory when recording a sound, and will always leave a small amount of memory free.

4. Press Enter to complete the dialog.

5. Now get ready to make the sound. Position the microphone near the source of the sound. When you're ready, press Space, and make the sound.

You may need to record the sound a number of times to see how close the microphone needs to be to the source of the sound; start with it fairly close.

After two seconds the recording stops. The file's name and length (in seconds and in terms of disk space used) is displayed in bold at the top of the screen.

- Press Enter to play the sound back.
- If you want to try again, press Space to record over the same file.
- If you're happy with the sound and you want to record another one, either select the 'New file' option on the 'File' menu, or press Tab. (Pressing Tab automatically generates a suitable new filename.)

When you have more than one file you can select the file you want to play back by using the 'Open file' option on the 'File' menu (or by selecting the file from the System screen).

The 'Set preferences' option on the 'Special' menu sets the default disk and default duration suggested by the 'Record to new file' dialog when you record. It also sets the volume of sounds played back in the 'Record' application.

You cannot record directly onto Flash SSDs. You can, however, copy (and perhaps rename) sound files that you have created on the internal disk onto Flash SSDs, and then play them back. (Copying and renaming files is described under 'File management' in the 'Files and disks' chapter.)

Recording alarm sounds

When you set an alarm in the 'Time' or 'Agenda' application, the 'Set alarm' dialog checks your disks for sound files, and will offer them on the 'Sound' line.

If, for some reason, the selected 'Sound' file is no longer present when the alarm actually rings, the "Rings" sound is used instead.


Alarms are always played three times, with increasing volume, at 15 second intervals. (If the alarm is still not acknowledged, this whole sequence is repeated after one minute, and again at increasing intervals.) If you record a short sound file for use as an alarm, you may wish to set the file so that the sound repeats. The 'Record' application has two options on the 'Repeats' menu to do this:

- The 'Adjust for alarm' option sets the sound to repeat as often as possible in a 15 second period. It also sets the amount of *trailing silence* (the gap after each repeat) to use in order to take the total time to around 15 seconds.

If the sound is already set to repeat 2 or more times, and these repeats can fit within 15 seconds, 'Adjust for alarm' will only change the trailing silence, not the number of repeats. You can use this feature to customise alarm sounds quickly.

- The 'Set repeat' option lets you set the number of repeats and the trailing silence to any values you wish.


 Setting repeats and/or trailing silence does **not** increase the length of the file.

 The 'Record' application takes into account the short time it must take between each repeat, so the 'Total' length displayed may not exactly match the other values displayed.

Recording other sounds

If you want to record sounds that you do not wish to use for alarms (such as voice messages), you may wish to keep their files in a different place (directory) on the disk, so that they are not offered as "alarm sounds" when you set alarms. To do this, you need to make a new *list* for the 'Record' application in the System screen to be used for these sound files:

1. Move the highlight in the System screen to the "Record" application, and select the 'Create new list' option on the 'Special' menu.
2. Type a new directory name on the 'Directory for files' line. You might, for example, type `voice`. You can use up to eight characters for the directory name. The name must start with a letter, not a number.

 If you're used to directories, note that the above example would cause these voice files to be stored in a `\wve\voice` directory.

3. The 'Save list as' line asks for the name to give the file in which the information about the new list is to be stored. (You'll then be able to remove and install this file, just like an application.) Enter a suitable file name (such as voice), again up to eight characters long. You do not need to enter a file extension.
4. Press Enter to complete this dialog, and press Enter again when the confirmation dialog is displayed.

The new list will appear in the System screen beneath its own 'Record' icon next to the original 'Record' list.

If you wish, you can set a keypress to turn the Series 3a on (if necessary) and move to the 'Record' application using the new list of sound files:

1. Select the 'Assign button' option on the 'Apps' menu on the System screen.
2. Select the 'Button' - Control-Sheet, perhaps - and press Enter.


Recording voice messages

If you want to record voice messages rather than alarm sounds, you may find it better to use the Tab key to start recording each new message than the 'New file' option. When you use Tab the filename for each message is automatically generated, thus saving you the bother of entering one each time.

You may also wish to use the 'Set preferences' option on the 'Special' menu to set a long default duration. You can then record messages of any length - just press Esc at the end of each message, and the file will be saved.

Battery power and sound playback

If you see a 'Batteries too low for digital audio' message when playing a sound, the batteries are too low at that time to play the sound. The louder and longer a sound is, the more likely you are to encounter this message.

-  Alkaline batteries in particular can recover voltage slightly, and you may find later that you can still play short or quiet sounds for a while.

10

Dialling

Modern phone systems understand *DTMF* signals - the sounds you hear when dialling from a push-button phone. The Series 3a can generate *DTMF* signals, and you can use it to dial numbers from most phones.

The Series 3a can dial numbers directly from any database file, such as an address book, and from any Agenda file. As long as you take a little care in the way you enter international numbers, the Series 3a will generate the correct code for international calls, wherever you set your current 'home city'.

All you have to do is find the number that you wish to dial and press the Dial key.

NOTE: Phone systems do vary. *DTMF* dialling cannot be guaranteed to work on all phones.

Setting up for dialling

Move to the System screen, and select the 'Dialling' option on the 'Control' menu:



- The 'Dial out code' line lets you enter the code you would use to get an outside line on a private exchange - for example, to dial out front a workplace or other environment. When in future you dial a number, you will be given the option of dialling it directly or dialling this code at the beginning.


The 'Dial out code' is initially set to '9, '. You can enter up to five characters. The comma represents a short pause, which is often required when requesting an outside line.

- The 'Default country' line of the dialog sets the *default dial country* - the country for ordinary (non-international) phone numbers in your address book. This should in general be the same as your usual home country.

It is important to set this correctly, so that if you travel abroad, international dialling codes can be supplied when you dial. If you need to change it, select the country name as you would when using World.

- The other three lines of this dialog let you customise tone dialling. 'Tone time' and 'Delay time' are the length of each tone and the length of the gap between each tone; 'Pause time' is the length of the pause caused by a comma, as described above. All three are specified in $\frac{1}{32}$ s of a second.

You may decide not to change these three values at all. However, you may find you can obtain quicker connections by reducing the 'Tone time' or 'Delay time' settings.

 You may find that increasing 'Tone time' and 'Delay time' improves the chance of success over less-than-perfect connections. If you have no problems with dialling, though, you may like to reduce these values, to reduce the time taken by DTMF dialling.

Phone numbers in your own country

Phone numbers in your own country begin with a *national prefix* (or *STD prefix*) and an *area code*:

- Sometimes the national prefix is thought of as part of the area code. In the UK number 0636-999111, for example, 0636 is the area code, and it includes the national prefix 0.
- Sometimes the two are thought of as separate. In the USA number 1-415-000-9999, the initial 1 is the national prefix, and 415 is the area code.

Entering numbers for your own country in the Database and Agenda

You do need to enter the area code, with or without the national prefix, even for local numbers. Using the area code, you can dial from anywhere, including the local area itself.

Use a space or hyphen to separate the area code from the subscriber's number, as in the previous examples. You can also use slash characters (/) and brackets in the number. Numbers which have none of these characters - just the digits themselves- are treated as work extensions, or similar codes, and are always dialled exactly as they appear.

 A dot (full stop) terminates an entry, i.e. digits after it will be ignored.

Dialling in the USA

If your home city is in the USA, then when you dial from an address book the digit 1 (the national prefix) will be added at the start of all numbers in the USA. This generates the correct number for most calls around the country. The number to be dialled can be edited, though, so you can always remove an unwanted 1 (and/or any area code, if you so wish) by pressing Shift-Delete.

If most of your calls are local and you do not want the 1 to be added in this way, find a city in the USA in the World application, use the 'Update country' option and remove the national prefix.

Entering international numbers


If you want to be able to travel abroad and still dial numbers from the Series 3a, enter international numbers in one of two ways:

- If you know the country code, you can begin the number with + , then the country code. You can enter the Swedish number 031-999999 as +46-31-999999 , or +46-(0)31-999999 . (The country code for Sweden is 46. In the area code 031, the 0 is the national prefix. You don't have to enter it, but if you do **it must be in brackets.**)
- If you do not know the country code, move the cursor to the end of the number, and press Control-Shift-Psion-Help (Control-Shift-Dial) to display the 'Append country' dialog. Select the country and press Enter. The country name will appear at the end of the number, between square brackets - for example: 031-999999 [Sweden] With this system the national prefix is optional.

The dial dialog for the above Swedish number would look like this:




The screenshot shows a software interface for dialing numbers. At the top, it displays 'Name: Bjorn Svensk' and 'Home: 31 999999 [Sweden]'. Below this is a 'Dial' dialog box with a text field containing 'Home: 004631999999' and four buttons: 'Cancel', 'Free Input', 'Dial', and 'Dial out'. To the right of the dial dialog is a 'Data' panel with a 'Find Add' button, 'A B' buttons, and a clock icon showing 'Mon 26'. At the bottom left, there is a 'Find:' field and a '4/4' indicator.

 You can, if you wish, type the square brackets and country name yourself, without using Control-Shift-Dial. Psion-9 and Psion-0 produce the left and right square bracket characters.

When dialling such a number from a different country, any national (STD) prefix is removed. The number to dial will begin with the international access code of your current home country, then the country code of the country you are dialling. For example, with the home city in the UK, the Swedish number would be dialled as 010-46-31-999999 . (010 is the international access code from the UK.)

Important: if you enter the international access code yourself, the number can only be dialled correctly while you stay in that country.

 A few very small countries share their dialling code with a nearby larger country. They are shown in World as if they were a city within the larger country, and you should use the name or dialling code of the larger country.

Entering numbers while abroad

If you go abroad, you should still enter numbers in **exactly** the same way. Numbers for your default dial country do **not** need the country code or name adding, even though you are abroad. All other numbers, **including those of the country you are in**, must have the country code or name.

You should change your home city when travelling, but **do not** change your default dial country. If you do, you will not be able to dial existing numbers correctly.

Extensions and similar numbers

Work extensions, or other codes, should be entered with no spaces or hyphens. They will then always be dialled exactly as they appear, and no checking of international codes will take place.

How phone numbers are marked in the Database

When you start entering an address book, some of the labels - Home , Work - and Fax - begin with a phone symbol. This is a special symbol, as it marks these labels as the titles for phone numbers.

When editing the labels of a database file, you can insert a phone symbol with the Shift-Psion-Help (Shift-Dial) keypress. The remainder of the label following the phone symbol is the title of this phone number.

You can even mark a line of the entry itself as a phone number, if it does not fit conveniently with the labels you are using. Again, press Shift-Psion-Help (Shift-Dial) while editing, to enter the phone symbol. You can follow this with a title for this phone number, if you wish; then enter the number itself.

Entering numbers in the Agenda

You can enter phone numbers in any Agenda entry. You don't need to insert a telephone symbol before the number to mark it as a phone number, unless the entry also contains other numbers, for example "Phone 3A's taxis ☎ 071 333 4444". To insert a phone symbol at the cursor position in an entry, use the Shift-Psion-Dial keypress.

Dialling from a Database or Agenda file

You can dial directly from the 'Find' screen in the Database or from any view in the Agenda.

Dialling from the Database

Find the entry which contains the phone number you wish to dial, then press Psion-Help (Dial). The 'Dial' dialog will appear, giving a list of all the phone numbers in the entry. If the number you want to dial is not shown, press Esc to remove the dialog and check that either its label or the line itself has a phone symbol. (It is also possible for a single entry to have too many phone numbers to be shown on the screen.)

If no phone numbers are found, a message to this effect is displayed.

If more than one line corresponds to a particular label with a phone symbol, each line will be taken as a separate phone number.

 The same phone numbers are listed whether the labels are hidden or shown.

If the phone number ends with the name of a country which the Series 3a does not recognise, a 'Number is not valid' message is displayed, and you cannot move the highlight to that line. The same message is displayed if a number would be more than 24 digits long.

Dialling from the Agenda

Move to the entry which contains the phone number and press the Psion-Help (Dial) keypress. The 'Dial' dialog will appear showing the phone number in the entry next to a phone symbol.

The 'Dial' dialog produced in the Agenda works in exactly the same way as in the Database, as described above.

Dialling the number

1. If the 'Dial' dialog offers more than one number, as it may in the Database, move the cursor to the one to dial.
2. If you need to, you can edit the phone number on the highlighted line. A cursor is shown at the start of the number, and you can edit it like any other text on the Series 3a. Any characters you enter which cannot be dialled will be ignored when you dial. (A comma generates a pause.)
3. Hold the mouthpiece over the Series 3a. In noisy conditions, it may be better to hold the Series 3a with the speaker (on the underside of the Series 3a) a short distance above the mouthpiece.
4. Press Tab to dial the number directly. At work, you may need to press Enter, to dial the number with the 'dial out' code (set with the 'Dialling' option in the System screen) at the beginning.


Dialling further digits

If you need to dial further digits, such as when dialling automatic tone-controlled systems, press Menu to bring up the 'Free-form dialling' dialog. Digits are then dialled as you type them. You can press Tab to redial them, if necessary. When you've finished with *free-form dialling*, press Esc.

Dialling problems

If dialling fails, try altering the distance between mouthpiece and speaker. If this still fails, you can try increasing the 'tone time' and 'delay time', in the 'Dialling' option on the System screen - the longer you set them for, the better the chance of tone dialling succeeding when the phone connection is poor.

Remember that phone systems do vary, and DTMF dialling cannot be guaranteed to work on all phones.

 You may wish to dial a local number without its area code (if it won't work with one in your country, or if it costs more to use the area code, or if there is a local area code you can use instead). To do this, enter the number twice in a Database entry, once with the area code and once without it (but with any local area code). Press Shift-Enter to insert the extra line. Then, when you dial, you'll be given the choice of the two versions of the number. **Make sure that there are no spaces or hyphens in the version without the area code** - otherwise, a national prefix will be added when you dial. (Alternatively, put the area code in the entry, and when dialling use Shift-Delete in the 'Dial' dialog to delete it from the start of the number.)

If you travel abroad

Set your home city to your new location, or to that of a nearby city in the same country. As long as the local phone system understands *DTMF* signals, dialling should be possible.

If you have followed the guidelines in this chapter for entering phone numbers, the Series 3a will, wherever possible, provide the correct code to dial. If, for any reason, it cannot - one or two countries have incomplete international information - you can still edit the number to be dialled, before pressing Tab or Enter.

Free-form dialling

Whatever you're doing with the Series 3a, you can almost always press Control-Dial (Control-Psion-Help) to display the free-form dialler.

As explained beforehand, digits are now dialled as you type them. The digits you type are displayed on the screen, and you can press Tab to redial them, if necessary.

 Very occasionally, such as when an alarm is being shown, free-form dialling is not possible.

11

Printing

You can print text from the Word Processor, Spreadsheet, Agenda, Database and Program editor. All have identical 'Print setup' options to specify the page layout you wish to use - headers, footers, margins and so on. All also have 'Print preview' options.

The Word Processor is a special case, with advanced printer support in its design.

There are three areas to consider before printing:

- **Setting up the connection to the printer.**
- **Choosing the *printer driver* for the Series 3a to use.**
- **Designing the page layout.**

Printing does not hold you up: you can start printing one open file, then carry on using the Series 3a, while the printing is in progress.

Setting up the connection

Connecting the lead

There are two different types of physical connection to printers. Most printers have a *parallel* connector, a few have a *serial* connector. (Some have both connectors.)

Psion supply two types of 3 Link leads. The parallel 3 Link lead connects directly to parallel printers. The serial 3 Link lead is primarily for connection to other computers, and there are versions for the IBM PC and the Apple Macintosh. An adaptor is available which converts both PC and Macintosh leads for connection to a serial printer.


If you have a serial 3 Link, and a PC which is connected to a printer - even a networked printer - you can connect the Series 3a to the PC with 3 Link, then print from the Series 3a to the printer. You do this by running the MCPRINT program supplied on the 3 Link disk. See the documentation on the 3 Link disk for more information.

Both parallel and serial 3 Link leads plug into the *expansion socket* on the left side of the Series 3a.

Setting the communication

To set the Series 3a to communicate in the right way with your printer, select the 'Printer' option on the 'Control' menu **in the System screen**. Set the first line of the dialog to 'Parallel' or 'Serial', according to your printer type.

If you set 'Parallel', no other settings apply. If you set 'Serial', you may need to tab-out the 'Serial characteristics' and 'Serial handshaking' subdialogs. However, many serial printers will use the settings as they are; **if in doubt, check your printer manual.**

 *Handshaking* is the method used to stop and start the flow of information between the Series 3a and the printer. Most serial printers use either 'Xon/Xoff' handshaking, 'Dsr/Dtr' handshaking, or both. The Series 3a is initially set to use both, and this should work even if your printer is only using one of the two methods. If you have problems, you can try setting one or other of the two to 'Off'.

When you have finished with the 'Printer setup' dialog, press Enter to confirm the settings.

You don't have to return to the System screen to use this dialog. Every 'Print setup' option in the applications which print has a 'Printer device' line, which tabs out into the same dialog.

Printing to a file

You can print information to a file on disk, if you wish.

Select the 'Printer' option in the System screen, and set the 'Printer device' line in the dialog to 'File'. You can then set the 'File Name' and 'Disk' lines in the dialog, to set the name and location of the "print file" to create. Press Enter to confirm the settings in the dialog.

When you next print information, it will be saved in this file, instead of being printed. **Be sure to use the correct filename and location. If the file already exists, it will be overwritten without warning.**

Choosing the printer driver


Selecting the printer model

The Series 3a comes with *printer drivers* for various printer models. One of them, called 'General', allows you to print plain text to almost any printer which can accept plain text.

If you have one of the printer models (or a compatible model) for which a printer driver is supplied, you can print using any of its fonts and sizes which the printer driver supports. **Note that most printers can emulate more standard models, such as Epsos or the IBM Proprinter;** you may need to set a DIP switch, or use the printer's control panel, to make your printer do this. Check your printer's manual if in doubt.

The Word Processor, Spreadsheet, Agenda and Database each have a 'Print setup' option on the 'Special' menu, in the dialog it displays, move the highlight to the 'Printer model' line, and press Tab. A 'Set printer' subdialog is shown; on the 'Select printer' line, select the printer driver to use for the current file. If you cannot find a suitable printer driver, select 'General'.

Other printer drivers may be available from Psion, or from other sources.

 You cannot enter printer codes by hand in the files you print. All of the font and layout settings are handled automatically by the applications and the printer drivers.

The 'General' printer driver

If no other drivers are suitable for your printer, select the 'General' printer driver in 'Print setup'. The Series 3a then has no special knowledge of your printer, but assumes that the printer font will be monospaced (not proportional), at 10 CPI (characters per inch), and with a height of 12 points, which is 6 LPI (lines per inch). Many printers use a font with these settings when you first turn them on; check with your printer manual if in doubt.

If your printer does not start with a font that uses these settings, you should set them, where possible, from the front panel of switches on the printer.

You can if you wish leave your printer set to some other font size. If it has a different width or is proportional, the left and right margins (word-wrapping) may not be handled correctly. If it is set to a different height, page breaks may not be at the correct places.

 When the 'General' printer driver is installed, the Word Processor will print spaces to implement layout features, such as centred text and tab positions.

Changing the printer driver

If you change your printer driver with the 'Printer setup' option to one which supports fewer fonts, then when you print with this driver, only the supported fonts will be used.

In the Word Processor, font settings are **not** changed when you change your printer driver (unless you change them yourself, with 'Style gallery' for example). When you change back to the original printer driver, you can print the document properly. Similarly, Spreadsheet print styles are **not** changed when you change your printer driver.

Choosing the font

Except in the Word Processor and the Spreadsheet, which have their own advanced font control, you can set the 'Default font' - the font to use for the printout. In the 'Print setup' dialog, tab-out the 'Printer model' line to display the 'Set printer' subdialog. Move to the 'Default font' line and press Tab; a 'Font' subdialog is displayed.

The fonts available depend on the printer driver you choose. The 'Font' subdialog lets you set any combination of bold, underline and italic for the Default font.

You cannot set the 'Default font' line when in the Word Processor - each style or emphasis can be set individually to any of the available fonts. For example:

- Select the 'Style Gallery' option on the 'Styles' menu.
- Press ←→ to select the style to set.
- Move the highlight to the 'Font' line, and press Tab.

The same 'Font' subdialog is shown. The only difference is that the final line, 'Print position' cannot in this case be changed.

Important: if you use the 'General' printer driver, you can still set font attributes - bold, underline, italic, and sometimes superscript and subscript - in the 'Default font' in an agenda or database, in styles in a Word Processor document, and in 'Font styles' in a worksheet. However, they will not appear on any printout - only normal text will be used.

Font sizes

Font sizes are specified in *points*. There are 72 points in an inch. Font sizes allow for a gap between lines of text. (In the Word Processor, you would usually set the *line spacing* to be the same as the font size.)

Character sets


The Series 3a uses the IBM Code Page 850 character set. Some printers use this character set; others use extended versions of the ASCII character set.

Code Page 850 and ASCII use the same characters for the decimal codes from 32 to 127. This includes the letters A-Z in upper and lower case, the digits 0-9 and most commonly used symbols. Some characters in the range 128 to 255 - foreign language characters, and various symbols - are different.

If you have one of the printer models supported by the Series 3a, and you use its printer driver, a suitable character set will be used. If there are differences between the character sets, the Series 3a will translate characters to the same (or nearest) character on the printer. However, if the printer supports more than one character set, you may need to set a DIP switch, or use its front panel, to set it to use the correct character set.

If you use the 'General' printer driver, and you try to print characters with codes between 128 and 255, some may not print out correctly on a printer which does not use the Code Page 850 character set.

The Code Page 850 character set is included in an appendix to this manual. Most printer manuals also include the printer's character set (or sets).

 If you have trouble printing the £ symbol, check your printer manual, and see if you can set the printer to use a character set which has the £ symbol as character 156 (hexadecimal 9C).

Setting the page layout

The first five lines of the 'Print setup' dialog in the Word Processor, Spreadsheet, Agenda and Database allow you to design aspects of the layout of information on the printed page. **Each line produces a subdialog when you press Tab.**

The 'Page size' subdialog

On the top line ('Page size'), set the size of the paper you are using. If you press Tab on this line, you can see which page sizes are supported.

If your paper size is not on this list, choose 'Custom' as the page size. You can then type the width and height of the paper.

The title of the 'Page size' dialog reminds you of the current "units" setting - inches or centimetres. You can set this either by tabbing out the 'Printer device' line of the 'Print setup' dialog, or with the 'Printer' option in the System screen.

If you set 'Orientation' to 'Landscape', the Series 3a will lay out the text as if the width and height of the paper have been swapped. Some printer drivers (especially for laser printers) send a code to the printer to instruct it to print in landscape orientation. In other cases, you may be able to use the control panel on the printer to set it to print like this, or simply feed the paper in sideways. However, some printers will not print in landscape orientation at all.

The 'Margins' subdialog

This allows you to set the margins to use on the paper. Information will only be printed on the area inside the margins.

If you try to set any individual margin to a value that is too large for the size of the paper, a message will inform you, and the 'Margins' subdialog will remain displayed.

If you set a combination of margins which is too great for the size of the paper you are using, an 'Invalid margins' message will be displayed when you press Enter.

Few printers can print right to the edge of the paper, so you should not normally set very small margins.

The 'Headers' and 'Footers' subdialogs

Headers and footers are printed in the top and bottom margins of each page. For example, you might use a header to print the title for the document at the top of every page, and a footer to print the page number at the bottom of every page.

Both subdialogs require the same information. On the 'Text' line, type the text that you want to print as the header or footer on every page. You can also use any of the following codes in the 'Text' line to insert particular pieces of information in the header or footer:

Code	Inserts
%F	the name of the document file
%D	the current date
%T	the current time
%P	the current page number (1,2, 3...)
%%	a single % character

When setting up headers and footers in the Word Processor and Spreadsheet, you can also use %M, to insert the last page number. For example, if you use Page %P of %M as the footer, then a three-page printout would have Page 1 of 3, Page 2 of 3 and Page 3 of 3 as the footers on the three pages.

You can change the position of the header or footer on the page using the 'Alignment' line:


- 'Left/'Right': positions the text at the left/right margin.
- 'Centred': centres the text between the two margins.
- 'Two column': is used for text that is in two parts, separated by a Tab. The first part is printed on the left, and the second on the right.
- 'Three column': is used for text in three parts, each separated by a Tab. The first part is printed on the left, the second in the centre, and the third on the right.

The 'On first page' line lets you turn off the header and/or footer on the first page - for example, for a title page in a Word Processor document.

The 'Font' line lets you set the font for the header or footer.

For a header, the 'Vertical offset' is the distance from the bottom of the header text to the bottom edge of the top margin. For a footer it is the distance from the bottom of the footer text to the top edge of the bottom margin (which therefore includes the height of the text). 'Vertical offset' should be specified in inches or centimetres, according to your current 'Units' setting.

The larger the vertical offset, the closer the header/footer will be to the edge of the page.


 The 'Word Processor' chapter includes an example of using a header to produce headed notepaper.

The 'Paging control' subdialog

This controls how page numbers appear (if you use them in headers or footers), and offers *widows and orphans* control of page ends.

If you use %P in a header or footer, you can set the number of the first page of the document, and the style of the page numbers - 1, 2, 3, or i, ii, iii, or I, II, III. The last two use Roman numerals.

The 'Allow widows/orphans' line is mainly for Word Processor documents, which are based around paragraphs. The terms *widows* and *orphans* describe the first or last line of a paragraph being printed on a different page to the rest of the paragraph. This looks a little strange, so 'Allow widows/orphans' is initially set to 'No'. Set it to 'Yes', if you want to allow widows and orphans to occur on your printed pages.

 If, in the Word Processor, a style has 'Keep together' set (in the 'Spacing' subdialog), paragraphs using this style cannot be split over a page end at all, and widows and orphans cannot occur in them.

Printing from the Word Processor

Spacing and positioning paragraphs

You can set the spacing and positioning of a paragraph (or highlighted paragraphs) with the 'Spacing' option on the 'Paragraphs' menu. To change **all** paragraphs which use a particular style, use the 'Style gallery' option on the 'Styles' menu, and tab-out its 'Spacing' subdialog.

- 'Line spacing' is the height required for each line of text. **It takes effect when you print, but is not reflected in the screen display.**

Vertical spacing, like font sizes, is specified in *points*. One point is $\frac{1}{72}$ ", so:

Lines per inch	Equivalent line spacing (in points)
2	12
8	9
9	8

Important: The line spacing should always be at least as big as the font size for this style, otherwise lines could overlap when you print. (The font size already allows for a small gap between lines of printed text.) For example, for a 12 point font size you would typically set a 12, 13 or 14 point line spacing.

- 'Space above' and 'Space below' can be used to set **extra** vertical gaps above and below this paragraph for printing. Initially, 'Space above' for Body Text is set to zero, while 'Space below' is set to the same value as the line spacing. **This has the effect of printing a blank line after each paragraph.**

If you prefer, you could set 'Space below' to 0, and enter blank lines between paragraphs (by pressing Enter twice). You can then see the gaps between paragraphs on the screen. However, you will have no fine control over inter-paragraph spacing, and blank lines may get printed at the tops of pages.


Controlling page breaks


The other three settings in the 'Spacing' dialog are for controlling page breaks:

- 'Keep together': if set to 'Yes' a paragraph will never be split across two pages. If there is not enough room for it at the bottom of a page, a new page will be started. You might set this to 'Yes' for a paragraph consisting of a number of lines that end with Shift-Enter - a table, for instance.
- 'Keep with next': if set to 'Yes', a paragraph of this style must be printed on the same page as the paragraph which follows it. For example, you might use this setting for heading styles, so that your headings don't end up being printed "alone" at the bottom of a page.
- 'Start new page': if set to 'Yes', a paragraph of this style will always appear at the top of a new page. **Use this setting to force the start of a new page.**

Displaying page breaks

The 'Pagate' option on the 'Search' menu works out where each page will end if the current document is printed, and displays a dotted line across the screen at each position. This takes all of your current settings into account - font sizes, margins, line spacing, styles which force a new page, and so on. 'Pagate' displays a message telling you the number of pages needed to print your document:

<p>This 3-line paragraph uses left alignment, which has a ragged left edge. You might use this in preference to justified text.</p>	<p>Word ◆ Normal Outline</p> <p>⌂ B</p>  <p>3 Pages</p>
<p>.....</p> <p>This example shows you what page breaks look like on the screen. As you can see, a dotted line appears to show you where one page ends and another begins.</p>	

 If a page break occurs within a paragraph, and the document wraps at the screen edge, the position of the page break can only be shown approximately.

Page break positions are not updated automatically. Any time you wish to see where they would occur in the printed document, select the 'Paginate' option.


The 'Jump to page' option on the 'Search' menu will also paginate the document, if necessary, before asking for the page to go to.

Previewing line ends and page ends


Before you print a document, you can **if you wish** see on the screen how line ends and page ends will appear:

1. Select the 'Paginate' option, to show where each page will end.
2. Select the 'Use printer layout' option on the 'Word' menu.

New lines are now started only where they will start on the printout, and all page breaks are shown at exactly the correct place. If you've used Tabs to align columns of information, they are accurately shown, so that you can check the alignment of the information.


 Printer layout does not accurately show the position of centred or right-aligned text.

When selected, the 'Use printer layout' option changes to 'Use screen layout': select this option to return to normal word-wrapping at the screen edge.

 For further information about previewing, see the notes on 'Print preview' towards the end of this chapter.

The 'Print' option

When the document is laid out as you wish it to be printed, select the 'Print' option on the 'Special' menu. A 'Print' dialog is shown, like this:

<p>This 3-line paragraph uses left alignment, which has a ragged left edge. You might use this in preference to justified text.</p> <p>.....</p> <p>This example shows you what page breaks look like on the screen. As you can see, a dotted line appears to show you where one page ends and another begins.</p>	<p>Word ◆ Normal Outline</p> <p>⌂ B</p>  <p>Mon 26</p>
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p style="text-align: center;">Print</p> <p>Whole document <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Pages 1-3</p> <p>Copies 1</p> </div>	

If you set the 'Whole document' line to 'No', you can set a page range to be printed. You can also set the number of copies to print.

When you press Enter to complete the dialog, the printing begins. You can carry on using your Series 3a for other things while the printing is in progress.

Do not unplug the lead connecting your Series 3a to the printer or PC, open either of the SSD doors or turn your Series 3a off while printing.

If you see a message such as 'Device does not exist', check that you have used the 'Print setup' option to set the destination of the print, and check that the relevant cable is firmly plugged in.

Preferred settings

You can give new files your preferred 'Print setup' settings automatically, by creating a *default template*. (See the 'Word Processor' chapter for more details.)

If you create a new document with the 'New file' option in the Word Processor and specify the name of a template file to use, then the new document will inherit the 'Print setup' settings from the template file.

Whenever a document is saved, its current 'Print setup' settings are saved as part of the file.

Printing an outline

You can display an outline or document summary on the screen by using the 'Outline' option on the 'Special' menu. When an outline is shown, selecting the 'Print' option will print the outline, not the whole document.

If the Word Processor is currently showing an outline, the title of the 'Print' dialog changes to remind you that the outline version will be printed.


Printing Tabs

Instead of printing tabs as 'tab' characters (character 9 in the ASCII / Code Page 850 character sets), the Word Processor tells the printer to move by the correct amount, according to the Tab positions for a given style. For the 'General' printer driver, the Word Processor uses spaces to set the positions.

Printing from the Agenda

Before printing, you must have the Series 3a properly connected to a printer, as described earlier in this chapter.

Use the 'Print setup' option on the Agenda's 'Special' menu, also described earlier, to set the font to use and to control the layout of the printed page.

 If you frequently print from your Agenda, you may wish to include today's date (ie the letters %D) in the header. You can then distinguish the most up-to-date copy.

The 'Print' option

The 'Print' option on the 'Special' menu lets you print part or all of an agenda. In the Anniversary and To-do views 'Print' only prints anniversary and to-do entries. In other views all entry types are printed. **You can also use 'Find' to list more selective groups of entries, and then print them.**

The printed entries have a similar appearance to the List view; each entry starts on a new line and word-wraps to the width of the paper. Timed entries have their times neatly aligned. Most special symbols, such as the memo symbol, are not printed. Crossed out entries will only be printed as crossed out if your printer driver supports this. Crossed out entries are marked with a - - on the printout.

You can choose to print a range of entries from today forwards, until today, for this month, last month, this year and last year, or between specific dates.


Do not unplug the lead connecting your Series 3a to the printer or PC, open either of the SSD doors or turn your Series 3a off while printing.

Printing from the Day, Week, Year and List views


 It is a good idea to use 'Print preview' first, as the Agenda may produce very long printouts because of repeating entries.

To print all or part of your Agenda from these views:

1. Select the 'Print' option on the 'Special' menu.
2. Select the 'Range of entries' that you want to print, or type your own 'Start date' and 'End date'. You can also set 'Entry types' to exclude certain types of entry from the printout.
3. Set the 'Repeat entries' line. If you choose 'Show once only', repeating entries will be printed once; 'As normal' means they are printed as many times as they are shown in the view. (The 'Repeat entry' dialog lets you set this for each entry.)

 If you choose 'As normal', note that repeating entries or anniversaries could be printed many times, producing a very long printout. Remember that you can always stop a print in progress by pressing Esc.

4. Set the 'Crossed out entries' line to 'No' if you wish to exclude crossed out entries from the printout.
5. Press Enter to complete the dialog.

 To print a more specific list of entries, print from the 'Find' screen, as described later in this chapter.

Printing a list of anniversaries

To print a list of anniversary entries within a specified date range:

1. Move to the Anniversary view and select the 'Print' option.
2. Set the 'Range to print'. You can choose from 'This year' and 'By date'. If you set 'By date', set the 'Start month', 'Start year', 'End month' and 'End year' lines.
3. Set the 'Include crossed out entries' line to 'No' if you want to exclude crossed out entries from the printed list.
4. Press Enter and the selected entries will be printed.

Printing a list of to-dos

To print a list of all the to-do entries in all your to-do lists, or all the entries from a single list:

1. Move to the To-do view and select the 'Print' option.
2. Set the 'Range to print' line to 'All lists', 'One list', or 'Selection'. If you set 'One list', select the list to print on the 'List name' line. If you set 'Selection', you can set each individual list to 'Yes' or 'No', and print all the lists you want at the same time.
3. Set the 'Include crossed out entries' line to 'No' if you want to exclude crossed out entries from the printed list. (This is independent of whether they are shown on screen.)
4. Press Enter to complete the dialog.

If you chose to print 'All lists' they are printed in the order in which they appear in the To-do view. You can set this with the 'To-do list settings' option.

Information not printed

Display features such as duration and overlap bars, slot times, slot lines and so on are not printed.

Most special Series 3a symbols, for example the memo symbol, are not printed as they are not supported by most printers.

Memos are not printed. However, they can be printed separately.

Printing memos

Memos are not printed when you print an Agenda. However, **while editing a memo you can use the Memo editor's 'Print' option to print it.** Note that there is **one** set of 'Print setup' settings for all the memos in each Agenda file, so use the 'Print setup' option while editing any memo.

Printing from the 'Find' screen

You can use 'Find' to search for a set of entries that you want to print. For example, if you have marked all your job interviews with the letters `intv` in the entry text, you can use 'Find' and then 'Print' to print them all.

When you choose to print from the 'Find' dialog, no 'Print' dialog is displayed; the Series 3a always prints the same list of entries shown on the 'Find' screen.

-  If you want to exclude crossed out entries from the printed list, you must exclude them in the 'Find' dialog itself.

Printing from the Database

Before printing, you must have the Series 3a properly connected to a printer, as described earlier in this chapter.

In the Database, use the 'Print setup' option on the 'Special' menu, also described earlier in this chapter, to set the font to use and to control the layout of the printed page.

The 'Print' option

You must have the 'Find' screen displayed, not the 'Add', or 'Change' screens, if you want to print.

Use the 'Print' option on the 'Special' menu to print the current database.

The 'New page for each entry' line allows you to print each entry on a separate page.


The 'Entries' line setting controls which entries are printed:

- **Matching:** only those entries which match the current search clue are printed.
- **All:** all of the entries in the current database are printed.
- **Current:** Only the currently displayed entry is printed. (This setting is not available if 'Not found' is currently displayed on the 'Find' screen.)

If labels are currently shown on the screen, then they are printed alongside each entry. You can use the 'Show labels'/'Hide labels' option on the 'Special' menu to set this.

The Database does not show blank lines in an entry. If you wish, however, you can print them, by setting 'Show blank lines' in this dialog to 'Yes'.

If you set the 'Keep entries together' line to 'Yes', each entry will always be printed on one page, and will never split across two pages. If there is not enough room for it at the bottom of a page, it will be printed on a new page. This is the same sort of effect as the 'Keep together' setting in the Word Processor.

 Each line or group of lines corresponding to each label will act as a separate paragraph, as far as the 'Allow widows/orphans' print setting is concerned.

The telephone symbol is a special Series 3a character, and its character code would be interpreted differently by printers. For this reason, it cannot be included in information sent to a printer via 'Print' options. Instead, the printer driver translates it to some other suitable character or characters - usually a # symbol.

Do not unplug the lead connecting your Series 3a to the printer or PC, open either of the SSD doors or turn your Series 3a off while printing.

Printing from the Spreadsheet

Before printing, you must have the Series 3a properly connected to a printer, as described earlier in this chapter.

In the Spreadsheet, use the 'Print setup' option on the 'Special' menu, also described earlier in this chapter, to control the layout of the printed page.

To print the whole worksheet

If you want to print the whole worksheet, and you don't want to change the margins, fonts and so on, select the 'Print' option on the 'Special' menu. The Spreadsheet *paginates* - works out where any page breaks will be, given your current printer settings. Page breaks may be caused by the length or width of the worksheet - if the worksheet is too wide to fit on a page, it will be printed in strips, with as many columns in each strip as will fit.

The 'Print' dialog is displayed. To print the whole worksheet, just press Enter. If you wish, you can set which pages to print.

The 'Print formulae as' line of the dialog controls what should be printed for cells which contain formulae. If you set this to 'Formulae', the formulae themselves will be printed - just as if the cells had 'Show formulae' as their format.

Do not unplug the lead connecting your Series 3a to the printer or PC, open either of the SSD doors or turn your Series 3a off while printing.

To print a highlighted range

If you highlight a range before you select 'Print', you can set the top line of the 'Print' dialog to print the highlighted region instead of the whole worksheet.

If the highlight covers a large range, you can again set which pages to print.

Information not printed

The following are not printed:

- Grid lines
- Row/column headers (A B C ...and 1 2 3 ...)
- The contents of cells with 'Hidden' display format.

Page breaks

To see where the page breaks occur, select the 'Jump to page' option on the 'Search' menu. This paginates, if necessary, before producing the dialog. The first line of the dialog lets you choose between the whole worksheet, and any *print ranges* (explained later). Move down to the second line, and type a page number in the range suggested by the third line.

When you press Enter, the page you chose is highlighted, with the cell pointer in its top left cell.

"Vertical" printing

When printing wide worksheets on separate sheets of paper, you may prefer to print in 'landscape' orientation, where the sheet is "turned" through 90 degrees. This may allow you to use fewer pages when printing.

Select 'Print setup', tab-out the top line ('Page size'), and set 'Orientation' at the bottom of this dialog to 'Landscape'.

Some of the built-in printer drivers (e.g. for laser printers) may tell the printer automatically to print in landscape orientation. On other printers - wide-carriage dot matrix printers, for example - you may be able to feed the sheets in manually.

Advanced worksheet printing

You can define any number of *print ranges* - ranges to be printed. When you finally come to print, choose which of these ranges to use.

To define a print range, highlight the range to use, then select the 'Set print range' option on the 'Range' menu.

You can edit the suggested range, if necessary. You can even, if you wish, type in the name of a named range.

Press Enter to define the print range.

Unlike named ranges, you do not give each print range a separate name. A print range is referred to just by the range reference (or named range) you enter when defining it.

Changing or deleting print ranges

Select the 'Edit print range' option on the 'Range' menu. Use ←→ to select the print range you want to change. Move the highlight to the second line, and type the new range to use. Then press the Enter key.

To delete a print range, use the 'Delete print range' option on the 'Range' menu.

Font styles

There are four *font styles* which you can apply to cells in a similar way to applying styles in the Word Processor. These font styles are reflected on the screen, and are used when you print information from the Spreadsheet.

Initially, the four font styles are set to use the same font and size, with different combinations of bold and italic settings.

You can change these fonts, though, to be any size and style supported by the printer driver for your chosen 'Printer model'. The names of the font styles change to reflect the settings you give them.

Font (1) is special in that it applies to all cells which have not had a font style applied to them.

To change one of the font styles, select the 'Change styles' option on the 'View' menu. Select the font style to change, on the top line of the dialog. Then move down the dialog, and change the font, size and/or style for this font style. The fonts available to you are set by your choice of 'Printer model' in the 'Print setup' option.

To set a range to use a particular font style, highlight the range, then use the 'Format' option on the 'View' menu. The bottom line of this dialog lets you choose the font style to use for this range.

The screen display will reflect the style of the font - bold, underline, and so on. Note that some printer models may not print the style of the font - in particular, the 'General' printer driver.

Be careful if you apply a font style to a range. As this uses the 'Format' dialog, you will also set the display format for all numbers in the range.

Pagination and 'Jump to Page'

If you use the 'Jump to page' option when you have set print ranges, it first paginates *all* of them. You can then set the first line of the dialog to the print range required, and the second line to the page number in that print range.

Pagination does not take account of different font styles. When 'Jump to page' paginates it assumes the settings of font styles (1) throughout. If, for example, you were to use double-height characters in one of the four font styles, any rows which use it may need a blank row above them, to stop them overwriting previous rows.

There is no simple way to force page breaks. Change your print ranges if you wish to print different areas of the worksheet on different pages.

Print preview


If you wish, you can check that your printout is going to be the way you want **before** you print it. Select the 'Print preview' option on the 'Special' menu, in the Agenda, Database, Spreadsheet or Word Processor.

'Print preview' acts initially like the 'Print' dialog; it paginates, if necessary, then asks for the same "what to print" information as the 'Print' option.

'Print preview' then begins to work out and display how each printed page will look. It may take a little time to do this. (Lines which use small font sizes may be shown run together, ie all in one block.)

You can press Esc to leave 'Print preview', at any time. If you press the Menu key, you will see a new menu of 'Print preview' options:

- 'Print' prints the file, as it appears in 'Print preview'. You cannot print while 'Print preview' is still calculating the layout of the pages; for a long file, you may wish to press Esc to abandon the 'Print preview', and use the 'Print' option from the main menu.

 The Word Processor allows you to print more than one copy at a time; although 'Print preview' only shows the one copy, it will still print them all.

- 'Show margins' displays the current margins, as set in 'Print setup', as grey lines on the pages in Print Preview. As well as the left, right, top and bottom margins, it displays the 'Vertical offset' positions of the headers and footers.
- 'Pages to display' lets you show from one to four pages on the screen at a time. It also has a 'Facing pages' setting: if your final document is to be bound, use this setting to see each pair of left and right pages together.
- 'Jump to page' lets you see the preview for any page calculated so far.
- 'Exit preview' has the same effect as Esc.

When the calculations are finished, 'Print preview' displays the final number of pages in the top left-hand corner. Use the ←→ keys to move from page to page. (Pg Up and Pg Dn move to the previous/next set of screens; Home and End move to the first/last screen.) Again, you don't have to wait until 'Print preview' has finished calculating - at any time you can move between the pages calculated so far.

Each application initially takes its settings for 'Margins' and 'Pages to display' from those set on the 'Print preview' line of the 'Printer' dialog in the System screen. Thereafter each individual application remembers its own last-used settings, for as long as it has an open file.

 'Print preview' needs 3-4K of free memory to get started, and takes up around 400 bytes per previewed page.

Other printing information


Cancelling printing

You can cancel any printing in progress. Return to the application which is printing, if you have left it, then press the Esc key.

Settings for new files

When you create a new file, whether an agenda, database, word processor or worksheet file, the new file inherits the 'Printer setup' settings from any file you were using - that is, from the previously open file which exits when you create your new file.

If there was no open file, the settings most recently **set in any application** will be inherited.

 If you use a template when creating a new Word Processor document, the printer settings are inherited from the template.

Printing from the Text editor and the Program editor

You can print plain text files when using the Word processor as a text editor, and OPL programs from the Program editor, as you would print a document from the Word Processor. The same 'Print setup' and 'Print' options are available in the Program editor.

As in the Agenda and Database, you can tab-out the 'Printer model' line of the 'Print setup' dialog, and set the default font for the printer to use.

Printing from an OPL program

OPL has a command, LPRINT, for printing information. The Programming manual has an appendix to do with printing from OPL.

12

Open files

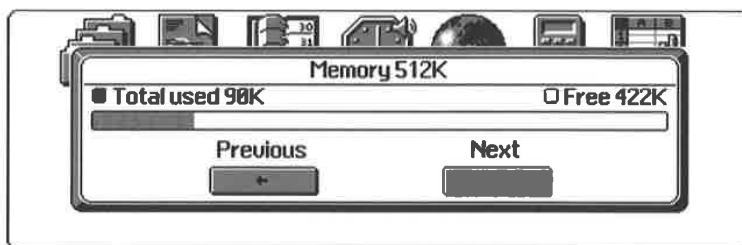
You have seen how to create new files, and how to change the open file - the one you're looking at - using 'Open file' options, or the file lists on the System screen.

You can, however, open more than one of any kind of file - more than one database, more than one Word Processor document, and so on. If, for example, you open two database files at the same time, both names appear in bold in the file list on the System screen.

Internal memory and open files

Every time you open a file a certain amount of internal memory is used up. This means that there is less space for the internal disk, as it is also a part of the internal memory of the Series 3a.

To see how much memory each open file is using, use the 'Memory info' option from the 'Info' menu in the System screen. It displays a dialog like this:



The shaded part of the bargraph shows the amount of internal memory currently used. The clear part of the bargraph shows the amount still free. If you press → you can see what is using up internal memory. The first time you press the size of the internal disk is shown. This is the amount of information stored on the internal disk. The disk can grow until internal memory is filled.


Memory is measured in K (short for *kilobyte*) - 1K can hold just over a thousand characters.

Further presses of → show the memory used by each open file. Time and Calc also use memory, as does the Series 3a itself (shown as *System*).

Press Esc to remove the memory dialog from the screen.

Why open more than one file?

The main benefit of opening more than one file is speed. You can switch instantly between the open files with a single keypress, instead of using an 'Open file' option, or using the System screen. It is particularly useful when you want to use 'Bring' to transfer information from one file to another.

 If you rarely swap between files, though, you may choose never to open more than one of each type of file.

If you want to use more than one Agenda file and to use alarms in them, you must open both files. If an Agenda file is not open, only its next alarm will ring.

Different types of file

You can open more than one file with the Database, Word Processor, Agenda, Spreadsheet or Program editor.

The Calculator and Time do not use files. They will always appear as *Calc* and *Time* on the System screen, and will never have file lists.

World is limited to one open file at a time.

Opening a second file

To open a second file without exiting the currently open one:

1. In the System screen, move the highlight to the name of the file to open.
2. Instead of Enter, press Shift-Enter.

If you now return to the System screen, you'll see two filenames in bold at the top of the list. Both files are open.

You can open several files of the same kind - press Shift-Enter on each one, in the System screen.


Up to 19 files can be open, i.e. bold, at the same time in the System screen (including a World file, plus Calc and Time). In practice, you may fill up all of the internal memory on the 256K model if you try to keep numerous files open. Installing other applications, and using 3 Link, may have the effect of reducing the maximum number of files you can open at the same time.

To move between open files of the same type, press the relevant application button. You can also press Shift with the button to move through open files in the reverse order. You can also create and open a new file without exiting another open file. Use the 'New file' option in the System screen, and type the name for the new file, but use Shift-Enter to complete the dialog.

File order in the System screen

Whenever you open a file to look at it, its name becomes bold and moves to the top of the file list in the System screen. This means that the top bold filename in a file list is the file you most recently looked at, while the bottom bold filename is always the file you least recently looked at.

Whenever you press Enter to open another file (one not shown in bold), **you will exit from the file that you least recently looked at, so its filename will no longer be bold.**

 When you press Enter to run a translated OPL program file, it never causes you to exit any other open file or running program. You can still exit (stop) a running OPL program in the System screen - move the highlight onto it and press Delete.


To open multiple files by default

If you wish, you can set the System screen to open files without exiting those which are already open. Select the 'Set preferences' option on the 'Special' menu in the System screen, and change the 'Open multiple files' line from 'Shift-Enter' to 'Enter'. Files will now remain open until you exit them yourself.

Exiting open files

You can exit an open file in the Database, Agenda, Word Processor, or Spreadsheet by using the 'Exit' option on the 'Special' menu. All of your information is always saved when you do this - unlike many computers, you don't need to use any separate "save" option on the Series 3a.

You can also exit an open file from the System screen - move the highlight onto it and press the Delete key. The 'Exit' dialog will appear. Press `Y` to confirm exiting the file.

 The 'Exit application' option on the 'Apps' menu also does this.

On the System screen, the Delete key is only for exiting open files. To **delete** a file, first exit it if it is open, then use the 'Delete file' option on the 'File' menu.

If you exit all of the files of a particular type, the relevant button has no open files to move to. It will then instead return to the System screen, with the highlight under its icon, ready for you to choose a file to open. (Psion-button also moves back to the System screen, with the highlight under its icon.)

The System screen has an 'Exit all applications' option on the 'Apps' menu. This exits every open application file (except 'Time', which must always be open), to free as much memory as possible. (You must still turn 'Link' off, if you want it off.)

'Please replace volume...' and 'User abandoned'

Whenever the Series 3a tries to write to or read an open file on an SSD, but fails to access the disk - perhaps because you have removed it, or one of the SSD doors is open - a message is shown asking you to replace the SSD. If the disk's *volume name* (described in a later chapter) is `backup`, for example, the message is 'Please replace volume "backup"'.

Reinsert the disk, close the doors and select 'Retry'. If you select 'Fail', the application enters a 'User abandoned' state, and will either become unusable, or exit immediately. (If a file was being saved or written to in any way, and you select 'Fail', the file will almost certainly be corrupted and become unusable.)

Calc and Time

The Calculator uses internal memory, just like an open file. If you exit it by moving the highlight onto it and pressing Delete, you can recover the memory it uses (about 5K). Of course, to use the Calculator in the future, you would need this amount of memory to be free.

The Time application also uses a small amount of memory, but you **cannot** exit it - it is essential to the operation of the Series 3a.

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Moving information with 'Bring'

Sometimes you may want to move or copy information from one area of the Series 3a to another - for example, you may wish to copy an address from a database into a letter you are writing with the Word Processor.

The 'Bring' options on 'Edit' menus allow you to transfer information between the Word Processor, Agenda, Database and Spreadsheet. The option is called 'Bring entry' in the Agenda, 'Bring text' in the Word Processor and Database, and 'Bring' in the Spreadsheet.

How 'Bring' options work

To 'Bring' text from one file to another:

1. Move to the file from which you want to copy, and highlight the text to be copied. Use Shift-↑↓ and/or Shift-←→, as appropriate, to highlight the text. (In the Agenda, you need only move the cursor to the entry to copy. You cannot "bring" more than one entry at a time from the Agenda.)
2. Move to the file in which you want to insert the copy, and position the cursor. (In the Database, move to the 'Add' screen.) Select the 'Bring' option.

The text remains highlighted, so if you select a 'Bring' option by mistake, just press the Delete key to remove the copied text

'Bring' options copy from the highlight most recently created, in **any** open file. You can copy as large an area as you can select with a highlight:

- In the Database, you can highlight part or all of one entry.
- In the Word Processor/Spreadsheet, you can highlight an entire file.

How information is transferred

When you copy text by using a 'Bring' option, the Series 3a copies it directly into the file. Lines of text are inserted in the most appropriate way. Each real end of line will cause an end of line in the new copy. Where a line of text wraps, it will be re-wrapped to suit the destination.

'Bring' options do **not** affect the text which will be inserted by any future 'Insert' option.

'Bring' options and the Agenda

You only need to move the cursor onto the bullet for the entry that you want to copy to select it.

When copying an Agenda entry to the Database, Word Processor and Spreadsheet, only the text for the entry is inserted. Symbols for to-do priority, alarms and so on are not copied. When copying an entry to another open Agenda file with 'Bring', all the symbols and settings for the entry are copied.

'Bring' options and the Database

Find the entry from which you want copy and use Shift-↑↓, on the 'Find' screen to highlight the lines you want to copy. You do not need to use the 'Update entry' option to re-edit an entry.

Blank lines are not shown on the 'Find' screen. When using 'Bring' options, though, any blank lines are always copied.

'Bring' options and the Spreadsheet

You can highlight and 'Bring' a range of text from the Spreadsheet into the Database and Word Processor. The text is copied as it appears on the worksheet. Each row is treated as a line of text, and tabs are used to split the lines of text into columns.

You can only 'Bring' a single row of text from the Spreadsheet into the Agenda. Spaces are used between cells.

'Bring' between files of the same type

You can use the 'Bring' options to copy text between two files of the same type. To do this, you must open both files at the same time. (The previous chapter explains how to do this.) Highlight the area that you want copy, then press the application button concerned to move to the new file, and select the 'Bring' option.

In general, 'Bring' has the same effect as using a 'Copy text' option, then 'Open file' to open the second file, followed by an 'Insert' option to insert the text. The information is copied in as complete a form as possible - for example, styles and emphases in a Word Processor document are copied correctly (as long as there are no clashes between shortcodes).

If you are keeping two files open at the same time, you must use 'Bring' instead of the 'Copy text' / 'Open file' / 'Insert' method - the 'Open file' option would not be able to open the second file as it would **already** be open. Moving to it with the application button concerned would not help, as a separate "clipboard" of copied text is kept for each open file.

Also, the 'Copy text' / 'Open file' / 'Insert' method exits and saves the first file when opening the second. You may want to avoid this:

- If you are editing large Word Processor or Spreadsheet files on a Flash SSD, this uses up disk space unnecessarily.
- You may have made changes in the first file which you wish to "undo" by using the 'Revert' option.
- You may already have some important information on the clipboard in the first file.


Alternatives to 'Bring'

You may wish to use an alternative to 'Bring' to transfer information, because 'Bring' restricts you to transferring the currently highlighted text. In the Database, for instance, you can only highlight and then 'Bring' one entry at a time. In the Agenda, you can only 'Bring' one entry, or a highlighted area in a memo attached to an entry, at a time.

Printing to a plain text file

You can transfer more extensive information by setting the 'General' printer driver in any application from which you can print, and then printing the information to a plain text file, which you can then edit and insert into another file. This method is particularly useful if you want to transfer information from Data and Agenda files, since it allows you to transfer any combination of entries that you are able to print.

1. Select the 'Print Setup' option on the 'Special' menu, tab out the 'Printer model' line and set it to 'General'.
2. Tab out the 'Printer device' line and set the 'Printer device' line to 'File'.
3. Type the file name and extension you want to use in the 'File: Name' line and select the disk on which it is to be created on the 'Disk' line. If you wish to create the file in a particular directory, enter it on the 'File: Name' line. If not, the file will be created on the root directory.

 If you do not enter a file extension with the file name, the default extension for files in the current application will be used.

4. Print the information you want to transfer as you would when printing it normally and it will be printed to the file.
5. Open the plain text file within the Word application if you want to edit the information. (The directory and file extension will probably be different to the default directory and extension for Word files. You will therefore need to use the file selector to find and open the file.)
6. You can now use the 'Save as' option to save the file in a format suitable for use with 'Merge in' in the destination application. Or you can highlight the areas you want to transfer and use 'Bring'.

See the 'Printing' chapter for further details of the 'General' printer driver and printing. See the 'Files and disks' chapter for further information on the file selector and merging files.

'Tidy/Extract' within the Agenda

You can also use the 'Tidy/extract' option within the Agenda as a means of transferring extensive information between two Agenda files. Simply use the 'Copy to file' option within 'Tidy/extract' to copy the entries that you wish to transfer to a file. Then use the 'Merge in' option within the destination Agenda file to insert the contents of the file.

See the 'Agenda' chapter for further details of the 'Tidy/extract' option. See the 'Files and disks' chapter for further details of merging files.

Transferring calculations

You cannot use 'Bring' to transfer information to or from the Calculator. You can, however, perform calculations **as you type** with the Word Processor, Agenda and Database, by using the 'Evaluate' option on the 'Edit' menu. (In the Agenda, you only see this option when editing the text of an entry.)

If there is no spacing in the calculation, you can just move the cursor onto it; otherwise, highlight the calculation with Shift-← or Shift-→. When you select 'Evaluate', the result appears. The calculation will be left highlighted, so you can delete it, if you wish, by pressing the Delete key.

If you generate a result in the Calculator, you **can** transfer it into the Word Processor, Agenda or Database:

- Use the 'M in' option to assign the value to a calculator memory.
- In the Word Processor, Agenda or Database, type the name of the calculator memory, highlight it and select the 'Evaluate' option.

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Files and disks

You can store your Series 3a files on the internal disk or on Solid State Disks (SSDs). This chapter begins with an explanation of SSDs; read it if you have an SSD, or you want to know how they work.

The Series 3a uses the MS-DOS filing system on all disks. Although it normally hides the complexity from you, there is full access to the filing system, and this chapter shows you how you can use it. You do not need this information, though, for straightforward Series 3a use, and some of it is technical.

Solid State Disks

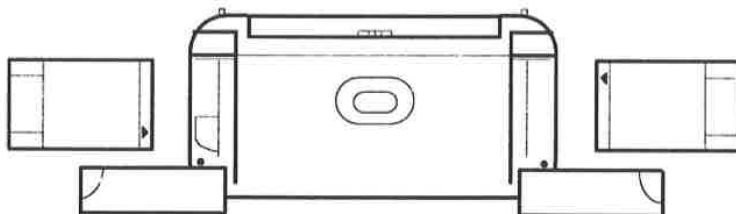
Solid State Disks (*SSDs*) can store any of the information normally kept on the internal disk - letters, address books, OPL programs etc. The main reasons for using them are:

- To provide more room for storing information.
- To make backup copies of important information, in case you accidentally change or delete it, or even lose your Series 3a.
- As a simple way to swap information with another Series 3a.

Fitting an SSD

SSDs fit in one of two SSD drives, marked A and B. You can use either, or both at the same time.

To fit an SSD, turn the Series 3a over, open one of the doors and insert the SSD. The side with the Psion logo should be uppermost and the end with the arrow symbol should go in first, like this:



Push the SSD all the way in - it needs a firmer push at the end - then close the door.

When you open the door again the SSD is ejected a little way, so that you can remove it.

There are two types of SSD - *Flash SSDs* and *Ram SSDs*.

Flash SSDs

Flash SSDs do not rely on any form of battery power, and can store information in a completely secure form for many years. However, deleting or replacing old information on a Flash SSD is like crossing out old notes in a book - the information is gone, but the space is still occupied. **So Flash SSDs are for storing important and/or "finished" information** - that is, information which is likely to change only occasionally, if at all.

Eventually, the Flash SSD will fill up. You must then copy the information that you wish to keep to another *disk*, *format* the Flash SSD to make it blank again, then copy the information back.

You might also keep backup copies of important information on a Flash SSD and leave the Flash SSD in a safe place, in case you lose your Series 3a.

Ram SSDs

Ram SSDs store information securely for day-to-day use. They have a built-in battery, to preserve the information when the SSD is out of the Series 3a. When in one of the SSD drives, Ram SSDs are powered entirely by the Series 3a, and a new SSD battery will typically remain good for several years. When out of the Series 3a, Ram SSDs rely on the power of their built-in batteries; a fresh battery will typically preserve the information for at least three months.

When you delete or replace information on a Ram SSD, the space that was used is freed for further use, just as it is on the internal disk. So **Ram SSDs are for storing all kinds of information, such as OPL programs or Word Processor documents.**

Don't keep important information on a Ram SSD, unless you have a backup copy elsewhere, as the battery power will run down one day.

Before you use a new Ram SSD:

1. Fit its battery, as indicated in its accompanying leaflet.
2. *Format* it, as described below. Until you do this, you cannot save information on it. When you format the disk, the Series 3a will try to check the condition of the battery, and will display a 'Battery is low' warning if the battery has insufficient power to preserve information out of the machine.
3. **If formatting produces no 'Battery is low' warning:** use the 'Disk info' option in the System screen, and press the key corresponding to the drive containing the Ram SSD to check the condition of the battery. The message 'Battery good' or 'Battery low' may appear in the top line of the 'Disk info' dialog, after the size of the SSD. Again, if you see 'Battery low' check the battery is fitted correctly.
4. **If the 'Disk info' option produces no message after the size of the SSD:** the Series 3a cannot check the battery. If this is the case, take the SSD out of the Series 3a. Leave it out for five minutes, then re-insert it. Use the 'Disk info' option again. If the dialog has the same top line as before, all is well. **If the top line indicates an error such as 'Media is corrupt', either you have fitted the battery incorrectly, or it no longer has sufficient power.**

Formatting an SSD

Formatting an SSD wipes it completely clean, ready for re-use. (A Ram SSD also needs formatting before you first use it.)

You cannot format an SSD if it contains files which are in use. (See 'Open files' later in this chapter.)

1. Insert the SSD into one of the two SSD drives.
2. On the System screen, select the 'Format disk' option on the 'Disk' menu.
3. Select the drive containing the disk on the 'Disk' line. Be sure to choose the correct SSD drive - A or B - **and be sure not to choose Internal.**
4. It's a good idea to give each SSD its own name, as it may on occasion be used to identify the SSD. As PC users may recognise, this is called the *volume name* of the disk. It has the same format as a filename; enter up to 8 numbers and letters, plus (if you wish) a dot and up to three further characters.
5. Press Enter, and confirm that you wish to proceed with the formatting.

A bargraph is shown, to show you the progress of the formatting. You can use the application buttons to continue using the Series 3a while the formatting is taking place. You can press the System button to return to the System screen, to check the progress of the formatting.

The Series 3a can check the state of the battery in some Ram SSDs. If it can check your SSD's battery, it will do so at this point. You will be warned if the battery is low; either you have fitted the battery incorrectly, or it no longer has sufficient power to preserve information when it is out of the Series 3a. **Do not format and use the disk because it will lose any information it contains if it is taken out of the Series 3a.** Check you have fitted the battery the right way round.

Understanding files and disks

File lists in the System screen

The file lists beneath each icon are updated automatically. If you create a new file or insert a new SSD, the Series 3a will update the lists within a second or two. The Series 3a will also update the file lists if you press the System button when the System screen is already shown.

File lists begin with any open files, shown in bold. The most recently opened file is at the top; the bottom bold file is the least recently opened of the open files. (See the chapter on 'Open files' for more details.) The rest of the list - files which are not open - is sorted alphabetically.

If you press a key, the highlight moves to the first file which begins with that letter. Further presses of the same key will move the highlight between all files which begin with the letter.

Files on SSDs are shown with either [A] or [B], as appropriate, after their name. If files with the same name are found on different disks, the one on the internal disk is listed first, then the one on drive A, then B.

The Esc key moves the highlight to the top of the current list. A second Esc moves the highlight to the leftmost icon in the System screen. Psion← ('Home') also has this effect.

'Updating lists'

The System screen tries to keep its file lists up to date at all times, displaying an 'Updating lists' message while checking the disks. If you wish, you can set the Series 3a to update the lists only when you press the System button:

- Select 'Set preferences' on the 'Special' menu in the System screen, and set the 'Update lists' line to 'System button'.

'...' at the end of a file list

A file list can end with three dots (...), to signify that some files could not be shown. Several things can cause this;

- An SSD door was opened while the lists were being updated.
- It is possible to have more files for one icon than the System screen can handle. They will not be shown in the file list unless you delete some of the other files.
- Internal memory may have become filled by the generation of the file lists, causing one or more lists to be incomplete. You need to free some internal memory, as described in the 'Troubleshooting' chapter.

To find out which of these caused '...' to be shown, try to move the highlight onto the '...' itself. A message will be shown, explaining the reason for the incomplete list.

File management

New files and copying files

The 'New file' and 'Save as' options on the 'File' menus (in the Database, Word Processor etc.) let you create or copy files on any disk. You can also create or copy files from the System screen.

To make a new file: move the highlight anywhere on the file list for the icon concerned, and select 'New file' from the 'File' menu. Type the name, and select the disk to use.


To copy a file: move the highlight onto it, then select the 'Copy file' option on the 'File' menu. Move the highlight to the 'To file: Name' line, and type the name for the new copy of the file. Change the 'To file: Disk' line to the disk where this new copy should be made. Leave the last two lines of the dialog set to 'No'.

Important: If you copy agenda or database files with 'Copy file' in the System screen, the space taken by old (edited or deleted) entries is **not** recovered. Use the 'Save as' options in the Agenda and Database instead, to make smaller files.

Deleting and renaming files

The 'Delete file' and 'Rename file' options on the 'File' menu both work on the currently highlighted file.

'Delete file' removes a file completely. You cannot then recover the file, so be careful with this option.


 If you delete all the files below an icon in the System screen, the original name for that icon is again displayed beneath it. No file has yet been created, however, the creation only happens if you move the highlight onto it and press Enter.

'Rename file' changes the name of a file. The file stays on the same disk - to move a file to a different disk, you must use 'Copy file', then 'Delete file' to remove the original.

Open files

Important: open files - generally, those in bold in the System screen's file lists - cannot be copied, renamed or deleted. You must exit them first. The easiest way to exit an open file is from the System screen - move the highlight onto it, press Delete, then Y to confirm.

World files, even when shown in bold in the file lists, are not "open" in the same way as other open files, and you do not need to exit them first.

 It is possible to modify or delete an open file on an SSD if you move the SSD to the other SSD drive (or in another Series 3/3a). Do not try this - it will have unpredictable effects if you go back to the open version of the file.

Auto-saving of files

When you change to a different file, by using an 'Open file' option or by choosing a file from the file list in the System screen, the file you were using is exited. Any changes you had made to it are automatically saved. This is a different system to that used by many programs on business computers, where you must first use a 'Save' option to save changes you've made.

In the Word Processor and Spreadsheet, any changes made since the file was last opened or saved will now be saved. (In the Spreadsheet, any changes you were making on the input line will be lost.)

- In the Database and Agenda, entries are always saved to file when you enter them. However, if you were editing an entry in the Database, any changes you were making would be saved, whereas they would be lost in the Agenda.
- In World, changes to city and country information are always saved when you complete the relevant dialogs.

If you are not careful, auto-saving can use up space on a Flash SSD. If, for example, you continually swapped between two documents in the Word Processor, making small changes each time, they would be auto-saved repeatedly. If one or both were on a Flash SSD, it would start to fill up with old information.

It's best in such a case to open both files at the same time, by using Shift-Enter to open them from the System screen. When you then swap between them, either from the System screen or by pressing the relevant application button, no auto-saving will occur.

Using disks

Removing an SSD

You can remove an SSD at almost any time - just open the door and take it out. If the System screen is currently shown, you'll see its file lists update automatically, removing the names of files which were on that SSD.

Do **not** remove an SSD while information is being written to it, such as when a file is being saved. If you do, a message is shown asking you to replace the SSD. If the disk's volume name is `backup`, for example, the message is 'Please replace volume "backup"'.

Reinsert the disk, close the doors and select 'Retry'. If a file was being saved or written to in any way, and you select 'Fail', the file will almost certainly be corrupted and become unusable.


You cannot use the Series 3a until you select 'Retry' or 'Fail' (although any alarms will still ring).

If you intend using an SSD on another computer, such as another Series 3/3a or a Psion MC, exit any open files on the SSD each time before you remove it.

It is a good idea to exit any open files on an SSD before removing it (for whatever reason). If you do not, and you then try to access one of these open files, the application will soon ask you to put the SSD back in, and may not allow you to continue until you do so (or you select 'Fail', which may lose unsaved information).

Write-protecting an SSD

Each SSD has a switch to let you write-protect the information on it. If you set the switch to the 'Protect' position you can only read the information it contains. You cannot save anything on it, or alter or delete anything it contains. For example, if the SSD contained database files, you could view these in the Database, but you couldn't save any changes to the files.

 This is like write-protecting an audio or video cassette by breaking a plastic tab, or write-protecting a PC floppy disk.

You might want to write-protect an SSD containing particularly important files.

Important: before you write-protect an SSD, exit any open files on it.

The write-protection can be removed by setting the switch back to the 'Write' position.

Reclaiming space on a Flash SSD

When a Flash SSD is full, you can reclaim any space used by deleted information:


1. Make a copy of any files the Flash SSD contains, perhaps on the internal disk or on another SSD. The old deleted information is **not** copied. Use the 'Copy File' option on each file shown with the corresponding drive letter ([A] or [B]) in the System screen. Alternatively, use the 'Copy disk' option to copy **all** files from the disk.

To reclaim maximum space, open any Agenda or Database files and use the 'Save us' options in the Agenda and Database to create the copy. This ensures that the space taken by old (modified or deleted) entries is reclaimed.

 If you see a 'File or device in use' message when you try to copy a file, the file is still open. Exit it first - move the highlight onto it in the System screen, and press Delete.

2. *Format* the Flash SSD, as described earlier. The Flash SSD will be completely blank again, ready for re-use.

3. You can now copy back the files you copied before formatting, then delete the copies.

 If you wish to copy all of the files on a disk in one go, see 'Copying a disk', later in this chapter. If you have any agenda or database files, though, you may wish to copy them again afterwards, using 'Save as', before you format your Flash SSD and copy the files back.

Speed and Flash SSDs

Each database and agenda entry is stored separately on an SSD, as you enter it. (This is in contrast to Word Processor documents, where the smallest change will cause the whole document to be re-written onto the SSD when you next exit the document.)

Particularly on larger SSDs, you may find that accessing larger files gradually becomes slower as you continue adding information, because the Series 3a has to search each time through longer and longer chains of new, deleted or updated entries.

If you do find a decrease in speed, try using 'Save as' to make a new version of the affected file. It will then be saved without old deleted information, and in one area on the disk.

Battery power and SSDs

Important: writing information to a Flash SSD requires more power than writing to the internal memory. (The most power is used when formatting a Flash SSD; saving and copying files also uses more power than normal.) If a 'Batteries too low to write to Flash' message is displayed when you try to write to a Flash SSD, you are given the choice of 'Retry' or 'Fail'. **You should not in general select 'Fail'**. Plug in a mains lead, or turn the Series 3a off and replace the main batteries. (Alternatively, turn the Series 3a off and wait for a while. The batteries may recover enough voltage to write to the SSD.) Then use the 'Retry' option.

If you select 'Fail', the information you were trying to save may occasionally end up in a corrupted form on the disk. With Agenda or Database files you may then see 'Write failed' or 'End of file' error messages, even with good batteries.

If this happens, or if you have any other problems after a 'Battery too low to write to Flash' message, exit and re-open the file. If the errors still occur, copy the file (or use 'Save as') and use the new version of the file.

The 'Disk info' option on the 'Info' menu displays the status ('Good' or 'Low') of the battery in **some** types of Ram SSD. If it says 'Low', the battery may no longer have sufficient power to maintain the disk. Keep the SSD in the Series 3a, which will power it, and backup the information to another disk. You can then remove the SSD and change the battery, as described in the leaflet accompanying the disk.

The 'Format disk' option will also tell you that the battery is low in a Ram SSD, if it can read the battery.

Disk management

The 'Format disk' option can format the internal disk. **This will delete every file on the internal disk.** Be careful when formatting an SSD that you select the correct drive.

You can use the 'Disk info' option on the 'Info' menu to find the free space, and the amount used, on any disk.

The 'Name disk' option on the 'Disk' menu sets or changes the volume name of any disk. You should in general name all of your SSDs, either with 'Name disk' or in the 'Format' dialog, as you may see the name used occasionally to identify the disk.

Drive C:

When setting a 'Disk' line in a dialog, the choices given are the internal disk, the SSD drives A and B , **and the expansion socket C** . This will usually be shown as 'Absent' or 'No disk'. Some expansion devices, such as **serial 3 Link**, do contain a drive C which has files on it. (**Parallel 3 Link** does not contain a drive C .)

Advanced use of files and disks

Directories and file extensions

Directories

The internal disk and SSDs use an MS-DOS-compatible directory structure, the same as that used on disks on business PCs. However, the Series 3a hides the complexities of this. You have only to supply a filename, and to say which disk a file is on.

Files are stored in various *directories* on each drive. The structure of a drive begins with a *root directory*, written as a backslash (\). This can "contain" files and/or other directories, and each directory can contain more files and/or more directories.

When you have "directories in directories", they are often called *subdirectories*. For example, the root directory (\) contains a directory called \DAT , which normally contains files created by the Database. If you create a new subdirectory in \DAT , called RECORDS perhaps, its name in full is \DAT\RECORDS . You could copy or create files in \DAT\RECORDS , and even create subdirectories in it - \DAT\RECORDS\TMP , for example.

The full directory name is sometimes referred to as the *path* or *directory path*.

In some places, directory names are written with a final backslash, such as \DAT\ and \DAT\RECORDS\ .

File extensions

Filenames are composed of one to eight letters and/or numbers, as you've seen.

However, this can be followed by a *file extension* (sometimes just called *extension*) comprised of a dot and from one to three letters and numbers.

File extensions are by convention used to group different types of files. The Series 3a uses file extensions in this way, but hides this from you.

Where the SERIES 3a stores files

Your files are saved in these directories, and with these file extensions:

Type of file	Directory	File extension
Database	\DAT	.DBF
Agenda	\AGN	.AGN
World	\WLD	.WLD
Spreadsheet	\SPR	.SPR
Word	\WRD	.WRD
Printer drivers	\WDR	.WDR
Word templates	\WDR	.WRT
Sound files	\WVE	.WVE
OPL modules	\OPL	.OPL
translated modules	\OPO	.OPP
other OPL files	\OPD	.OPD, .PIC
programs/OPAs	\APP, \IMG	.APP, .IMG, .OPA
System screen lists/groups	\APP	.ALS, .GRP

If you have an Agenda called PERSONAL , its filename is really PERSONAL . AGN , and it is kept in the \AGN directory. You can add the filename to the directory - \AGN\PERSONAL . AGN - to specify the file completely, for the disk it is on.

A freshly formatted SSD has only the root directory on it. The Series 3a makes the above directories on a disk whenever it needs them. For example, if you copy a database file to an SSD, the Series 3a will create a \DAT directory if it is not already there, then put the file in it.

File lists in the System screen show only files in the expected directories and with the expected file extensions. The *file selector*, described later in this chapter, gives access to other files and directories.

Making your own directories

You can make your own directories, if you wish, with the 'Make directory' option in the System screen. To use it, type the name of the directory, such as \TEMP\ or \WRD\HOME .

If you do put files in subdirectories, you won't see them listed on the System screen. However, when you use an 'Open file' option inside an application, it lists files in the subdirectory from which the current open file came. You can also "navigate" the directories on a disk with the *file selector*, described later.

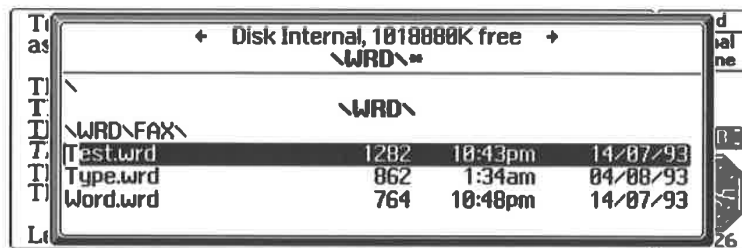
The System screen has a 'Remove directory' option, if you've finished using a directory and want to remove it. **You will be warned that any files or subdirectories it contains will be deleted.** (MS-DOS users should note that this is unlike the corresponding MS-DOS command, RD/RMDIR.)

You cannot rename directories.

The file selector

Whenever you are selecting a filename in a dialog - whether the name of an existing file, or typing the name of a new file to create - you can press the Tab key, and the file selector will be displayed. With it, you can specify the name of **any** file in **any** directory, anywhere on any disk. You can also use it to look around a disk, and see what directories it has.

If you press Tab while using the 'Open file' option in the Word Processor, the file selector might look like this:



The top line gives you information about the disk. Use ←→ to change disk.

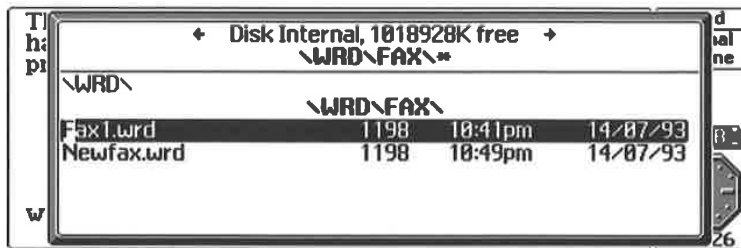
The second line tells you the current directory, and which files are listed below. * means "all files", so \WRD* means "all files in \WRD ". ('*' is a *wildcard*. There is more about wildcards later in this chapter.) Sometimes, only certain of the files in the directory are listed.

Various directory names are then listed, to allow you to navigate the disk. Below them are listed the files in the current directory. You can move the highlight with \uparrow , \downarrow , and the screen will scroll up and down if necessary. If the file you want is in this directory, move onto it and press Enter.

You can also type the first letters of a filename to move to it, as with city and country names in World. If you use a Shift key with the letter you type, you can move to a directory. If you use the Control key instead, you can type a drive letter - A or B for the SSD drives, or M for the Internal disk.

The list begins with the names of the *parent directory* and the current directory. (The parent is the directory which "contains" the current directory - here, it is the root directory, \ .) The rest of the list is the contents of the current directory - any subdirectories it may have (in this example, \WRD\FAX), then any files it contains.

If you want to select a file in \WRD\FAX , move the highlight onto \WRD\FAX and press Enter. The file selector will then show a similar screen for the \WRD\FAX directory:



If the file you want is not in the current directory, nor in one of its subdirectories, you can navigate to different directories via the parent directory. The parent directory of \WRD\FAX is \WRD - to return to it, move the highlight onto it, and press Enter.

The parent directory of \WRD is \ , the root directory. If you move the highlight onto it and press Enter, the file selector will show the directories and files in the root directory. This gives you a view of the general structure of the disk. You can move the highlight onto any of the directories shown and press Enter, to see which files and subdirectories it contains.

The file selector and the System screen

If you press Tab in the System screen (or select the 'Directory' option), the file selector again appears. The position of the highlight in the System screen controls which directory is shown - if it was on the Agenda file list, \AGN is shown, and so on. If it was below an icon which does not use files, such as Time or Calc, the root directory is shown. If it was below a group, the directory for the particular applications is shown.

When using the file selector from the System screen, you can press the Menu key to bring up menus of the System screen's file and directory options. This allows you to use the file selector itself to manage your files and directories.

You can also use the file selector in the System screen to open a particular file. Move the highlight under the icon of the application you wish to use, and press Tab. You can now navigate to the correct directory, move the highlight to the file to use, and press Enter. (If you press Shift-Enter, you open the file without exiting another one.)

Tagging files

When using the file selector you can *tag* more than one file. You can then do something with the group of files you have tagged - copy them or delete them, for example, in one go.

To tag the highlighted file, press the '+' key; to "un-tag" it, press the '-' key. You can also tag or un-tag a file by pressing Shift-↑ or Shift-↓ when the highlight is on it. Tagged files are shown by a tick after their name.

Press '*' to tag all of the files shown in the file selector. '/' will un-tag them all.

When you have tagged the files you want to use, press Enter. In the original dialog, '(Tagged files)' will be shown in place of a filename.

You can only tag files in one directory at one time. If you then change disk or directory, the Series 3a will remember which files are tagged, until you tag or select a different file.

Settings such as 'Subdirectories' in the System screen's 'Copy file' and 'Delete file' cannot be used if you tag files.

Selecting a directory

In some cases, such as when using 'Copy file', you can just give a directory name. If you do this for the 'From file: Name' line, this means "copy all files in this directory". For the 'To file: Name', this means "put the new copies here, and use the same filenames as before."

To select a directory name, navigate towards the desired directory. As soon as the directory name appears, such as when you have navigated to its parent directory, move the highlight onto the directory name and press Psion-Enter. (You can, if you wish, navigate into the directory, in which case the directory name is shown in bold; you can then move the highlight onto this bold name, and press Enter to select it)

If you try this when a filename is required, such as in 'Rename file', the Enter is ignored and you are left in the file selector.

If, when copying, you leave the 'To file: Name' completely blank and just change the disk, the same directory and filenames will be used on the new disk.

File specifications

Complete file specifications

In order to specify a file **completely**, the Series 3a uses a *filing system* and a disk (sometimes called the *drive* or *device*) in front of the directory and filename.

- The filing system usually specifies the computer, and is usually LOC:: ("local"- the Series 3a) or REM:: ('remote' - an attached computer).
- The disk is the area on that computer where the file is kept. On the Series 3a this can be M: (the internal disk), A: (left SSD drive) or B: (right SSD drive).

To completely specify a file, you add the four parts together. So an agenda file named BUSINESS, in a directory called \AGN\OLD on the internal disk of the Series 3a can be specified as:

```
LOC::M:\AGNOLD\BUSINESS.AGN.
```

If this file were in the root directory, you would specify it as:

```
LOC::M:\BUSINESS.AGN.
```

A full file specification may be up to 128 characters long.

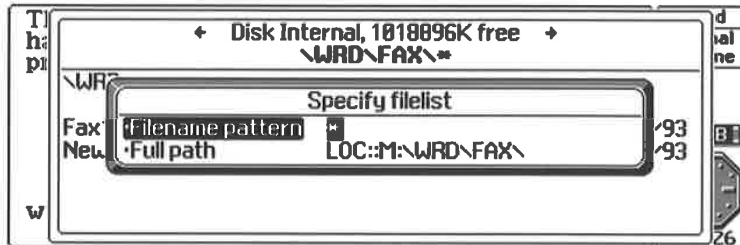
Specifying new filenames

When choosing a new filename, as with the 'New file' option or with the new file's name in 'Copy file', you can type directly as much of the file specification as you wish. This might just include a different extension, such as `AGENDA.TMP`, or a directory, such as `\DAT\OLD\DATA`, or it might be a complete file specification, such as:
`REM::C:\WORD\ME.DOC`.

File specifications and the file selector

When you are using the file selector on the System screen, or from the 'File Name:' lines of any of the option dialogs, you can tell the file selector to list a particular group of files, if you don't want to see all of the files in a directory. You might want to do this to perform an action on more than one file at the same time, for instance.

1. Press Control-Tab instead of Tab to bring up the file selector with the 'Specify filelist' dialog. This lets you set or change the file specification:



You can also press Tab when in the file selector, to display this dialog.

2. On the 'Filename pattern' line enter the specification of files to list. On the 'Full path' line enter the full directory (file system, disk and directory path) to start from.

When you enter the 'Filename pattern', you usually use the *wildcards* ' ? ' and ' * '.

- ? matches any single character
- * matches any number of characters, including none.

For example:

- * (or *.*) matches with every file in a directory.
- *.WRD matches with all files with the extension .WRD:

```
FEESMEMO.WRD
MEMO.WRD
LETTER.WRD
```

FAX1.* matches with all files with the name FAX1:

```
FAX1.WRD
FAX1.TMP
FAX1.OK
```

Memo?.wrd matches with:

```
MEMO2.WRD
MEMO3.WRD
MEMOO.WRD
```

but not:

```
MEMO2A.WRD
MEMO.WRD
```

3. When you have typed the file specification, press Enter, and the file selector is shown, set to this specification. However, if you wish to **select all the files which match this specification** - if, for example, you are using the 'Delete file' option on the System screen - press Control-Enter instead of Enter. You are then returned to the original option dialog, with the 'File Name:' line set to the specification you gave.

For example, to delete all files in the \AGN directory which have the file extension .TMP :

1. In the System screen, move the highlight onto the Agenda file list and select the 'Delete file' option.
2. Press Control-Tab, type *.tmp on the 'Filename pattern' line, and press Control-Enter.

You can now continue with the 'Delete file' option as normal - press Enter then Y to confirm the deletion of these files.

If you also set a 'Subdirectories' line to 'Yes', such as in the System screen's 'Copy file' and 'Delete file' options, subdirectories will also be searched for files which match your specification.

Copying a disk

To copy one SSD to another:

1. Select the 'Copy disk' option on the 'Disk' menu in the System screen.
2. Select the SSD to copy on the 'From disk' line.
3. Set the disk to copy to on the 'Disk' line of the dialog. If you wish to copy this disk into a particular directory on the other disk, enter the name of the directory on the 'To dir: Name' line of the dialog. If you are making an exact copy of the disk, just press Enter.

Files in the root directory and all its subdirectories are replicated on the other SSD.

If you are about to format a Flash disk, you might wish to copy all of its files to a temporary directory on the internal disk, then format the SSD, and then copy the files back. To do this:

1. Copy the files from the SSD, as before. When you set 'To dir: Disk' to 'Internal', you should also set 'To dir: Name' to \TEMP\ . The directories and files on your SSD will be copied to an identical directory structure on \TEMP on the internal disk.
2. Format the SSD with the 'Format disk' option.
3. You can now use the 'Restore files' option on the 'File' menu to copy the files back onto the disk. This time, navigate to \TEMP\ for the 'From dir: Name'. The 'From dir Disk' should be 'Internal', and the 'Restore files to' line should be the correct SSD drive.
4. To delete the files from the internal disk, select the 'Remove directory' option. Press Tab to use the File selector, move onto \TEMP , and press Enter; then press Enter again, to **select** \TEMP as the thing you want in the dialog. Then press Enter to complete the dialog. A warning dialog is displayed, telling you that all files in \TEMP will be deleted; press Y to confirm this.

Important: If you copy Agenda or Database files in this way, the space taken by modified or deleted entries is **not** recovered. So:

- If you are copying from the internal disk or from a Ram SSD, use the 'Compress file' options in the Agenda and Database, before you copy the files.
- If you are copying from a Flash SSD, make the copy of all the files as above. Then open the affected files on the SSD and use the 'Save As' options in the Agenda and Database, to overwrite the copies with new (compressed) copies. In either case, set 'Use new file' to 'No'. Then select the 'Exit' option, to exit the file on the SSD.

Other advanced options

The default disk

If you wish to keep files almost exclusively on an SSD, use the 'Default disk' option in the System screen to set the default disk to the relevant SSD drive. File-based menu options in the System screen will then start with this drive as the disk to use, instead of the internal disk.

File lists in the System screen will still show [A] and [B] for files on SSDs.

The "current directory"

If you move the highlight onto a filename line in a dialog and press Psion-Tab, a message is displayed showing the disk/directory assumed for this file. This begins with LOC: : if it is a drive on the Series 3a, or REM: : if it is a drive on an attached computer.

File attributes

You can mark files in certain ways by giving them *attributes*. Use the 'File attributes' option on the 'File' menu in the System screen. You can select the file or files to set in the normal way, using the file selector if you wish. (You can also set the 'Subdirectories' line, for your chosen settings to apply to all matching files in subdirectories of the current directory.) Then set any of the four attributes:

- *Read only* means that changes cannot be made to a file, although you can still open it and view it as usual. You might like to make a file 'Read only' if it was particularly important and you wanted to avoid the possibility of it being deleted or changed by accident.
- *Modified* indicates that a file has changed since it was last backed up. (See the 'Security and backups' chapter for information about making backups.)
A file has its 'Modified' attribute set whenever it is created or changed. (For users acquainted with MS-DOS, 'Modified' is the equivalent of the 'Archive' attribute.)
- *Hidden* and *System* are used by the Series 3a. You should not normally use them. ('Hidden', for example, stops a file from appearing in the System screen's file lists.)
Unpredictable results may occasionally occur if you use these attributes, however.

The file selector shows all files, even those with the 'Hidden' attribute set.

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Security and backup

If you keep private information on your Series 3a, you can protect it against prying eyes by entering a password. You can enter a *system password* to protect the Series 3a itself, so that it will not turn on until the password is entered. You can also password-protect individual worksheets, Word Processor documents and memos in the Agenda. They will be stored in encrypted form, and will be unreadable unless the correct password is given.

You can also make *backup* copies of important information as a safeguard against accidental change or deletion. It can be very distressing to spend many hours entering information into a computer, only to lose it, and have to re-type it from scratch.

Passwords

Warning: The casual use of passwords is dangerous. It is all too easy to decide to password-protect a Word Processor document, say, then return to it some time later only to find that you cannot recall the password. Unless you remember (or guess) the password, the information in that file is then lost to you, just as if you had deleted the file.

You must decide whether your Series 3a contains any information which needs to be protected. If not, you may decide not to use passwords at all.

Choosing a password


If you just want to protect information against casual snooping, you don't have to go to any great lengths to pick an "un-guessable" password. Just make sure the password is something you won't forget.

If you have some important information which needs real protection, you should think more carefully about your password. If anyone makes a serious attempt to guess your password, they may well try your date of birth, car registration number, spouse's name, and so on. It is much safer to invent a short password, perhaps part of some word or words which means something to you. The important thing is that the password is almost impossible for someone else to guess.

Before using a password for individual files, it is a good idea to get used to it by setting it as the *system password* for a while, even if you only intend using it for individual files. You will then have to type it in whenever you turn the Series 3a on, and after a few days (or maybe weeks) you will know the password for good.

You can use different passwords for different files but the more you use, the more likely you are to forget one. Most people who use password-protection use only one password.

Setting the system password

1. Move to the System screen and select the 'Password' option on the 'Special' menu.
2. In the dialog which is displayed, enter a password of up to eight characters. Padlock symbols are shown on the screen in place of each letter, so that no-one can read the password as you type. If at any time you think you have made a mistake, press Delete to delete backwards towards the start of the password. (Esc leaves the 'Set password' dialog without setting a password.)
 You can enter the password in upper or lower case.
3. Having typed the password once, press ↓ to move to the 'Confirm password' line, and type it again. This is to guard against accidental typing errors.
4. Leave 'Password set' to 'On', to turn passwords on. When you now press Enter to confirm this dialog, a system password is set. The next time you turn the Series 3a on, you will have to type the password.

The job of a password is to make information secure. **If you forget the system password, you must do a *hard reset* before you can use the Series 3a again. All information in internal memory will be lost when you do this.** (To do a hard reset, hold down the right-hand Shift key, and gently press something like an unfolded paper

clip into the reset hole. Then press ON/Esc to turn on, still holding down the right Shift key.)

Alarms still ring while a system password is set.

The password is stored in encrypted fashion. Even a program which looks through internal memory cannot discover your password.

Changing the system password

If you ever need to change the system password:

1. Select the 'Password' option on the 'Special' menu. Type the current password in the 'Password protected' dialog and press Enter. A 'Change password' dialog is shown.
2. Press ↓ to move the highlight onto 'New Password', and type the new password.
3. Press ↓ and type the password again on the 'Confirm password' line. Then press Enter and the new password will be set.

Disabling or clearing the system password

1. Select the 'Password' option on the 'Special' menu.
2. Enter the current password in the 'Password protected' dialog and press Enter. The 'Change password' dialog will appear.
3. **To disable the system password:** use → to turn the 'Password set' line to 'Off'. Then press Enter. **Your password is unchanged**, but you will no longer be asked for it whenever you turn the Series 3a on. (**But don't forget your password**, as you will be asked to enter it if you try changing to a different password later.)

To clear the system password altogether: move the highlight onto the 'New password' line, and press Enter as if to enter no characters as a password. The Series 3a displays a 'Password not confirmed' message, and moves the highlight down to the 'Confirm password' line. Press Enter again. The old password is then cleared, and the Series 3a will no longer ask for a password when you turn it on.

Passwords on Spreadsheet / Word Processor files

You can store confidential information in a Spreadsheet or Word Processor file, or a memo in an Agenda file, and then password-protect it. You might, for example, keep a list of Personal Identification Numbers (PIN numbers) for credit cards as a Word Processor document.

The 'Password' option is on the 'Word' menu in the Word Processor, and the 'File' menu in the Spreadsheet.

The option asks for a password in the same way as the System screen. Type the password, press ↓, type it again for confirmation, and press Enter.

There is no 'Password set' line in the dialog when setting the password for a file; the password you enter is set immediately.

The password takes effect when the file is next saved; you may wish to use an 'Exit' option, to save the file. Whenever you then try to **open** this file, a dialog is shown asking for the password. **If you forget the password, you cannot access the information in the file.** You can only press Esc, to abandon the attempt to open the file.

To change a password, select the 'Password' option again. As protection against tampering, you will first be asked to enter the current password. When you have entered it, a 'Change password' dialog is shown, which requires you to type in the password twice, as before.

To clear a password, select 'Password' again, but (as when clearing the system password) **press Enter twice**, to enter no characters at all on both lines of the dialog. The password is used to control the encryption of the file, and is not itself stored anywhere. You can copy the file to an SSD if you like: the information cannot be accessed without the password, even on another Series 3a

Important: once you have opened a password-protected file, you can read its contents by pressing the Word or Sheet button to return to it. So when you have finished looking at a password-protected file, be sure to use an 'Exit' option to exit it.

Precautionary measures

Precautions against losing your SERIES 3a

The 'Set owner' option on the 'Info' menu of the System screen lets you enter "owner" information, in case you lose your Series 3a. If you set a system password, this owner information will be shown whenever the Series 3a aims on. and asks for the password. If you do not set a system password, your owner information will still be shown whenever the 'Set owner' option is selected.

The 'Set owner information' dialog allows you to enter four separate lines of information. You don't have to stick to the suggested format - you can delete the suggested text (Owner : , Phone : and so on) if you wish, and type whatever personal information you want.

Protection against accidental change or deletion

To protect an important file, set its 'Read only' attribute. (If a file is open, you will need to exit it - e.g. with the Delete key in the System screen - before you can do this.)

1. Move the highlight onto the file in the System screen, and select the 'File attributes' option on the 'File' menu.
2. Set the 'Read only' line of the dialog to 'Yes'. Press Enter.

The file is now protected against any form of change or deletion - you can look at it. but **you can't make changes to it**. You would only lose the information it contains if you were to format the disk it is on.

To reset the attribute to read/write: select 'File attributes' from the 'File' menu and set the 'Read-only' line to 'No'.

You can also protect an entire SSD. Each SSD has a small switch on one side. If you slide this from the 'Write' position to the "Protect" position, you cannot change the disk in any way - you cannot delete, change or create files, or format the disk.

Protection against tampering

If you choose not to set a system password, there is nothing to stop another person who is familiar with the Series 3a from setting the password on your **Series 3a, preventing you from using it**.

You can prevent this from happening by setting a system password, as described earlier, but disabling it by setting the 'Password set' line to 'Off'. It will then be impossible for anyone else to tamper with the password without knowing the password you entered.

Backups

While it would be impractical to make regular backup copies of information in paper address books, agendas and so on, it is easy to backup information on a computer.

If you try to save time or money by not making backups, you may well find out why people who work with computers almost **always** backup important information - or all information, if possible.

Backing up one file

To backup a single file, copy it to an SSD (Solid State Disk), but carry on using the file on the internal disk. If you accidentally delete the file on the internal disk, or delete information in it, you can copy the file from the SSD back to the internal disk. You will then lose only those changes made since you made the copy on the SSD.

SSDs also provide extra space for your information, if you need it.

If you have access to an IBM PC or compatible, or to an Apple Macintosh, you can instead copy files via a serial 3 Link to the other computer. Serial 3 Link can also communicate with many other types of computers, if they have suitable serial communication software.

See the 'Files and disks' chapter for full details of using SSDs and copying files.

How safe are backups?

Information on a Flash SSD is safe from everything but accidental change or deletion. The information will last for at least 10 years.

Ram SSDs store information securely for day-to-day use. When in one of the SSD drives. Ram SSDs are powered by the Series 3a, and a new battery will remain good for at least a year, and probably a lot longer. When out of the Series 3a they rely on the power of the built-in battery: a fresh battery will preserve the information for at least three months. Because it is hard to tell the condition of the battery, you should not rely on information backed up to a Ram SSD which is kept out of the Series 3a

Information backed up to another computer is reasonably secure, although floppy disks and hard disks can occasionally go wrong.

Any backup, of course, can be lost or stolen

When to backup

You can backup as often as you wish to a Ram SSD, or via a serial 3 Link.

If you use a Flash SSD **purely** for backups, you can also use it as often as you wish - format it first each time, then copy the files you want backed up.

If you keep "live" information on a Flash SSD, or if you backup individual files to it, it will slowly fill up, as old versions of files still take up space on a Flash SSD. See 'Reclaiming space on a Flash SSD' and 'Copying a disk' in the 'Files and disks' chapter.

Incremental backup

The System screen can perform *incremental backup* of disks. The first time you do this, all of the files on the disk are copied to the backup area. When you next do it, only those files which have been changed in the meantime are copied. This makes backing up a disk as fast as possible - quicker than using the 'Copy disk' option - and minimises the space used if you are backing up to a Flash SSD.


Your first backup

To back up all the files on a disk drive:

1. Select the 'Backup files' option on the System screen's 'File' menu. The 'Backup files' dialog will appear.
2. On the 'Backup files on' line, enter the drive (Internal, A or B) that contains the files you want to back up.
3. On the 'To Dir: Name' line, enter the name of the directory into which you want to copy the files. **The first time you back up, choose a new (or empty) directory.**
4. On the 'Disk' line, specify which disk drive that the backup files should be copied to.
5. On the 'Files' line, specify whether you want to copy all the files on the drive you specified in step 1, or only those files that have changed since you last used the 'Backup' option to back up these files. **The first time you backup, this setting is irrelevant; all of the files will be copied.**

Subsequent backups

On future occasions, when backing up the same disk, the 'Backup' dialog will suggest the same destination directory. If you select 'Modified since last backup' on the 'Files' line, only those files which have changed or been created since the last backup will be copied. The backup directory will then always contain the most up-to-date versions of all your files.

 'Backup' looks at the 'Modified' attribute to work out which files to copy. File attributes are described in the 'Files and disk' chapter.

If you have saved files with the 'Save as', 'Save' or 'Copy file' options, the 'Backup' option will still treat them as files which have been modified, and back them up again.

Reverting to backed up copies of files

If you lose an entire disk you can copy all the files in the backup directory at once, using the 'Restore files' option on the 'File' menu.

You may wish first to format the disk from which the files have been lost. **Take great care not to format the disk containing the backups.**

You may also wish to check the directory into which you have been backing up. It may contain versions of out-of-date files which you subsequently deleted from your Series 3a; if so, you may wish to delete them from the backup directory before you restore from it.

If you lose just one file and need to revert to your backed up copy of it, use the 'Copy file' option as normal to copy the file. This is particularly important if you have modified any of the other files in the directory since you last backed them up. **If you used 'Restore files', your up-to-date files would be overwritten with out-of-date files.**

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The System screen

The icons shown in the System screen represent different *application programs* - Database, Word Processor and so on - in the Series 3a.

- You can customise the appearance of the System screen by moving icons to different positions on the screen, duplicating icons for new lists of files, grouping icons together, and by removing icons from the screen.
- You can buy application programs which, once installed, appear as icons in the System screen.
- You can make your own OPL programs appear on the System screen, with their own icons and file lists.

The menu options on the System screen allow you to control some of the system-wide settings for the Series 3a.

Note that file lists themselves are covered in the 'Files and disks' chapter.

Icons in the System screen

New applications

You can install additional application programs onto the Series 3a, from SSDs or 3 Link leads.

Installing a new application

To install the icon on the System screen:

1. Plug in the SSD or 3 Link lead containing the application.
2. Select the 'Install' option on the 'Apps' menu, and in the dialog which appears set the 'Disk' line to the relevant drive, (If the application is on an SSD, the drive will be A or B ; if it is on a 3 Link lead, set drive C , the "drive" for files on the lead.)
3. The new application name will be shown on the 'Name' line. (If there is more than one application on the SSD or 3 Link lead, you can choose between them.)
4. Set the 'Position' line to 'Current', 'Last' or 'First' to position the new application icon on the System screen. ('Current' means the position of the highlight on the System screen.) Press Enter to complete the dialog and install the new application.

Installing OPL applications (OPAs)

The built-in programming language, OPL, lets you add your own *OPL applications* (or *OPAs*), with their own icons and file lists, into the System screen.

See the 'Advanced topics' chapter of the Programming manual for more details.

Reassigning the application buttons


You can re-assign any application button (apart from System), with or without the Control key, to move to any application whose icon is currently on the System screen.

Usually you would assign an application button plus the Control key, but you can also assign an application button on its own, if you don't want it to go to its normal application. Both assignments have the same effect.

Assigning an application button keypress provides a quick entry to a new add-on application which you have installed, saving you from having to use the System screen every time. You could also assign an application button to any groups or new file lists which you have created. Groups and new file lists are described later in this chapter.

To assign/re-assign an application button:

1. Make sure that you have installed the application's icon in the System screen.
2. Move the highlight to the icon concerned.
3. Select the 'Assign button' option on the 'Apps' menu.
4. To assign an application button on its own, instead of the Control key plus the button, change the 'Modifier' line from 'Control+' to 'None'.
5. Set the 'Button' line to the application button you wish to use, and press Enter to complete the dialog.

 Even if, after assigning a button to a particular application, you remove its icon, the button will still move to that application, if it is open.

Switching between open applications

You can use Shift and the System button to move from one open application to the next. In this way you can see **all** of the applications which are open, one by one. Psion-Shift-System moves around them in the opposite direction.

Rearranging and grouping icons

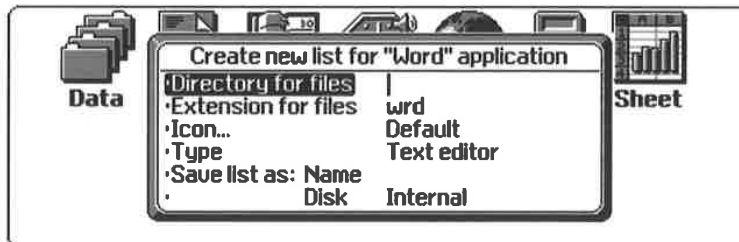
There are a number of ways in which you can rearrange icons and file lists on the System screen to make them more conveniently placed for your particular use.

Duplicating icons - new lists of files


If you create a large number of files in any of the applications, you may find it useful to separate the files into related groups. You might have created a number of files in the Word Processor, for example, some of which are letters and some reports. You could group all the letters together and list them on the System screen under the Word Processor icon, and create a second Word Processor icon to list all the reports under.

To duplicate the Word Processor icon, for example:


1. Position the highlight beneath the Word Processor icon and select the 'Create new list' option from the 'Special' menu. This dialog will be displayed:



2. On the 'Directory for files' line, enter a name of up to 8 letters for the *directory* where the new files listed beneath the new icon should be stored. You can create a new directory if you wish, or specify an existing one.

 If you know about directories, note that this directory will be a **subdirectory** of \WRD . To use a directory off the root directory, you would type \ in front of the directory name, for example \report . There is more information about directories in the 'Files and Disks' chapter.

3. Leave the 'Icon' line set to 'Default'.

 You can only use the default icon, which in this case will be the Word Processor icon, unless you have acquired other icon files from some other source. (You can make your own using OPL; an example is given in the section on OPL applications - *OPAs* - in the 'Advanced topics' section of the Series 3a Programming Manual.) If you wish to use another icon, you would press Tab on the 'Icon' line and select the icon you wanted to use.

4. For ordinary Word Processor files, set the 'Type' line to 'Word Processor', and leave 'Extension for files' set to 'wrđ'. (If you want to use plain text files, set 'Type' to 'Text editor' and 'Extension for files' to something like `txt`. There is more about this in 'Plain text editing' in the 'Word Processor' chapter.)
5. On the 'Save list as:' line, enter a name to save this information as, and the disk to use. You might enter `report`, perhaps, as the name. Initially the list will appear on the screen with this name.
6. Press Enter. A dialog is shown, listing your choices; press Enter again to confirm them.

When you create a new list of files, you can open them in the usual way of highlighting the file in the System screen and pressing Enter. However, you can also assign an application button keypress (as described earlier) to any of the new lists you create.

You cannot create new lists for applications which are not file-based, such as Calc and Time.

Grouping applications

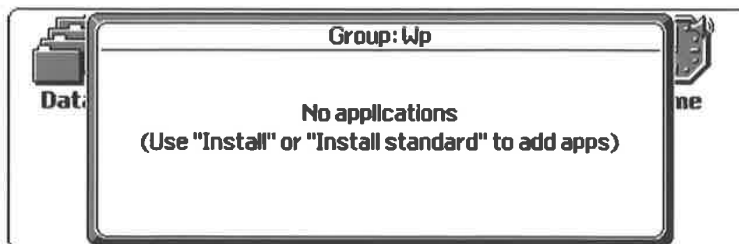
If you find that the row of icons on the System screen gets too long, you can group together a number of applications under one icon. You might want to do thus to applications that you use least often, or which are closely related, or which do not have file lists.

For example, if you have created several lists of Word Processor files (as described above), and you don't use them very often, you could put them all under one icon to shorten the row:

1. Place the highlight in the position that you want the group to appear: the new group will be inserted to the left of the highlight. Select the 'Create new group' option from the 'Special' menu.
2. In the 'Create new group' dialog, enter the name that you want to give the group, for example "WP", and specify which disk you want the group to be stored on.
3. Leave the 'Icon' line set to 'Default'. (If you have your own icons, you can press Tab on this line, and select the icon to use.) Press Enter and the group icon will appear on the screen:



4. Place the highlight beneath the group icon and press Space. The group expands to take up most of the screen:




5. If you are adding one of the standard applications to the group, such as Calc, Data or the original 'Word' list, select 'Install standard' from the 'Apps' menu. If you are adding an add-on application, or a list which you created yourself, select 'Install'. Use the ←→ keys to find the first application or list that you want to include in the group, and press Enter to select it.

Repeat step 5 until the group contains all the icons you want it to contain. You can then select applications and files in this group in the same way as on the main list of icons. The group acts like a new version of the System screen.

Press Esc (or Space) to come out of the group and return to the main list of icons. (Space goes back into the group.)

The icons you have put in the new group are still shown individually on the main list of icons as well. (They have the same file lists as the icons in the group.) You can remove them as described below in "Removing icons from the System screen".

A more typical example would be to group together Time, Calc and World. This reduces the length of the row of icons in the System screen, but you can still see Time, World and Calc. and open and exit them, on the System screen.

 This example assumes you are still using just the one World file, itself called 'World'.

The list under the Group icon

The names of applications installed in a group are listed under the group icon. **If an application is file-based and may have a file list, the application name is followed by three dots, such as "Word...", for example.** To open a file for this application, press Space to go into the group, and select the file from its file list.

Once one or more of an application's files are open, the names of the open files are shown (still with three dots) under the group icon, instead of the application name. You can move back to them by moving the highlight onto them and pressing Enter.

Note: if a file-based application has no files open, and you press Enter on its name under the group icon, a file of the same name - 'Word', for example - will be created or opened.

You can also select a file to use by positioning the highlight onto an application or (bold) filename under a group, then pressing Tab to use the file selector (as described in the 'Files and disks' chapter).

To go to an application in a group

You can go to any application in a group by moving the highlight in the System screen onto the application name (or one of its open files) and pressing the Space key.

You could also re-assign an application button or assign an application button and the Control key to the **group** icon on the System screen. (Re-assigning application buttons is described earlier in this chapter.) This would only allow you to move to the group icon, from another application, and you would then have to press Space to go into the group.

For quicker access to an application in the group, assign a Control-application button keypress to it. To do this: press Space to go into the group, and position the highlight to the application's icon. Then select the button keypress with the 'Assign button' option, in the usual way.

Removing icons from the System screen

You can, if you wish, remove any icon - application, list or group - from the System screen. This **only** affects what is shown on the System screen. No files are deleted, and no open files are exited.

-  You cannot remove all of the icons from the System screen - at least one must always be present.

To remove an icon:

1. Move the highlight in the System screen below the icon. (If the icon is **inside** a group, go into the group and highlight the icon.) Select the 'Remove' option on the 'Apps' menu.
2. Press 'Y' to confirm that you wish to remove the application. The icon and any file list are then deleted from the System screen.

Re-inserting an icon

You can re-insert an icon in any position on the System screen - in a group, if you wish. There are two menu options for re-installing an icon:

- The 'Install standard' option on the 'Apps' menu is used to install any of the standard applications supplied with your Series 3a.
- The 'Install' option on the 'Apps' menu is used to install duplicated icons, group icons and any add-on application icons you may have bought.

To re-install an icon:

1. If you want to move the icon anywhere other than the first or last positions on the screen, first place the highlight in the desired position: the icon will be re-installed to the left of the highlight.
2. Select 'Install standard' or 'Install', as appropriate, from the 'Apps' menu.
In the 'Install standard' option dialog, select the icon to install from the icons you have deleted. ('RunImg' and 'RunOpl', described later, are also offered as icons which can be installed, if they are not already shown in the System screen.)
In the 'Install' option dialog, set the 'Disk' line to the disk where the file is stored, then select the name of the file to install from the list of those available. Groups have filenames ending in `.grp`; lists have filenames ending in `.als`; application filenames end in `.app` or `.opa`.
3. Select the position for the icon: 'Last', 'First' or 'Current'. The 'Current' position refers to the position of the highlight on the System screen. Finally, press Enter.

Moving Icons


You might rearrange icons so that the ones you use less often are at the end of the row of icons on the System screen. This makes the icons you use frequently more easily accessible.

To move an icon you need to remove it, then re-install it in the position you choose. Instructions on how to remove and re-install icons are given above. Do not forget to use the correct option - 'Install' or 'Install standard' - for re-installing an icon.

The 'RunImg' icon and open files

If you use the 'Install standard' option on the System screen's 'Apps' menu, and install the 'RunImg' application, it will list the names of open applications/files whose icons have been removed from the System screen.

You can still switch to these open applications and files, by moving the highlight onto the list of names below the RunImg icon, and pressing Enter.

 RunImg also lists any IMG programs - a different kind of Series 3a program - which it finds in a \IMG\ directory on any disk.

RunImg does not go away automatically. If you move the highlight onto an application and press Delete to exit it, the RunImg icon remains, with the name "RunImg". You can remove the RunImg icon in the same way as other icons.


You can press Control and the System button to move to the RunImg icon, whatever you are doing on the Series 3a.

 You cannot create a new list for the RunImg icon.

The 'RunOpl icon' and translated OPL modules

If you have successfully translated an OPL module, the RunOpl icon will automatically be shown to the right of the Program icon. All translated OPL modules are shown beneath it. If you delete them all, however, the icon remains in the System screen, with the name 'RunOpl'.

You can press Control and the Calc button to move to the RunOpl icon.

 You can remove the RunOpl icon in the same way as other icons. **If you do remove it, it will not reappear automatically.** To see it you must re-install it with the 'Install standard' option on the 'Apps' menu.

See the Programming manual for more details.

Positioning to icons

Whichever application you are using on the Series 3a, if you hold down the Psion key and press one of the application buttons the System screen is displayed, and it tries to place the highlight on the file list below the relevant icon.

If, however, you have removed that icon, a message such as 'Calc is not installed' is displayed on the System screen to remind you that you have removed that icon.

Application information

Use the 'About application' option on the 'Info' menu of the System screen while selecting a file beneath an icon to see what kind of an application the icon represents.

Customising the System screen

Set preferences

The 'Set preferences' dialog controls three aspects of the System screen:

- Whenever an SSD is placed in a drive, or a file is deleted, copied or created, the file lists on the System screen are updated to display the files that are currently available. However, if you set the 'Update lists' line to 'System button', file lists will not be updated until you press the System button.
- Initially, if you want to open a file from the System screen without exiting the previously open file you must press **Shift-Enter** (instead of Enter). However, if you set the 'Open multiple files' line to 'Enter', the Enter key opens multiple files as well. This speeds up the opening of new files, as the Series 3a does not have to exit a file before opening each new file. However, more internal memory is used up in keeping more files open at once.
- If you change the 'Font' line from 'Swiss' to 'Roman', the file lists are displayed using a *serif* font. (Serifs are the "tails" on the corners of letters.)

You can also use the 'Zoom in' and 'Zoom out' options on the 'Special' menu to change the size of the font used for the file lists.

System-wide settings

Automatic switch off

To conserve power, your Series 3a is initially set to switch off automatically if you do not use it for a five minute period. However, automatic switch off does not occur if the Series 3a is busy - for example, printing a file.

You can change the automatic switch off time with the 'Auto switch off' option on the 'Control' menu:

- To disable the automatic switch off when the Series 3a is connected to external power, set the 'Auto switch off line to 'If no external power'.
- To disable the automatic switch off all the time, set the 'Auto switch off line to 'No'.
Warning: if you do disable the 'Auto switch off feature, the Series 3a will only turn off when you press Psion-1. the OFF keypress. **You should not in general disable 'Auto switch off while using battery power** - if you were to leave the Series 3a on by mistake even once, or if an alarm turned the Series 3a on while you were absent, it would stay on until the batteries failed. The Series 3a would then turn off. and you would not be able to use it at all until you changed the batteries.
- To alter the switch off time interval, change the setting on the 'Switch off time' line to the interval you require, within the range of 15 seconds to 18 hours.

Sound

Your Series 3a can make a variety of sounds, including alarms and key-clicks. The initial settings are for all the sound options to be turned on. However, if you wish you can change these settings to turn off some or all of the sounds.

Select the 'Sound' option on the 'Control' menu. You can make these changes:

- If you set the 'All sound' line to 'Off', this disables all sounds, including alarms and key clicks.
- If you set 'Alarm sounds' to 'Off', alarms will still "go off" (ie appear on the screen), but they will make no noise.
- You can set the 'Beep sounds' and 'Key click' lines to 'Loud', 'Off' or 'Quiet'.

Setting the "Evaluate" format

While editing Database or Agenda entries, or Word Processor or OPL Program files, you can use the 'Evaluate' options on the 'Edit' menu to work out a calculation. With the ' "Evaluate" format' option in the System screen you can set the format for results from 'Evaluate' (and the trigonometric unit assumed in such calculations):


1. Select the ' "Evaluate" format' option on the 'Control' menu.
2. Set the 'Format' line to the number format that you wish to use. If you select 'Fixed' or 'Scientific' you will also need to specify the number of 'Decimal places' or 'Significant digits' respectively.
3. Set the 'Trigonometry units' line to the trigonometric unit that you wish to use. Press Enter to complete the dialog.

See the Chapter on the Calculator for more information about "Evaluate", number formats and trigonometric units.

Setting the 'Number formats'

The 'Number formats' option on the 'Control' menu produces a dialog with a 'Number separators' line. If you press Tab on this line, a subdialog is shown which allows you to change the decimal point character, should you so wish. You can set it to a full stop or a comma. The Calculator will immediately take note of the change.

If you use a full stop as the decimal point character, use a comma between the parameters of functions (in Calc and Sheet) or OPL procedures (in Calc). If you use comma as the decimal point, use a semicolon in these situations.

 Even when comma is the decimal point character, you should still use a full stop as the decimal separator **in OPL programs**; commas are used to separate the parameters of a function or a procedure. However, the decimal point would be a comma in strings passed to VAL and EVAL, or returned by FIX\$, GEN\$ and SCIS. It would also be a comma when entering numbers to a running program - for example in response to INPUT- and in numbers displayed on the screen by the PRINT command.

The other settings in the 'Number formats' dialog - such as the currency symbol - affect the Spreadsheet, and are described in the Spreadsheet chapter. They may also be used by external applications which you add to your Series 3a.

Linking to another computer

You can link your Series 3a to another computer with the serial 3 Link lead. When you have attached the lead to both computers, you need to run certain programs on each computer before you can use the link: the 'Remote link' option on the 'Special' menu runs the program on the Series 3a.

See the 3 Link manual, and the "Comms" appendix to this manual, for more information about linking your Series 3a to another computer.

The "About Series 3a" screen

Use the 'About Series 3a' option on the 'Info' menu to redisplay the introductory/copyright screen.

17

Troubleshooting

General problems

If the SERIES 3a won't turn on

Check the screen contrast with Psion-> and Psion-<.

If you continue using the Series 3a when the main batteries are low it will eventually turn off and refuse to turn on again. You must then change the batteries before you can use it again.

If the SERIES 3a won't "auto turn off"

Check the 'Auto turn off' option in the System screen.

 If you use OPL, note that a running OPL program can prevent automatic turn off if it neither pauses nor waits for a keypress.

Screen too dark, or insufficient contrast

Change the screen contrast with Psion-> and Psion-<.

Beeping

The Series 3a will beep if you try to type in too many characters in a particular place - for example, when entering an agenda entry. It also beeps when unable to match letters that you type against a list of filenames, or World cities and countries.


The volume of these beeps is controlled by the 'Sound' option in the System screen.

When the power of the main batteries gets too low for the Series 3a to play digital sounds, alarms only produce short beeps.

Alarms not sounding

You may have turned the sound off permanently with the 'Sound' option on the System screen's 'Control' menu. Use it again to turn the sound back on.

Open Agenda files always inform the Time application about their **next** alarm only. (It is the Time application which actually rings the alarm.) When an Agenda alarm rings, the open Agenda file then informs Time of the next alarm it contains, and so on. So **if you exit an Agenda file, the Time application will still ring the Agenda file's next alarm, but will not be able to ring any others from that file until you open it again.**

 The Series 3a can only have 24 *processes* - open files and applications, for example - at one time. While you are at this limit, the Series 3a will not be able to play a sound file as an alarm, and will only beep instead. (If you are at this limit and you try 'Test sound' in the 'Set alarm' dialog to play a sound file, you will see a 'Too many processes' message.)

Flat batteries and "Auto switch off"

If you disable the 'Auto switch off' feature, the Series 3a will only turn off when you press Psion-1, the OFF keypress. You should not in general disable 'Auto switch off' while using battery power - if you were to leave the Series 3a on by mistake even once, or if an alarm turned the Series 3a on while you were absent, it would stay on until the batteries failed. The Series 3a would then turn off, and you would not be able to use it at all until you changed the batteries.

'Memory full', 'No system memory' or 'Disk full'


If you've almost filled up the internal memory with information on the Internal disk, you may find yourself unable to enter more information. A 'Memory full', 'No system memory' or 'Disk full' message will be shown.

- The Spreadsheet, Word Processor or Program editor need enough free memory to make a separate copy of the file to work with, as they do not use the file directly.
- Internal memory is also used to keep each file or application open. The name of each open file is shown in bold in the System screen. (You can open more than one file of the same type by using Shift-Enter in the System screen.)
- Translating large OPL programs requires a certain amount of free memory.

Many of the things you do on the Series 3a need just a little free memory in order to work - bringing up dialogs, menus, Help information, or the File Selector. These can also fail with a message like 'Memory full'.

Don't worry if you fill up memory - your information is still safe. Here are some ways to free more memory:

- Press the System button, move to a bold name at the top of a list, and press Delete. This exits an open file. You can even exit the Calculator in the same way. You might exit Calc and World for a while, or any Word files or programs that you are editing. (You can use the System screen's 'Exit all applications' option to exit them all, if you wish.)
- Use the Agenda's 'Compress' option on any agenda files on the internal disk. Then use the Database's 'Compress' option on any databases on the internal disk. This will reclaim any space taken up by deleted or edited information.
- Delete any unwanted files on the internal disk.
- Copy files to an SSD, then delete them from the internal disk.
- Sometimes you can free (temporarily) a certain amount of memory by moving to an open Spreadsheet, Database, Agenda or Word Processor file, and using the 'Copy text' option on as small an amount of information as possible. If you last used the option on a large area of text, the copy on the clipboard is thrown away, freeing some memory.

 If you edit a large file, then open a small file, the Word Processor or Program editor may under some circumstances still take up more internal memory than necessary for the new file. Exit the file, then open it again.

The Spreadsheet and Word Processor can sometimes produce these messages when their files approach their maximum size. See the notes under 'File size' in the Spreadsheet and Word Processor chapters.

Checking internal memory

If you want to keep an eye on the amount of internal memory which is still free, press the ♦ key in the System screen. You can then take early action to prevent the internal memory filling up, to avoid it happening at an inconvenient time.

The 'Memory info' option from the 'Info' menu in the System screen also shows you the amount of internal memory used and the amount free. If you press the ← and → keys, more details are given of what is using up the memory - the internal disk, each open Word Processor file, and so on. Memory is measured in K (short for *kilobyte*) - 1K can hold just over a thousand characters.

The Calculator uses a few K of internal memory. If you exit the Calculator, by moving the highlight onto it and pressing Delete, you can recover this memory. Of course, to use the Calculator in the future, you would need a few K of memory to be free. Time also uses a few K of memory, but you **cannot** exit it.

Everyday use

Problems with menus


You cannot use the Menu key to bring up a menu in these situations:

- While a dialog is being shown on the screen.
- While you are using Help on the screen.
- While setting a city's position in World.
- While full screen messages, such as alarms and disk error messages, are displayed.

Cut/Copy/Paste, and Delete/Undelete

If you've used commands like these in other personal computer software, note that the Series 3a combines the 'delete' and 'cut' ideas:

- When you *copy* highlighted information with the 'Copy...' menu options (such as 'Copy text'), a copy of the information is made on a separate area, sometimes called the *clipboard*. Any information previously on the clipboard is lost.

 There is no highlighting in the Agenda; just move onto the entry you want to cut or copy.

You can insert (*paste*) the information on the clipboard, as many times as you like, with the 'Insert...' menu options. (This is usually called 'Insert text'; in the Spreadsheet it is called 'Paste'.)

- When you *delete* highlighted information with the Delete key, it is deleted from the document, but is **also** put on the clipboard. (This also happens if you delete part of a line with Psion-Delete or Shift-Psion-Delete. If you just delete a single character with the Delete key, however, the clipboard is not affected.)

So if you delete information by mistake, you can use the 'Insert...' option to put it back (*undelete* it).

To delete highlighted information **without** replacing the clipboard, press Shift-Delete. (You cannot do this in the Spreadsheet, though.)

Each open application has its own clipboard. You can copy information to a file of the same kind by copying it, then using the 'Open file' option to open the second file. The clipboard still contains what you copied, so you can insert it in the second file.

To copy information to a file of a different type, use the 'Bring' options.

'File or device in use'

You will see a 'File or device in use' message if you try to copy, rename or delete a file shown in bold in the System screen's File lists. Exit it, by moving the highlight to it and pressing the Delete key, then try again.

If an opened file is busy for some reason, you cannot exit it.

You cannot open a file if that file is **already** open (or otherwise in use). For example, you might have two agendas called `Agenda` and `Business`, and use Shift-Enter on the System screen to open both files at the same time. If, while looking at `Business`, you use the 'Open file' option and try to open `Agenda`, a 'File or device in use' message is shown, as it is already open.

The same situation may occur if you use the file selector to open a different type of file. For example, if you try to open an OPL program file in the Word Processor, this will fail if the file is already opened under the Program editor.

You may also encounter this message if you have a link failure (eg from pulling out the cable) while copying to REM::, and you then try to access the file which was being copied. Turn 'Remote link' off in the System screen, and try again.

Problems with SSDs

Do not remove an SSD while information is being written to it, such as when using a 'Save as' or 'Copy file' option and choosing a file on the SSD drive. Information may also be written when you exit a file, to look at a new file.

If you do remove an SSD while it is being written to, a message is shown asking you to replace it. If the disk's *volume name* is `backup`, for example, the message is 'Please replace volume "backup"'.

You must either reinsert the disk and select 'Retry', or just select 'Fail'. You cannot use the Series 3a until you do so (although any alarms will still ring).

Important: If a file was being saved or written to in any way, and you select 'Fail', the file will almost certainly be corrupted and become unusable. You should then delete the file.

The 'Media is corrupt' message means that the Series 3a cannot read the structure of a disk. You may see it when trying to access an unformatted SSD. If the SSD is formatted, remove it, then re-insert it and try again. If you still can't get the Series 3a to access it, there may be a hardware problem with the SSD. Contact Psion Technical Support for information.

Three dots (...) in file lists

A file list can end with three dots (...), to signify that some files could not be shown.

Several things can cause this:

- It is possible to have more files for one icon than the System screen can handle. They will not be shown in the file list unless you delete some of the other files. Try creating a new list for this icon, and moving some of the files to this new list.
- Internal memory may have become filled by the generation of the file lists, causing one or more lists to be incomplete. You need to free some internal memory, as described above.
- An SSD door was opened while the lists were being updated.

To find out which of these caused '...' to be shown, try to move the highlight onto the '...' itself. A message will be shown, explaining the reason for the incomplete list.

The built-in applications

Deleting the first entry in a database

When you have just found an entry, you can always delete it with the Delete key. The main area of the 'Find' screen, where the entry is shown, has a highlighted border.

If, however, you have just moved to the 'Find' screen, the first entry is shown. The one-line box at the bottom is highlighted, ready for you to type a search clue. The Delete key will now delete characters you type, as when editing any kind of text on the Series 3a

If you want to delete the first entry, use the 'Delete entry' option on the 'Edit' menu. Alternatively, press Tab, and the main area of the screen will have the highlighted border. The Delete key can then be used to delete the entry.

Losing entries in the Agenda

If a repeating entry has a fixed end date, and is set to show 'Next only', the entry will vanish after its last occurrence. To make the entry reappear, temporarily set the date on the Series 3a back to before the last occurrence.

If a 'Merge in' fails (through lack of disk space, for example), it is possible for the Agenda to lose track of the number of to-do lists in the file. Create "new" lists, and any missing lists will reappear.

Trig functions in the Calculator

Functions such as 'Sin' and 'Cos' can work with either degrees or radians. (360 degrees equals 2π radians.) A 'Use radians'/'Use degrees' option on the 'Special' menu lets you swap between the two. You can also use the 'Format' option on the same menu.

World times

The biggest problem with calculating world times is "daylight saving", or summer times, where clocks are put forward, usually for the summer months. The dates these are set on vary from country to country, and sometimes even within a country; some countries do not use summer times at all.

The chapter on World describes summer times in detail. Countries around the world tend to fall into three separate zones, each with their own behaviour for summer times, and you can set summer times on and off at the appropriate time for these three zones.

However, if you're not concerned by some World times occasionally being wrong by an hour, think of World as two hemispheres - Northern/European combined, and Southern. When clocks go forward in your Home city, set your hemisphere 'On', and the other 'Off'. When clocks go back again, set your hemisphere 'Off', and the other 'On'.

'Module does not exist' in Calc

If you load an OPL module in the Calculator, it must be available for **all** future calculations. If you delete it, or remove the SSD which contains it, a 'Module does not exist' message will be shown **on every future calculation**. There are two ways to solve the problem:

- Reinsert or recreate the translated OPL module.
- Exit then reopen the Calculator.

Problems while printing

Margins are not checked against any indents used by the various styles in a Word Processor document. If you do set a style's indents so large that the paragraph will not fit on the page, paragraphs with this style will not print correctly.

If small areas of text are unexpectedly printed in the wrong font, or in bold, underline and so on, go to the top of the document, select the 'Emphasis Housekeeping' option and its 'Find' suboption, and set it to find 'All' emphases. This will show the first emphasis in the document. You can then skip through the document, from one emphasis to the next, with the 'Find again' option, to hunt down any unwanted emphases.

If you use the 'General' printer driver, you can still set font attributes - bold, underline, italic, superscript and subscript - both in the 'Default font' in an agenda or database, and in styles in a Word Processor document. However, they will **not** appear on any printout - only normal text will be used.

If a Word Processor document prints with blank lines between each line of text, this may just be because each line in your document is a separate paragraph - that is, you have pressed Enter after each line. Here are two ways to change the printout:

- Reformat the document, removing the line breaks inside each paragraph and letting the paragraphs *word-wrap*. Although paragraphs word-wrap at the screen edge, when you print them they will print all the way across the page, wrapping at the right margin.
- Use the 'Spacing' option. Reduce the size of the 'Space below' setting (to 0, if every line is double-spaced), and set the 'Alter' line to 'All using this style [BT]'
You might also do this if you type blank lines between paragraphs (by pressing Enter twice). However, you will have no fine control over inter-paragraph spacing, and blank lines may get printed at the tops of pages.

Password-protected files

If you have given a password to a Word Processor or Spreadsheet file, and then forgotten it, that file is no longer available to you.

If it is the only Word Processor or Spreadsheet file (perhaps still called 'Word' or 'Sheet'), you need to create a new file, and use that instead. Position the highlight under the Word or Sheet icon in the System screen, and use the 'New file' option on the 'File' menu. Enter a different name for the new file.

However, you will still be unable to access the password-protected file, until you remember the password.


Resetting the SERIES 3a

You should **never** need to reset your Series 3a. Even if an add-on application were to *crash*, the Series 3a is designed in such a way that it could not interfere with other applications, such as the built-in Database, Word Processor and so on. However, there is always some way to crash any computer.

If you do need to reset, gently press something like an unfolded paper clip into the reset hole (above the ON/Esc key). When you then turn the Series 3a on it will beep, show the start-up screen again, and then the System screen. Your files on the internal disk will almost always be safe. Any changes you had made to open Spreadsheet or Word Processor files (or OPL programs) would, however, be lost. This kind of reset is called a *soft reset*.

However, it is possible (though unlikely) that a crash can cause the reset to lose the information on the internal disk. It could even prevent the reset from working at all. If this were to happen, you would have to perform a *hard reset*. To do this, **hold down the right-hand Shift key**, and gently press a suitable object into the reset hole, as before. Press ON/Esc to turn on, **still holding down the right Shift key**. This will reset the Series 3a completely, and all information in internal memory, including the internal disk, will be lost.

 You may not need to press ON/Esc when resetting, as the Series 3a may turn itself on.

 The 'About Series 3a' option on the 'Info' menu of the System screen displays the introductory/copyright screen, together with the version number of the software in your Series 3a.

Killing a running application

You can kill any application (except Time) from the System screen - move the highlight onto the running application to kill, and select the 'Kill application' option on the 'Apps' menu. Again, you should never need to do this. The application is terminated with no chance to save any unsaved changes.

The Control-Shift-Psion-K keypress terminates the *foreground* process (the one currently **shown on screen**) without warning. Control-Shift-Psion-K is an emergency keypress. If you use it carelessly you will probably regret it.

A

Character set

The Series 3a contains many fonts, but all have the same basic character set. This is the IBM Code Page 850 character set. Characters with decimal codes from 32 to 127 are the same as ASCII characters. Those from 0 to 32 are special control codes.

These are the characters available on the Series 3a. For each character, first the decimal, then the hexadecimal code is given. 32 is the space character.

32 20	33 21	!	34 22	"	35 23	#	
36 24	\$	37 35	%	38 26	&	39 27	'
40 28	(41 29)	42 2A	*	43 2B	+
44 2C	,	45 2D	-	46 2E	.	47 2F	/
48 30	0	49 31	1	50 32	2	51 33	3
52 34	4	53 35	5	54 36	6	55 37	7
56 38	8	57 39	9	58 3A	:	59 3B	;
60 3C	<	61 3D	=	62 3E	>	63 3F	?
64 40	@	65 41	A	66 42	B	67 43	C
68 44	D	69 45	E	70 46	F	71 47	G
72 48	H	73 49	I	74 4A	J	75 4B	K
76 4C	L	77 4D	M	78 4E	N	79 4F	O
80 50	P	81 51	Q	82 52	R	83 53	S
84 54	T	85 55	U	86 56	V	87 57	W
88 58	X	89 59	Y	90 5A	Z	91 5B	[
92 5C	\	93 5D]	94 5E	^	95 5F	_
96 60	`	97 61	a	98 62	b	99 63	c
100 64	d	101 65	e	102 66	f	103 67	g
104 68	h	105 69	i	106 6A	j	107 6B	k
108 6C	l	109 6D	m	110 6E	n	111 6F	o
112 70	p	113 71	q	114 72	r	115 73	s
116 74	t	117 75	u	118 76	v	119 77	w
120 78	x	121 79	y	122 7A	z	123 7B	{
124 7C		125 7D	}	126 7E	~	127 7F	Δ
128 80	Ç	129 81	ü	130 82	é	131 83	â
132 84	ä	133 85	å	134 86	â	135 87	ç
136 88	ê	137 89	ë	138 8A	è	139 8B	ï
140 8C	î	141 8D	ì	142 8E	Ä	143 8F	Å
144 90	É	145 91	æ	146 92	Æ	147 93	ô
148 94	ö	149 95	ò	150 96	û	151 97	ù
152 98	ÿ	153 99	Ö	154 9A	Ü	155 9B	ø
156 9C	£	157 9D	Ø	158 9E	×	159 9F	f
160 A0	á	161 A1	í	162 A2	ó	163 A3	ú
164 A4	ñ	165 A5	Ñ	166 A6	ª	167 A7	º
168 A8	¿	169 A9	®	170 AA	¬	171 AB	½

172 AC ¼	173 AD ï	174 AE «	175 AF »
176 B0 ☐	177 B1 ☐	178 B2 ☐	179 B3
180 B4 †	181 B5 Á	182 B6 Â	183 B7 À
184 B8 ©	185 B9 ¶	186 BA	187 BB ¶
188 BC ¶	189 BD ¢	190 BE ¥	191 BF ¶
192 C0 L	193 C1 †	194 C2 †	195 C3 †
196 C4 -	197 C5 †	198 C6 ã	199 C7 Ä
200 C8 ¶	201 C9 ¶	202 CA ¶	203 CB ¶
204 CC ¶	205 CD =	206 CE ¶	207 CF ¶
208 D0 ð	209 D1 Ð	210 D2 Ê	211 D3 È
212 D4 È	213 D5 ı	214 D6 Í	215 D7 Î
216 D8 Ï	217 D9 †	218 DA ¶	219 DB ■
220 DC ■	221 DD †	222 DE Ì	223 DF ■
224 E0 Ó	225 E1 ß	226 E2 Ô	227 E3 Ò
228 E4 Õ	229 E5 Õ	230 E6 µ	231 E7 þ
232 E8 Þ	233 E9 Ú	234 EA Û	235 EB Û
236 EC Ý	237 ED Ý	238 EE -	239 EF ´
240 F0 -	241 F1 ±	242 F2 =	243 F3 ¾
244 F4 ¶	245 F5 §	246 F6 ÷	247 F7 ˆ
248 F8 °	249 F9 ¨	250 FA ·	251 FB ı
252 FC ³	253 FD ²	254 FE ■	255 FF

Entering characters at the keyboard

Any of the characters in the character set can be entered directly from the keyboard:

- Look up the decimal code of the character you want in the preceding table.
- Hold down the Control key and type the 3-digit code, then release the Control key.

Make sure you add preceding zeros if necessary to make a code three digits long - for example, use Control-096 to enter a left single quote, `

Accented characters

The Control key turns the number keys 1 to 6 into accent keys (Control-1 is a special case - see overleaf):

"	umlaut/diaeresis 2
\	grave 3
/	acute 4
~	tilde 5
^	circumflex 6

The letters a, e, i, n, o, u, y (upper or lower case) can be accented, as appropriate.

To get the accent, hold down the Control key while you press the accent's number.

Then press the letter to be accented. It will appear on the screen with an accent.

Examples:

à -	type:	Control-3 a
ü -		Control-2 u
ñ -		Control-5 n

To get the letters in upper case, either have Caps Lock on or hold down a Shift key while you enter the letter.

Example:

Ñ - type: Control-5 Shift-n

Other characters

The following characters are also available:

Press Control-1 Result:
and then:

a, A	å, Å
c, C	ç, Ç
d, D	ð, Ð
e, E	æ, Æ
o, O	ø, Ø
t, T	þ, Þ

To get the upper case versions, have Caps Lock on. or hold down either Shift key.

Press Control-1 Result:
and then:

s	ß
l	«
r	»
q	¿
x	¡
p	£

All of these characters are part of the character set given above.

B

Specification

Dimensions:

Size: 165mm x 85mm x 22mm (6.5" x 3.3" x 0.9").

Weight: 275g including batteries.

Screen:

480x160 graphics screen, up to 80 characters by 25 lines.

High contrast, retardation film LCD.

Internal memory:

ROM: 1Mbyte containing multi-tasking, windowing operating system. Microsoft MS-DOS Rash Filing System, and software applications.

RAM: 256k or 512k.

Solid State Disks:

Size: 63mm x 43mm x 6mm/2.5" x 1.75" x 0.2".

MS-DOS format for compatibility with desktop computers.

Rash SSDs require no battery backup: capacity up to 2 Mbytes (July 93).

RAM SSDs have their own Lithium battery; capacity up to 1 Mbyte (July 93).

2 drives giving up to 4 Mbytes storage (July 93).

Processor:

16 bit NEC V30H (80C86 compatible), 7.68 MHz.

Sound:

Loudspeaker, with DTMF auto-dialling and digital sound playback

Microphone for digital sound recording

Power:

2 x AA size Alkaline batteries, giving approximately 80 hrs use (without expansions)-
2-4 months of typical usage.

Standard Lithium backup battery protects RAM while main batteries are changed.

External AC adaptor optional (9-10v 150mA).

Keyboard:

58 key, QWERTY layout, computer-style keyboard.

8 touch-sensitive buttons for application selection.

Operating temperature:

0-50 degrees C.

Communications options:

Fast serial interface (1.536 Mbits/sec) accepts optional 3 Link interface to computers, modems and printers.

- Optional serial 3 Link provides RS232 link to other computers, modems and serial printers.

Provides XMODEM and YMODEM protocols, giving compatibility with most computer communications software.

Full script language with sample scripts allows automated log-on to electronic mail and other systems, and control of modems.

Additional software supplied provides a simple interface for exchanging information with IBM PC compatibles and the Apple Macintosh, giving direct remote file access.

- Optional parallel 3 Link provides Centronics interface for parallel printers.

C

For Series 3 users

This appendix should give users of the Psion Series 3 a quick guide to the main changes they will encounter when using the Series 3a. It is by no means a complete list of changes.

General changes

Hardware and power


The Series 3a screen has 480x160 pixels (four times as many as on the Series 3), and has a grey plane (ie displays black-grey-white). Its CPU runs at twice the speed of the Series 3. Two versions are available, with 256k or 512k internal memory.

The speaker is larger and louder, and a microphone is built in. DTMF dialling should work if you just hold the telephone mouthpiece over the Series 3a. Digital sound can be played and recorded.

The application buttons can be used to turn the Series 3a on. The 'Program' button has been replaced by a 'Sheet' button, for accessing the built-in Spreadsheet. You can still select the Program editor from the System screen, or by pressing Control-Word.


The battery life should be similar to that of the Series 3. More accurate battery monitoring is provided. If you wish, you can set the Series 3a to perform automatic switch off only if no external power (mains) is detected.

The Series 3a can check the state of the battery in some kinds of Ram SSDs.

-  Resetting the Series 3a is slightly different. To perform a soft reset press something suitable into the reset hole. When you then press ON/Esc you will hear the beeps. **Any unsaved changes in open applications will be lost.** A hard reset is performed in the same way as this, except you hold down the right Shift key while pressing the reset hole and ON/Esc. **This loses all information held in the internal memory.**

Add-ons

Programs written in 'C' and OPL for the Series 3 run unchanged in *compatibility mode*. Four pixels are set for each Series 3 pixel, "reducing" the screen size to the same 240x80.

-  If the program supports changing between different screens, this will be with the **◆** key, not with the application buttons. There are more details in the "Compatibility" section of the Programming Manual.

The Series 3 Spellchecker and Thesaurus can be used, both on their own and from inside the Word Processor.

Use only Series 3/Series 3a mains supplies. In particular, **do not use power supplies intended for use with the Psion MC range of computers.** These are likely to damage the Series 3a.

Existing 3 Link leads - serial and parallel - can be used with the Series 3a. New 'Comms' and 'Script' applications, supplied in the *ROM* of the Series 3a, replace those supplied on the 3 Link lead itself. **Just install the applications from the 3 Link lead as before; the Series 3a recognises the 3 Link applications, and automatically installs the ones in the ROM instead.**

The Series 3a can drive the serial 3 Link lead at 19200 Baud. See Appendix D for more about 3 Link.

The built-in applications

Changes across the applications

There are two sizes of status window available from Control-Menu. They show far more information, including Caps Lock, the presence of SSDs, whether the serial port is in use, and "low battery" / "replace battery" symbols. (You can use the 'Status window' option in the System screen to disable the display of any of these.)

The Series 3a uses the **◆** key to go between different screens in an application, while the Series 3 uses application buttons. (On the Series 3a, application buttons switch between open instances of the same application - eg between two open Word Processor files.) The different screens are shown towards the top of the status window. There are also ordinary menu options, with hot-keys, for moving to each screen.

Many hot-keys use both the Shift and Psion keys as part of their keypress.

Some changes have been made to menu options, hot-keys, dialogs and screen messages, for the sake of standardisation across applications. For example, most applications have a 'Set preferences' option, with hot-key Psion-Q.

Most applications also have 'Zoom in' / 'Zoom out' options, on the 'Special' menu, for changing the size of the screen font.

Applications which can print have a 'Print preview' option on the 'Special' menu. Use this to check the appearance of your printout before you print it

More help text is available in each application.

System screen


You can group applications together, to reduce the length of the list of icons: use 'Create new group', press the Spacebar to go into the group, and use 'Install' or 'Install standard'. You can also make new file lists for applications, with 'Create new list'.

Use the 'About application' option for information on a particular icon.

Incremental backup has been made easier, with the 'Backup files' and 'Restore files' options.

You can change between a *serif* and *sans-serif* font for the file lists. Use 'Set preferences', and set the 'Font' line.

A 'Usage monitor' option shows you the way you have used the Series 3a, including the time it has been used on batteries, the average battery power and so on.

 The 'RunImg' icon no longer appears if you remove the icon of an open application. You must use 'install standard' if you want RunImg installed.

Database

Both the 'Change' and 'Update entry' options let you alter an existing entry. ('Update entry' was kept for the benefit of Series 3 users.) If you use the 'Set up **◆** list' option you can make the 'Change' screen available from the **◆** key.

There are new options to search on a particular label only, to search from the currently found entry, and to jump to an entry by its position in the database.

Word Processor

An 'Exit, lose changes' option lets you exit without saving changes to file.

When you copy or delete highlighted areas when editing an outline, paragraphs between those shown in Outline are also copied or deleted. 'Expand outline' and 'Collapse outline' options let you change the outline level by 1.

'Alter paragraph' has been replaced by separate 'Font', 'Indents', 'Tabs', 'Alignment' and 'Spacing' options. Each of these has a new line in its dialog which lets you change just the current paragraph(s), like 'Alter paragraph' on the Series 3, or **all paragraphs which use the same style**. They thus provide a "back door" into using styles.

The 'Styles' and 'Emphases' options have each been broken in two, with a 'gallery' option for changing settings, and a 'housekeeping' option for applying, deleting, renaming and so on.

The settings in the Series 3 'Show as symbols' dialog are now part of 'Set preferences' instead.

With the 'Create new list' option in the System screen, you can make as many separate lists as you want for different kinds of documents. (The name of the default template for each list is the same as the name of each list itself.)

You can use the Word Processor as a plain text editor, if you wish: use 'Create new list' in the System screen, and leave the 'Type' line set to 'Text editor'.

Agenda

The Series 3a Agenda is a completely new application, with many new features including dated to-dos, multiple to-do lists, anniversaries, memos on entries, DTMF dialling, and a Year planner view. See the note on file compatibility at the end of this chapter.

Time

Alarms can have a text message. You can enter an alarm just by typing the text or the time you want. You can enter up to 6 alarms in the 'Time' application.

A 'View next alarms' option lets you see all of the alarms which the 'Time' application has been informed of, which includes one per Agenda file which is open (or has been opened). If 'Time' finds the corresponding Agenda file is no longer open, it gives you the chance to delete the corresponding alarm.

Note that the hot-key for 'Disable alarm' has changed.

You can use recorded sounds as alarm sounds.

World

There are more cities in the World application - around 500.

The World screen shows the sunrise/sunset times of your Home city.

Note that the 'Defaults' option on the 'Dial' menu has become the 'Dialling' option in the System screen.

Calculator

The Enter key always calculates the expression on the calculation line. To copy something from the list into the calculation line use Psion-Enter (or select the 'Copy from list' option).

The hot-keys for 'asin(x)', 'acos(x)' and 'asin(x)' have changed to Shift-Psion-S/C/T.

Program editor

The 'Program editor' includes an 'S3 translate' option, for producing translated modules which can run on both Series 3 and Series 3a. Of course, you must only use OPL keywords as supported on the Series 3 if you want to do this.

Spreadsheet

The Series 3a Spreadsheet is very similar to the Spreadsheet supplied on SSD for the Series 3 (and built into some versions of the Series 3).

It has a 'Password' option, which lets you protect a worksheet with a password. (This also encrypts it.)

An 'Exit, lose changes' option lets you exit without saving changes to file.

The 'Data' and 'Print' submenus have been replaced by separate menu options.

Sound recorder

A new application, 'Record', lets you record and play back sound and voice, and record new alarm sounds. It is described in an earlier chapter.

Other software changes

More printer drivers are supplied in the Series 3a. If you have any Series 3 printer drivers on disk, try your Series 3a without these files being available. If the Series 3a already has a driver for your printer, you should use this and delete your old driver from the disk.

 The old 'Postscript' driver has been replaced by one which is identical to the 'Apple LaserWriter' driver.

A new system of international dialling is supported. You can enter international numbers by beginning them with a + , then the country code. Many business numbers are written this way nowadays. You can enter the Swedish number 031-999999 , for example, as +46-31-999999 , or +46-(0)31-999999 . (You can enter and dial phone numbers in the Agenda as well as the Database.)

File compatibility

You can transfer files and disks from the Series 3 to the Series 3a, and (in general) back again. Be sure to exit any open files before you do so.

The Series 3a Agenda converts Series 3 Agenda files. This is a one-way conversion - you will not be able transfer the Agenda file back from the Series 3a to the Series 3. Use the 'Open file' option to open your Series 3 file. A dialog asks you for the name to use for the new converted file. Enter a new filename; the Agenda will not allow you to overwrite an existing file.

The 256k model of the Series 3a has less free internal memory than the 256k Series 3 (mainly because of the increased screen size). If the internal disk of your 256k Series 3 was nearly full of files, you may not be able to transfer all of them onto the internal disk of the Series 3a.

If you password-protect a Series 3a Spreadsheet file, you will not be able to open it on the Series 3. You must remove the password before you can do so.

World files (which contain information on added/modified cities and countries) cannot be exchanged between the Series 3 and Series 3a.

Script files (for the Comms application) translated on the Series 3a cannot be used on the Series 3.

D

Serial 3 Link

The manual for serial 3 Link describes how it is used on a Series 3. This appendix explains the differences you will see if you use it on a Series 3a.

Remote Link

As on the Series 3, use the 'Remote link' option on the System screen to prepare to link the drives on the Series 3a with those on an attached PC or Macintosh.

'Remote link' can run at 19,200 Baud on the Series 3a. If you can set the software on the PC / Macintosh to run at 19,200 Baud, you can transfer files twice as fast as on a Series 3.

The Comms application

A new 'Comms' application, supplied in the *ROM* of the Series 3a, replaces that supplied on the 3 Link lead itself. **Just install 'Comms' as if from the 3 Link lead; the Series 3a recognises what is happening, and automatically installs the one in the ROM instead.**

The Comms application in the Series 3a is designed to make full use of the Series 3a screen. Also, as it is running from the ROM instead of being loaded into memory, it uses far less internal memory.


 It is still possible to install the old applications from the 3 Link lead. To do so, complete the 'Install' dialog by pressing **Shift-Enter**.

Comms and the SERIES 3a screen

Comms now has a 'Screen rows' option on the 'Screen' menu, to control how big the underlying screen area should be - how many lines are remembered, for you to scroll through with ↑↓. By default it is 25, but you can set it from 25 to 100.

A 'Border on/off' option, also on the 'Screen' menu, controls whether the border is drawn around the outside of the screen. Without it, there is slightly more room for text.

The 'Zoom in' and 'Zoom out' options on the 'Special' menu change between four sizes of display font. **With the border off, these four fonts give 52x14, 60x20, 80x20 and 80x26 characters.**

 To see the 26th line with the 80x26 font, you must increase the 'Screen rows' setting. Comms on the Series 3a supports status windows - press Control-Menu, as normal.

Serial communication

The 'Port' option supports a 19200 Baud setting.

The status window

If you see the Link indicator in the status window, but 'Remote link' is not on, chances are you are still in 'Comms'.

If you remove the 'Comms' application while you are still using it, the Link indicator stays on. You will have to get back to the 'Comms' application - perhaps by pressing Shift-System - and exit it.

Opening and exiting Comms

You can now create new files for Comms by using the 'New file' option in the System screen. As well as creating the translated script this also creates the script of the same name, under the Script icon. (The 'Save settings' option in 'Comms' also does this.) It will contain a SETUP command listing the settings in force when the file was created.

The Script application

Script, as before, just runs a variant of the Word Processor application. **Install it as if from the 3 Link lead, as with Comms; the Series 3a automatically installs the one in the ROM instead.**

Changes to the script language

There are five new parameters to the SETUP command:

- BORDER ON / BORDER OFF is like the 'Border on/off option.
 - LINES [number] is like 'Screen rows', from 25-100.
 - WRAP [number] is like 'Bring margin', from 1-80.
 - FONT 0/1/2/3 is like 'Zoom in/out'-0 is smallest font, 3 is biggest.
 - STATUS [number] sets the status window - 0 for none, 1 for small, 2 for large.
- SETUP also supports a 19200 Baud setting.

A new script command, QUIT , exits Comms entirely.

New advanced script commands

- PORT "string" selects the port to use. If none is given then TTY:A will be selected, PORT should be executed before any commands such as SETUP etc.
- LOAD "string" loads a *device driver*- an .LDD or .PDD, depending on the file extension. (If no extension is provided .LDD will be assumed.) The string you pass should include a full path name.

On the Series 3, Comms opens the serial port (*TTY.A*) as soon as it starts and before it runs any script commands. On the Series 3a it delays the initialisation of the port until the first command is executed which uses the comms port, or until it goes online. This allows you to use LOAD to load a device driver, and then use PORT to select a "port" supplied by the device driver.

A device loaded in this way will be automatically unloaded when the Comms program terminates. Only one device driver can be loaded during a single execution of Comms.

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NOTES