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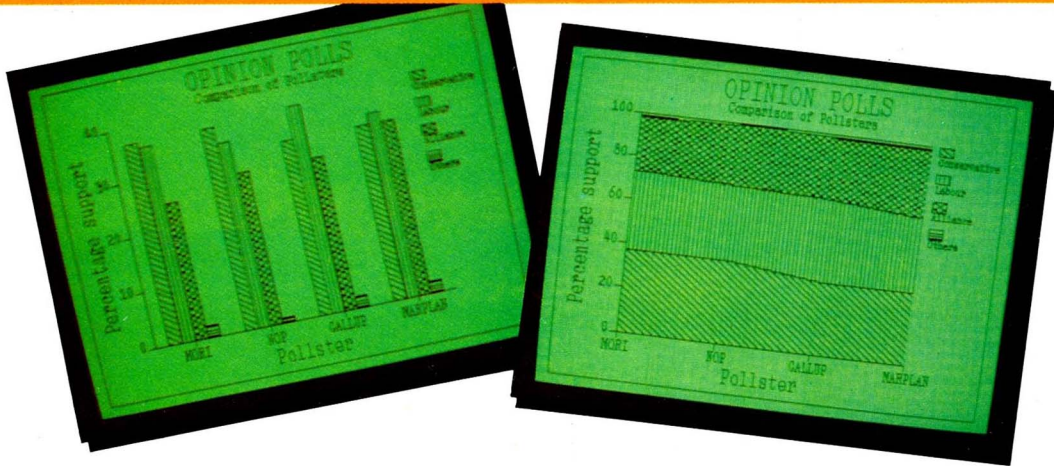
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To help you through this maze of products, we've divided them into 15 sections. But whether you're a PCW novice or a micro veteran, the following points will help you get the most from the guide.

- No one program will suit every situation. Where we've looked at a product in-depth, it's not necessarily because it's the best.
- The extended reviews show what you can expect from a representative package. Where there are several examples, they cover various levels of sophistication.
- Check with the distributor before ordering by mail. Software prices have even been known to go down!
- In most cases, prices shown include VAT.
- We've tried to keep the lists as up-to-date as possible. But this is a fast moving industry, so check the Update section.

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The Complete Guide to the Amstrad PCW 8256 & 8512

Introduction

From unpacking the PCW to understanding CP/M.

Word Processing

Locoscript/WordStar/NewWord/Superwriter/Tasword 8000/Others

The war of the words – taking Locoscript to task.

Databases

Dataflow & Mailflow/dBase II/Others

Our file on intelligent information handling.

Figures

ScratchPad/Cracker/Oxstat

How spreadsheets spread the load of complex calculations.

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Money Manager/MAP Integrated Accounts/Others

Calculating the cost of computerising your accounts.

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Cover Photography by Chris Stevens

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The Amstrad PCWs have revolutionised computing overnight. Not long ago a micro capable of running serious applications was beyond the reach of the individual's pocket: now that power is available to everyone.

The PCW - computing power without the price

In those pre-PCW days, few small businesses could afford a micro, though a hard-pressed one or two person concern could easily profit as much from office automation as the bigger companies, which took it for granted. A computer can take care of many of those mundane chores that waste so much of the working day.

Then the PCWs arrived, providing a one plug system. The compatibility problems, that often face new users were banished. You just connect the three units together,

attach a 13 amp plug to the flex and away you go, safe in the knowledge that the printer will work with the computer.

Secondly, though the PCWs are fully fledged word processors, running a very satisfactory program, **Locoscript**, they are also computers in their own right. They come complete with a standard operating system, CP/M, which allows them to run a vast number of business programs, identical to those available for their bigger brothers.

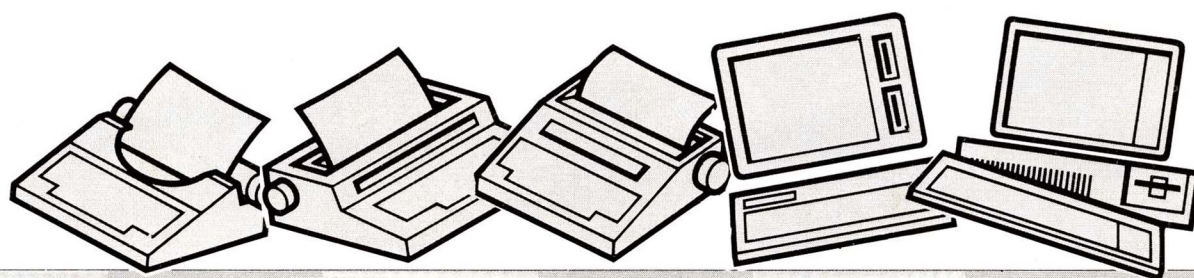
The third step on the PCW road to success is its price. It's not just that for £400 you have a complete system; the reduction in the cost of hardware has led to a reduction in the price of business software too. As publishers realised that there was a market for their products, they dropped the prices of the PCW versions, bringing them into line with the machine itself. For £100 you can buy programs that costs five times as much in their original formats.

Are there points against the Amstrad? A few, perhaps, though they're fast becoming irrelevant. The 3" discs were once in short supply; happily that situation now seems to be a thing of the past. The complete system approach also meant that you had to use the Amstrad printer. While it is very good, it cannot match the quality of a daisy wheel. Alternatives are now becoming available.

The documentation is probably the worst aspect of the package, but training courses are available all over the country and alternative instructions are flooding into the bookshops. Now that half a million PCWs have been sold, business computing will never be the same again. Join the Joyce revolution!

Alternatives to the Amstrad PCW

If you're still considering whether to buy an Amstrad PCW, this chart should help you to weigh up the pros and cons.



| | Manual Typewriter | Electric Typewriter | Electronic Typewriter | Amstrad PCW Computer | PC Clone Computer |
|-----------------------------|-------------------------------------|---|---|--|---|
| TYPING | | | | | |
| Tabs | Not on cheapest models | Limited | Yes | Yes | Yes |
| Correction Facilities | No | No | Yes | Yes | Yes |
| Multiple Copies | No | No | No | Yes | Yes |
| Document Copies | No | No | No | Yes | Yes |
| Document Storage | No | No | No | Yes | Yes |
| Type Quality | Uneven | Good to excellent | Good to excellent | Good to excellent depending on printer quality | Good to excellent depending on printer quality |
| Variables Typefaces | No | No | Yes | Yes | Yes |
| OTHER USES | | | | | |
| Other Business Applications | No | No | No | Many | Many |
| Range of Software | N/A | N/A | N/A | Large | Large |
| Prices of Software | N/A | N/A | N/A | Low to medium | Medium to high |
| COST | | | | | |
| Minimum Price | £40 | £170 | £450 not including disc drive | £459/574 complete | £850 with basic printer |
| CONCLUSION | | | | | |
| | Cheap but old fashioned and clumsy. | Quality type but lacks correction facilities. | Why restrict yourself when a micro can do more? | Unbeatable value for many, opening up a world of business computing. | Powerful but at this price for dedicated users only |

INTRODUCTION

When you first open the box, you may be intimidated by the carefully packed components that make up your PCW. Half an hour studying the User Guide will show you how to connect everything, but there are a number of useful hints which the manual omits. . .

Establishing a workstation

The screen is your main output device while working with the PCW, so position it at a comfortable viewing distance, around 18" from your eyes. Don't place it opposite a light source, to avoid reflections. Keep it clean, to avoid glare and perhaps use an anti-glare shield.

Position the keyboard at a comfortable typing height, so that your fingers rest lightly on the keys. Frequent rests will help but it's worth investing in a special table and chair if you want to work for hours without backstrain.

Do take time setting up your Amstrad, because a little thought at the start can save an awful lot of inconvenience later. Even before you unpack, clear your workspace or vital components will vanish into a pile of polystyrene. Also note that Amstrad advises you to keep the packaging in case you have to return the machine for repair.

There are three major parts to the PCW: the keyboard, which looks very much like a standard typewriter, with a handful of extra keys to the right; the printer, with its continuous paper and sheet feeds, which are packed separately; the monitor, which contains the computer itself and one or two disc drives, depending on whether you have an 8256 or an 8512.

So much for the hardware; but you are also provided with some software. A computer can do nothing without instructions, and these are contained on the two discs that you'll find in the package. You'll need blank discs too, so buy at least two with your PCW. We look at discs more closely on the next page.

Now its time to connect all the pieces, put a plug on the power cable, and remove the card that protects the disc drives during transit. But as you'll sometimes be using the machine for long periods, take note of the tips below, to make working with your PCW a more comfortable affair.

The brightness knob is not only useful for avoiding eyestrain caused by too much contrast. It can also be used to fade the screen when you are not using the PCW, preventing 'image burn'.

Single density disc drive. When switched on the computer automatically looks for a disc in here. If it doesn't find one after a few minutes it will beep then switch itself off. To reset, press the Space Bar. Never remove a disc while the red light is on; you could damage the disc and the

head that's reading it. Before you Power Up or Switch Off, check that the disc drives are empty, or the power surge could corrupt data. Unless you are leaving the machine unattended for a long time it is probably better to leave it on, with the screen dimmed.

Be careful not to damage the vertical extension port edge connector on the rear as it's your plug point for many peripherals. If you have problems with image stability, note that there are vertical and horizontal hold knobs at the back.

The short length of the printer ribbon cable means that the printer almost always has to be placed to the right of the machine. Extensions are available from the companies listed in the services section.

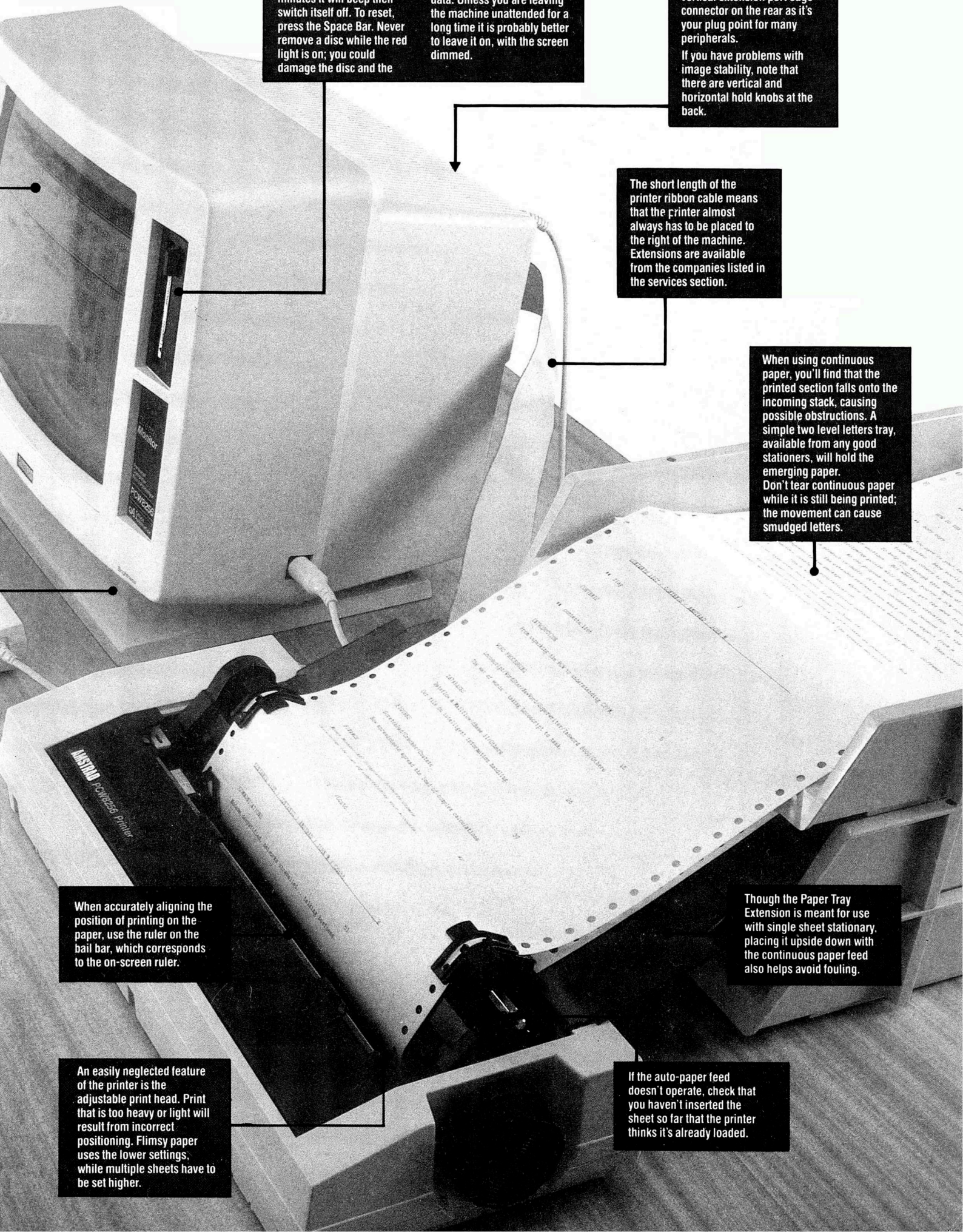
When using continuous paper, you'll find that the printed section falls onto the incoming stack, causing possible obstructions. A simple two level letters tray, available from any good stationers, will hold the emerging paper. Don't tear continuous paper while it is still being printed; the movement can cause smudged letters.

When accurately aligning the position of printing on the paper, use the ruler on the bail bar, which corresponds to the on-screen ruler.

Though the Paper Tray Extension is meant for use with single sheet stationary, placing it upside down with the continuous paper feed also helps avoid fouling.

An easily neglected feature of the printer is the adjustable print head. Print that is too heavy or light will result from incorrect positioning. Flimsy paper uses the lower settings, while multiple sheets have to be set higher.

If the auto-paper feed doesn't operate, check that you haven't inserted the sheet so far that the printer thinks it's already loaded.



INTRODUCTION

Without a way of storing programs and data, a computer would be of very little use. Magnetic discs provide a speedy method of storing and retrieving information. But you will encounter several kinds of disc when you start to use your Amstrad.

Discs and Drives

Every PCW comes complete with at least one hardware disc drive. This is referred to as Drive A by **Locoscript**, or any other program that you might run. If you own an 8512, or have added a second drive to an 8256, then this will be called Drive B. When a program expects two drives it will sometimes refer to A as B whenever it expects you to change discs.

In addition there is Drive M, an area of memory which can be used for storage like a 3" floppy disc while the computer is running. It is found in both models, though the 8512 has larger capacity.

Accessing Drive M information is faster than reading from a disc, but everything held in the drive vanishes when you switch off the machine. So it's unwise to use it for anything you cannot afford to lose, unless you're prepared to save to Drives A or B at regular intervals.

There is also a difference between Single and Double Density discs, which is most relevant if you own an expanded machine. A Double Density disc can hold 720K of program or information, and uses a double headed drive which stores twice the number of tracks on each side. It can read from both sides of the disc without it being turned over. Always insert a CF-2DD disc with Side

A nearest the screen.

In theory CF-2 and CF2DD disks are not interchangeable, but if you have created a Double Density disc in drive B and then want to use it for a read only operation in A, you can do so.

The only other difference in disc types

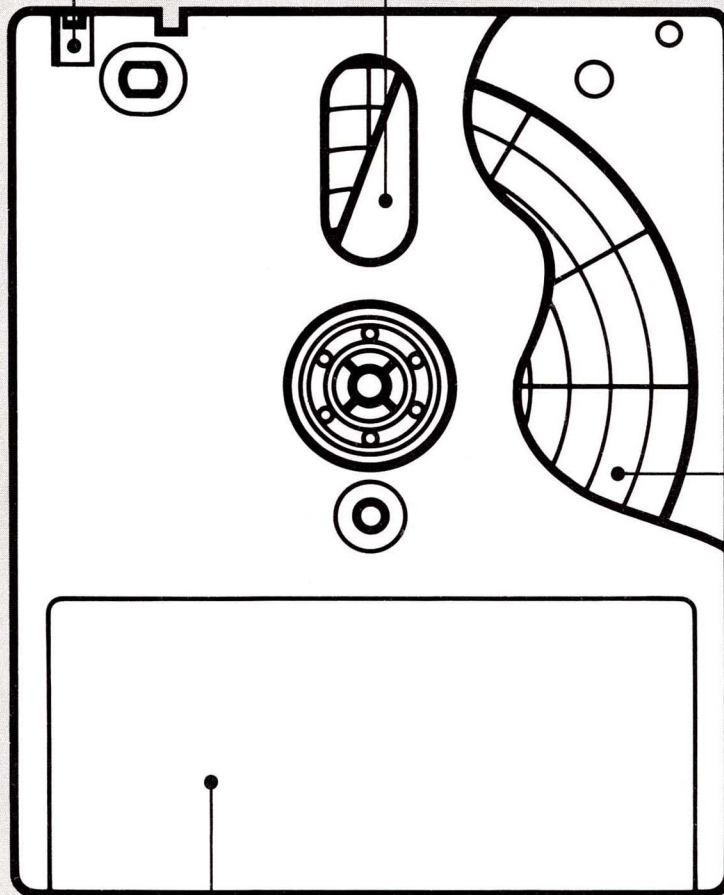
concerns what you store on them rather than their physical characteristics. Distribution discs are issued by software manufacturers and the only time you should use them in the machine is to make a copy.

This is called a Start of Day copy, and if it becomes corrupted it can always be replaced. The other type of disc is a File Disc, which only holds the information that you are processing. There is no need to keep the **Locoscript** operating system on your File Discs, for example. Load the program, then change to a newly formatted disc, hitting [f1], and you will have lots more storage space. But **Locoscript** stores files in a different form from most other programs, so it is unwise to mix its files with ASCII ones.

Anatomy of a Disc

The write protect tab. When the tiny hole behind the sliding shutter is uncovered you cannot Save or Write to the disc. This prevents overwriting valuable programs.

The shutter withdraws when you insert the disc into the drive, which is pulled back by the lever on the side of the case.



A simple point, but label all discs immediately, as one looks very much like another.

The disc surface is divided into a series of tracks and sectors, established when you format it. These are filled with information, one by one. As the disc fills, the head may have to search through more sectors before it locates all of the code.

Do's and Dont's of Disc care

The 3" discs used by Amstrad are far sturdier than the traditional 5 1/4" format. You can happily carry them around in a briefcase or pocket. But it is still possible to lose valuable data, so treat your floppies with care.

DO keep your discs in their cases, safe from dust.

DON'T place discs near magnetic fields; avoid loudspeakers, transformers, and the PCW monitor itself.

DO save at regular intervals. A mains interruption could erase all the work that you've done so decide how much you'd be willing to rewrite, and save before that point.

DON'T pull back the shutters, revealing the disc surface, or do anything that could damage them.

DO back up all files and keep these 'insurance' discs in a separate room if possible.

DON'T use distribution discs; always make copies.

DO label all discs, and keep them in a logical order.

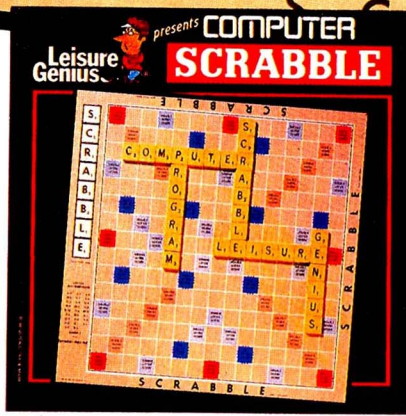
DON'T turn the machine on or off with a disc in the drive.



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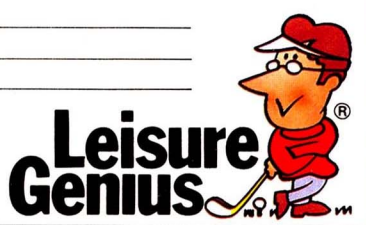
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To unlock fully the potential of your PCW you need a key. The CP/M Plus operating system. CP/M unlocks the gates to literally hundreds of software packages, but to turn that key you need a basic understanding of how CP/M works.

Understanding CP/M

There are occasions when you'll pick up a new disc, place it in the drive, and it will run immediately. But more often than not you have to load CP/M first. Even then the program may not run until you have made certain modifications. And even if you restrict yourself to **Locoscript**, you'll need CP/M to copy your master discs.

CP/M is not difficult to use. Insert the working copy of your CP/M disc (Side 2 of the software included with your machine) and almost immediately you'll see its characteristic A> prompt. This tells you that the PCW is now accessing the A Drive.

To change drives, type the drive identification letter (M or B, if you have an 8512) then a colon. The prompt will indicate the new drive name. This is known as the default drive.

You can refer to drives this way from within commands to indicate files on a drive other than the one you're logged onto. This method of specifying drives is also used by many programs that run under CP/M.

A common error is to change the default drive, then receive error messages that the file you are trying to use is not present. Obviously you have to transfer any files that you want to use first, or direct the computer to them by specifying their location.

Preparing Working Discs

If you want to create discs that run immediately, you need to copy CP/M files onto them first

PIP is the COM program that you need to copy individual CP/M files. It also serves for transfers where there is not memory space for DISCKIT

You can type in PIP followed by a space every time, or you can just type PIP [RETURN] The prompt will change to a star and you will remain in PIP until you hit [EXIT].

The syntax remains the same, however. You type the name of the file that you're copying to, with drive identifier if it is different from the default, an equals sign, =,

and then the name of the document to be copied.

PIP often uses M: as a halfway house between discs on an 8256. It is also often used with the wildcards, so that you could PIP all the COM programs with *.COM, but beware of trying to load too many programs into a restricted memory space.

You can follow PIP commands with an O in square brackets, [O], to double check that the whole program has copied, or a [V] to verify by comparing the copy with the original. [C] asks for confirmation, as before.

SUBMIT is another command that you may need to prepare working discs. It causes any commands of a SUB file type to execute. Type SUBMIT, then the file name or wildcards, and CP/M will behave just as if you had typed in a series of commands.

PROFILE.SUB is a special .SUB file which auto-runs whenever the disc is inserted into a reset machine. Its operation calls for a little programming, and lies outside the scope of this article.

If you want to see how PROFILE.SUB works though, load your working copy of CP/M. Type REN PROFILE.SUB = PROFILE.END [RETURN] then reset the computer. Now place the disc in the drive and it will automatically copy certain files into Drive M.

Many programs provide instructions on how to produce turnkey discs, as auto-run programs are called. However, one process that will speed your work is to PIP the CP/M operating system onto your working disc. This is located on the CP/M disc and is called J11CPM3.EMS or something similar. Whenever you place a disc containing the operating system in the drive you will automatically get the A> prompt, so you just need to type in the program name.

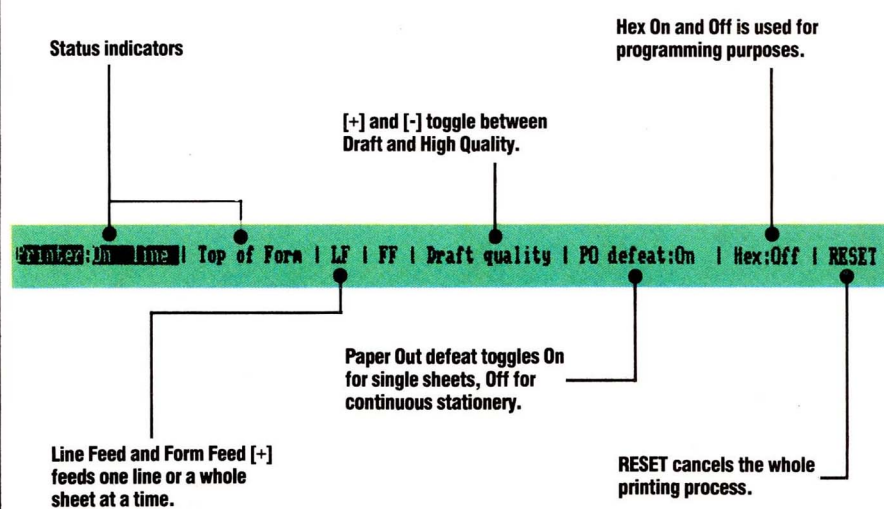
File Management

The PCW CP/M discs contain a number of programs, some more useful than others. The File Management commands let you keep your discs in order.

DIR, for Directory, lists the files on a drive or can tell you if a specific file or file type is present. Type in the command after the A> prompt, and don't worry about upper or lower case letters; CP/M automatically translates to upper case. Follow the instruction with [RETURN] and a list of the programs on the drive, including DIR,COM

Printer control

Altering the PCW printer status while operating under CP/M is similar to working in **Locoscript**. Hit the [PTR] key or pull back the feed lever and the following menu appears. The arrow keys move the block cursor sideways. [EXIT] returns to the program.



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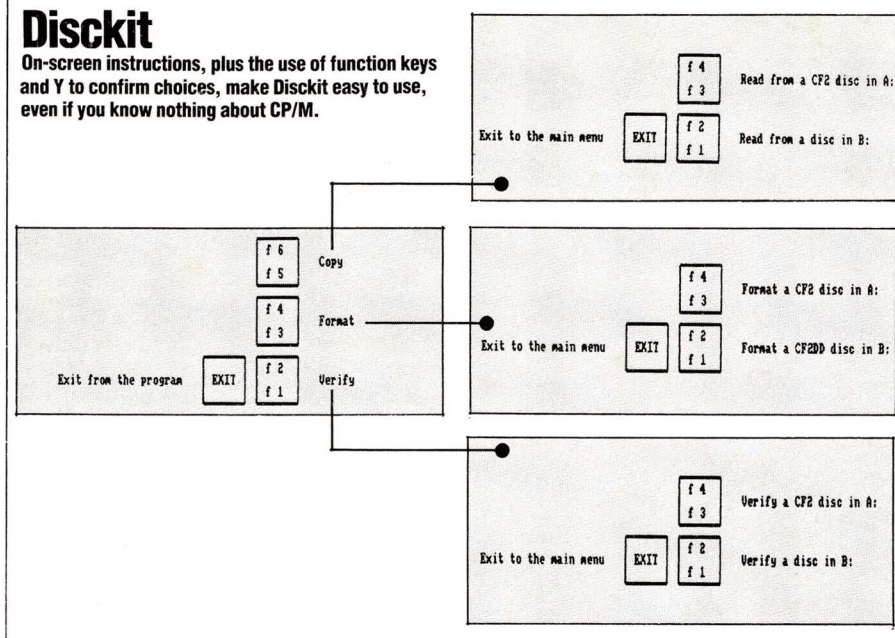
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Disckit

On-screen instructions, plus the use of function keys and Y to confirm choices, make Disckit easy to use, even if you know nothing about CP/M.



itself, will appear. DIR DISCKIT will tell you if that file is present or DIR *.COM will indicate all the .COM files.

DISCKIT is the useful general utility that you can use for copying complete discs as well as formatting new discs, and Verifying that a program has copied properly. Type in the command as before and the utility will load from the disc.

This is a very simple utility, making great use of the function keys plus the Y key to confirm choices. Follow the on-screen instructions step-by-step and you won't go far wrong, but do remember one or two basic points.

Copying a program will probably take at least two stages to complete, so swap discs as and when required.

Formatting a disc erases everything upon it, so make sure that you are not accidentally obliterating valuable data files. For the second, Double Density drive, discs must be formatted for that drive, so that they contain the correct number of tracks for the head to read. Both sides are formatted in one operation, so don't turn the disc round.

Returning to CP/M itself, you may require information about files or wish to perform actions upon them.

[SIZE] after a DIR and a file name indicates the size of the file.

SHOW tells you how much free space is left on a drive. RW indicates that the disc can be written to and read from, though not necessarily that the write protect hole of the disc is shut.

[DIR] after SHOW and a drive identifier tells you how many more files, to the maximum number of 64, memory permitting, can be placed on the disc.

TYPE, followed by a name, shows how a file is made up. You can add to or alter these command lines to modify a file and make it do just what you want.

REN renames a program, and once again the command works logically. Type REN, followed by the new name, then an equals sign (=), and finally the old name, followed by [RETURN], to tell the computer that the

new name is the same as the old one.

ERA erases files, however once erased there is no way of retrieving a file, so treat with caution. For safety's sake, type a pair of square brackets with a C for confirm between them, [C], at the end of the command and it will ask you ERASE (file name) (Y/N)?

File Types and Wildcards

A CP/M file name has three parts. First is the drive identifier letter followed by a colon. If you omit this element, the program will refer to the default drive

Next is the Filename, of up to eight characters, which are usually just letters and numbers.

The Filetype, preceded by a full stop, can be up to three characters long. It indicates the file's purpose. A .COM file is a file that contains a program that CP/M can run; a BAS file is a BASIC program.

Rather than typing in all of this each time you use CP/M there are two 'Wildcard' operations.

? represents any character, and can be used anywhere in a name.

***** represents any number of characters, and can be used alone or with other characters.

So DIR D??C*.* would provide a directory of all files that begin with D, have C as their fourth letter and any number of letters following. The * after the stop indicates that they can be of any type. In this case DISCKIT.COM fits the template. *.* indicates all the files on the drive.

What is CP/M Plus?

If every program had to be rewritten for every micro on which it appeared it would not only be a waste of time and effort, but would raise the price of software. **CP/M Plus**, the version of CP/M used by the PCW, makes programs portable, acting as a bridge between the program's code and the computer's Processing Unit.

The best way to visualise CP/M is as an adaptor, like those used with electrical goods in foreign countries. One side always fits the appliance or the program, while the other can be made to fit many specific sockets or computers. When you load your CP/M disc it looks like any other CP/M computer to the program.

As the 3" disc is almost unique to Amstrad, many programs are ready to run on the PCWs. If you are using a non-standard printer you may have to make changes though. To this end, there are many short CP/M programs available.

Supporting CP/M

CP/M may seem terribly technical, but help is at hand. The CP/M User Group (UK) is a private club that exists to help CP/M users on all machines, though there are specialist Amstrad groups.

As well as its telephone helpline, the group has journals and newsletters and a library of public domain software which it provides speedily, for a minimal sum to cover disc and postage costs.

This free CP/M software came about when certain users wrote programs that they wished to distribute but not to sell. There is now a good body of utilities and even games available from the group. Direct membership enquiries to The Membership Secretary, CP/M Users Group (UK), 72 Mill Road, Hawley, Dartford, Kent.

The Amstrad Computing Newsletter has instituted another such library and the contacted is Chris Bryant, 11 Havenview Road, Seaton, Devon EX12 2PF (0297-

20456).

Another major source of public domain software is Davis Ruben Associates, which publishes a handbook describing 70 such programs, with clear instructions on their usage. It comes complete with the programs on 3" discs for only £39.95. Contact Davis Ruben Associates Ltd., 1 Canonborne, Weston Sub Edge, Chipping Campden, Glos. GL55 6HQ.

For those who want more information on the operating system, there are several guides available to supplement the manual, including: The Amstrad CP/M Plus by Andrew R.M. Clarke and David Powys-Lybbe, MML Systems Ltd.; Mastering the Amstrad PCW 8256/8512, by John M Hughes, Sigma Press, contains three introductory chapters; an audio tutor is available from Reel Time; and for double drive owners, the Hands-On CP/M Plus computer course comes from Microcal.

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Why buy a word processor for the PCW when it comes complete with **Locoscript**? It's all a question of whether the bundled software matches your needs.

Beyond Locoscript

A word processor lets you write all sorts of documents which it stores in the computer's memory until you switch off. At any stage you can make changes and, providing you've saved your file to disc, you can come back weeks, months or even years later to make further alterations.

The advantage of word processing over ordinary typing is that you're not committed to hard copy until you're satisfied with the text. Most people find that the act of writing becomes less of a challenge when they know that all their mistakes and typing errors can be corrected before they reach the printed page. This is one reason for the Amstrad's success.

Many people who buy a PCW get to grips with **Locoscript** and remain quite content with what they've got. But even if you've never considered an alternative, you should look at the competition. Many packages boast facilities which **Locoscript** lacks, and those could be just the features that you're looking for.

On the face of it, **Locoscript** is both powerful and friendly. Documents are easy to create, load, move around and modify via a combination of cursor controls and function keys. The printing output, often a bugbear for word processing programs, is also fairly easy to control. The standard templates allow you to produce form letters and layouts for a whole series of common documents.

But there are disadvantages associated with this power. **Locoscript** files take up a lot of disc space and the large number of features make it practically impossible for **Locoscript** documents to be understood by other programs because of the number of control codes embedded within them.

This creates problems if you want to communicate files between computers, whether you're swapping discs between programs, or need an electronic mail facility. Normally such interchange depends on a common system called ASCII (American Standard Code for Information Interchange).

ASCII assigns numbers to the characters on a computer's keyboard. If you save or send a file in this format, it can be readily understood by an otherwise totally incompatible software/hardware system.

Early versions of **Locoscript** can't produce ASCII files at all, so their documents can only be read by programs such as Polyword that include a **Locoscript** to ASCII transfer utility. Although later versions can save a file to ASCII, they can't read it back. You could use **Locoscript** to prepare a file for transmission on electronic mail, but you couldn't use it to manipulate what you receive. It's a serious omission as most

other word processing programs are ASCII compatible.

Another problem associated with **Locoscript's** friendliness is that, in certain instances, it lacks flexibility. The checks and balances in the program can act like tramlines and stop you doing anything out of the ordinary.

In this instance **Wordstar** and **New Word** have their attractions, as their complexity is balanced by their power. If for example, you want to produce circulars, they allow you to process large lists automatically, and will make it easier for you to link into sophisticated databases.

Having read this, and the reviews which follow, you may still feel happy with **Locoscript**, but if that's the case you'll have made the decision from a position of knowledge rather than prejudice.

In the final analysis, all word processors have their good points, albeit sometimes rather obscure ones. Deciding which one is for you will depend heavily on your usage and personal taste.

What to look for in a Word Processor

If you type or write a document, be it a memo or a novel, you commit all your thoughts - and all your errors - to paper. Alteration and correction is messy and time consuming.

A word processor stores your typed thoughts as electronic signals. Each byte, consisting of eight bits, represents one character; a letter, punctuation mark or code to control the appearance of the text on-screen or in print. Those thoughts only ever become concrete when you send them to the printer, and you can still store them on disc and make further alterations.

The most important feature of a word processor is WYSIWYG, or What You See Is What You Get. This means that the screen image will look like the finished text. Even so, it can seldom cope with different type faces.

Ask how fast the program is. It should be able to cope with a good typing speed. Watch the end of a line when the cursor word-wraps onto the next one; is there a delay? Can the cursor be moved quickly? Ideally, you should be able to flip from the top of a page to the bottom, or even to the bottom of the document, quickly.

Does it support a number of delete

commands? Deleting letter by letter is tedious if you have to remove a whole sentence. What about moving blocks of text? If that paragraph would look better earlier in the text, you don't want to type it in again.

Do you need special printing effects? Even if you don't want different fonts and type-faces, you might need to underline, use italics or produce super- or subscripts. If you send copy abroad, the ability to produce accents will be useful.

You may want to mailmerge names and addresses from a database, or perhaps you'll want to include figures or graphics from another program. Do you need multiple columns and sophisticated tabulation? Is a spelling checker available as an extra or is one included with the program? And will your program output files in a format that could be used for other applications, such as communications?

Finally, you have to balance the program's sophistication with its ease of use. After all, if you spend half an hour consulting a manual to find an effect, you might be better off with that typewriter after all!

```

PCW:PCWERS/WYSIWYG.001 Editing text. Printer idle. Using M:
Printer: Online Top of form Title High quality Single sheet
Options F2=Paper F3=Actions F5=Document/Reprint F7=Reset F8=On/Off Line Exit

```

THIS IS A DEMONSTRATION
OF
WHAT YOU SEE IS WHAT YOU GET
otherwise known as
WYSIWYG

This means that the document will be printed as it appears on screen, including all line breaks, paragraphs, and most printing effects.

Certain effects are not shown, such as bold type, subscript and superscript, and the like. You should therefore display the printing codes that indicate where such effects are being used.

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WYSIWYG - What You See Is What You Get - doesn't cover all the printing effects, but at least text will be formatted so that you can see where lines and pages break.

WORD PROCESSING

For anyone with little or no previous word processing experience **Locoscript** provides an ideal introduction. It is simple to use, despite any impression you may get from the manual, and flexible enough to enable you to produce documents of many different types.

Locoscript

Since **Locoscript** was specifically designed for the Amstrad PCW, the keyboard has many keys dedicated to commands which are accessed by control codes in other packages. This is, on the whole, an easy system, once you are accustomed to it.

But if you are used to **WordStar**, or another 'standard' word processor, you may find it takes a bit of time to familiarise yourself with **Locoscript**. It is radically different from those other packages. Its screen layout, its filing system for documents, and its method of keyboard control will all be alien to you.

Locoscript's unique Groups, Documents and Templates are particularly useful if your writing frequently falls into the same few categories. It makes for an easily organised system, though it is expensive on memory.

The eight groups on each disc let you keep similarly styled files together. And the templates simplify writing documents which share an identical format, since the parameters don't have to be established each time. Used in conjunction with **Locoscript's** pleasingly simple phrase storage facility, which lets you paste in a particular phrase rather than typing it out many times, this is a great time saver.

Printing effects are also easy to achieve. You can use the Enable and Disable keys with the menus or just the mnemonic code. Say you want a passage in Bold type, you can hit the Enable key, wait for the menu, select Bold and hit Enter, or more simply, hit Enable, then B for Bold. Adding codes becomes a natural part of your typing.

Locoscript does have its drawbacks though. The omission of both a word count and a spelling checker from the program is frustrating. Even its line count can be hazy, because you have to remember line spacing and how many lines the headers and footers are taking up.

Another problem is disc capacity, though this is less relevant for 8512 owners. The 174K single density disc is quickly eaten up when you build up a stock of templates or have to store documents for any length of

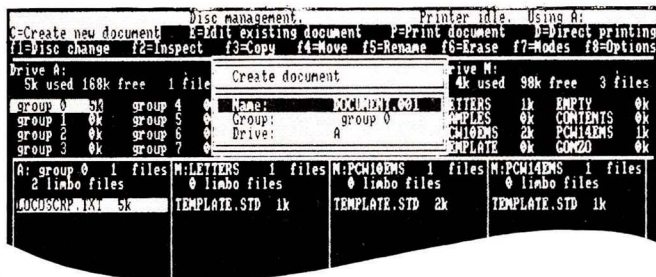
time. The best answer is to back up **Locoscript** on a spare disc, delete all of the templates provided by Amstrad that you don't want, then use a blank disc, or side B of the back up disc, to hold your day-to-day files.

Locoscript's lack of compatibility with other programs which you might want to use with your documents, such as spelling checkers, mail merge, or word counters, is also irritating. Version 1.20 has an option to make an ASCII files from your documents, which puts them into a format compatible with other CP/M packages. However, once you've done this, it removes all the special **Locoscript** markers, which usually pertain to the layout of your document, and you will have to reinsert them into the document later.

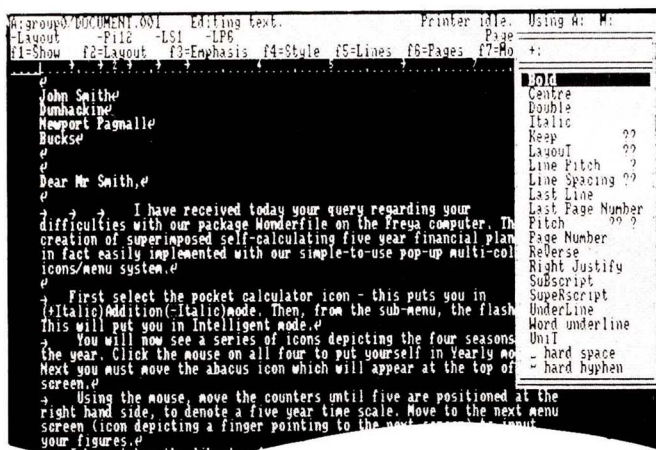
Anybody who has tried to write a long document with **Locoscript** will know how slow it becomes. Every time it has to scroll through pages of text, instead of flipping straight to the last page. The fact that Save and Continue returns you to the head of your text, rather than where you stopped writing, results in yet more wasted time. The only answer is to break long files down into sections of, at most, ten pages.

Locoscript is a good first word processor, with many useful features, but if you want to produce long documents, interact with other programs, or learn a standard system, then you would do better looking for an alternative.

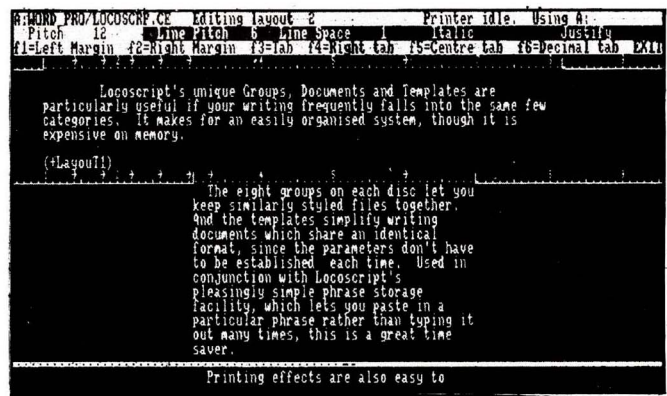
Working With Locoscript



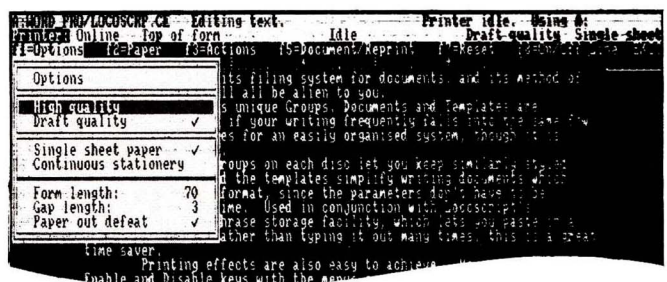
Locoscript's Base screen. Pressing C enables you to create a document. To identify it, simply overtype DOCUMENT.001 with the chosen name. To rename the group, press the [-] cursor once, to highlight Group: group 0, and type in the new name.



One of **Locoscript's** most useful menus, obtained by pressing [+] and the Grid key, 2, to the right of the keyboard. It shows the codes used to enhance document presentation. Options are selected by moving the cursor to highlight the one you require. To switch off an option, use the [-] key with the Grid, to access the menu again.



Editing your layout. Set up a template so that any documents in the same group will conform to the same style. Pitch refers to characters per inch; Line pitch to lines per inch. You can also set Left and Right Margins, Tabs (indentations), Justification, and Italics.



Printer options. Before committing yourself to print, it's worth checking the parameters. Do you want to print out in high quality, which is slow but near letter quality, or draft, which is fast, dot matrix standard? Are you using single sheets of paper? Will you get the right number of lines to the page? Move the cursor to highlight the option, then press [-] to confirm.

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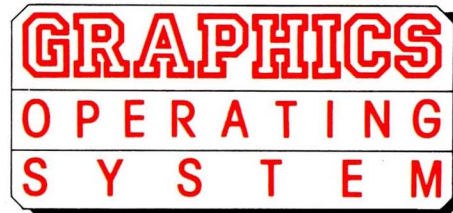
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WORD PROCESSING

Pocket WordStar and **NewWord** come from different companies but share many of the same features. It's not surprising really, as **NewWord** is a version of the classic **WordStar** and is written by the same authors. Whatever your needs, it's well worth looking at two programs that have become industry standards.

Pocket WordStar and NewWord II

Though **WordStar** and, to a lesser extent, **NewWord**, can be difficult, millions use them on micros many times the price of the PCW. On the other hand there's practically nothing you can't do with them — provided you know the relevant control code or dot command. If you're considering buying either of these programs you should take both these factors into account.

WordStar's main problem is that the learning curve soon becomes quite steep even though it's easy to get started. You can use it as a simple text processor and not bother with the advanced features, but if that's all you want, you'd be better off sticking with **Locoscript** or using a less powerful alternative.

The main reason for this initial difficulty is the use of dot commands; two letter instructions which control top and bottom margins, headers and footers, alter printing formats from within a document and perform similar functions. Once you've

understood these, and the major control codes which move you around the program and the document at speed, you're pretty close to total control of your output.

Learning them can be a big problem though, particularly if you rely on the manual supplied by MicroPro. All you get for the PCW is a leaflet tucked into the front. But get yourself a good book on the subject and you can use **WordStar** in spite of the manual. Once you're over that hurdle you'll find a wealth of word processing power at your finger tips.

WordStar has an associated mailing list program and spelling checker, **MailMerge** and **SpellStar**. But if you require a utility which isn't included there is also a 'Run a program' facility to let you use external programs. You can add any programs that will run under CP/M to the disc, providing that there's room for them, and make your copy of **WordStar** do things that the release version can't. The most logical addition

would be a word count, which is absent from the PCW **WordStar**.

NewWord is **WordStar** compatible, uses the same controls, but is a little easier to understand. It adds a word count facility and has a comprehensive manual that takes you step by step through the program. It's also a little cheaper, but when buying software this should never be the only criterion.

NewStar, the program's supplier, has also taken the helpful step of including a leaflet explaining how you install the program for the PCW. **WordStar** is partially pre-installed but it isn't configured to use the PCW keyboard and doesn't make use of Drive M.

Unless you do a lot of word processing you're unlikely to need the full power of either of these programs, but if your usage is heavy and complex, then they're well worth the extra money. In such cases your choice of **WordStar** or **NewWord** will depend on personal preference, for the two programs are both excellent.

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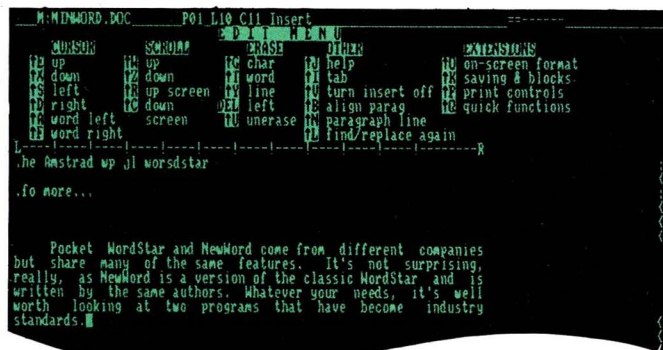
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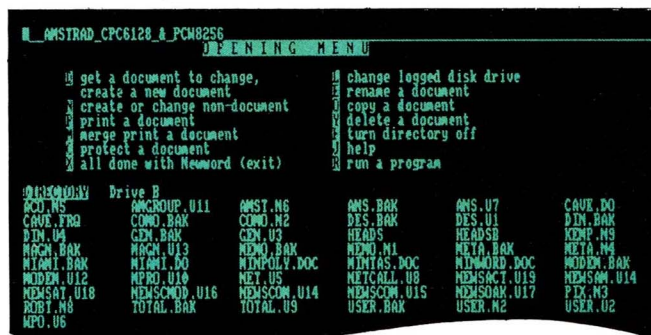
WordStar and NewWord at work



WordStar's opening menu shows some of the basic commands but lacks information on how to reach the Help screens. Pressing D and specifying a file takes you to the Edit menu. The main menu can always be retrieved while editing a document by pressing ALT + K.



NewWord's Editing screen is similar to **WordStar's** but somewhat clearer. The current file is shown top left and the cursor position appears next to it. Note the dot commands at the head of the text, which will produce headings in double strike on each page, and a footer to indicate 'continues' or 'ends'.



NewWord's main menu is textually similar to **WordStar's** but replaces the need to set the help level with key J for Help. **NewWord** also lets you log onto sub-directories, for example B1, though these can cause problems if you want to use your files in other programs.



WordStar and **NewWord** incorporate copious help features, although they're not always as clear as they might be. Here is part of **WordStar's** Block and Saving Help screen, which is obtained by pressing ALT + K. **NewWord's** help screens are rather clearer.

A self-contained word processor package may sound like a dream, but that's what **SuperWriter** aims to be. . . and it's all menu driven!

SuperWriter

SuperWriter approaches word processing from a rather original angle. All its facilities are accessed via a system of hierarchical menus. That may sound a touch intimidating, but the logical structure of the system allows even a total novice to get down to work almost immediately.

The package is both powerful and comprehensive, and it achieves this by ingenious means. On the 8256 the dictionary, spelling checker and print driver are called into memory from disc, as overlays, each time they are required. With an expanded M: drive, the PCW can hold everything in memory all of the time and still have plenty of room for text files.

Selections are made from the **SuperWriter** main menus by moving the cursor with the Space bar then hitting Return. Exit serves as an Escape key and always returns to the previous menu level, so a selection made in error is never disastrous.

The actual editing of a document, which

may be stored on the M:, A: or B: drive, is done in the **SuperWriter** workspace. If it's a new document, its name and the drive to which it will be saved, if this is different from the default, is entered. Then, before writing commences, the author's name and date are requested, to be stored with the document file.

This provides a useful feature for anybody who needs to keep a close record of their text. Used in conjunction with the Utility option on the main menu, the history of the document's creation can be amended or viewed.

Pressing Exit during an editing session calls up a line of single letter options at the bottom of the screen. This accesses a standard selection of word processor facilities, including find, replace block mark, block move, block delete and copy.

This is also the menu that lets you save the contents of the **SuperWriter** workspace to disc or discard it. This last option means that if you've called up the wrong file, or had second thoughts about changes you've made, you can leave the text in its original state, much in the same way that **Locoscript** provides an Abandon Edit choice.

Documents which have been saved to disc may be spooled, so that they are printed as a background job, while other files are edited. The Utility sub-menu also allows files to be displayed, so that you can look at their contents, included in other

documents, deleted or renamed.

Another **SuperWriter** strength is its use of variables. These can be set so that during printing the program stops and prompts an input, such as a name. Or you can produce mailshots and circulars automatically from data files that you enter.

All in all, **SuperWriter** is a powerful word processor, supported by comprehensive documentation. It comes very close to being an all-in package with the distinct advantage of a logical, menu-driven nature of operation.

A complete novice can start serious work with the program almost immediately, gradually building up a working knowledge of the powerful facilities on offer. Advanced users will find much to please them, including the clever mailmerge facility.

The main problem would appear to be the memory used by the system, which leaves very limited space on the 8256. But if you don't want to use **SuperWriter** for very long documents, and need its multitude of features, or compatibility with the **Supercalc** spreadsheet, it can be highly recommended.

FACTS BOX

TITLE
SuperWriter

PRICE
£49.95

PUBLISHER
Software City

What's on the SuperWriter menus?

```
A: IDLE, MD edit document. SuperWriter 1.03

SuperWriter (tn)
Version 1.03
PCW 8256
0000 CPU 2.0 R1-3740
Serial # 3171-400163

Copyright 1983
SORCIN/IOS MICRO SOFTWARE
A division of Computer Associates International, Inc.

Main Menu:
  E EDIT document
  - PRINT return to System
  - CHECK document
  - CHECK spelling
  - DISK directory
  - UTILITIES

Space bar=Move Cursor, CR=Select, ESC=Cancel, ?=AnswerKey
```

Edit opens both old and new files, while Quit returns to CP/M. Print leads to its own sub-menu. Check brings the spelling checker into operation. Disk not only leads to the drive directory, but also allows files to be examined without editing. Utilities accesses file handling routines, and lets you use Supercalc.

```
Document: M:WORDS SuperWriter 1.03

Workspace contains:
  33 Words
  149 Characters
  3 Lines
  1 Pages
  (32795 Free)

Output Format: S/writer
Save History: Yes
Tab Insertion: No
Create Backup: Yes

Save your document on disk:
  S Save document
  - Rename and save document
  - Change output format

Space bar=Move Cursor, CR=Select, ESC=Cancel, ?=AnswerKey
```

Saving during an edit leads to this menu. It allows far more than a straight save. The document can be renamed and saved, perhaps to a different drive, indicated by a letter and a colon. The output format may also be altered from SuperWriter to External or System, letting you port it into other programs.

```
Document: M:WORDS DOCUMENT PROOFREADING 1.03

Dictionary: SM.DIC Length: 20,295 words

Currently Proofreading

# Words # Words % Words # Words % Words % Proofing
Read Unique Unique Mismatch Mismatch Done
-----
 47 24 $1.6% 3 6.3% 100.0%

Options for Proofing:
  R Review Mismatched Words
  - Quick Review Mismatched Words
  - Mark All Mismatched Words

Space bar=Move Cursor, CR=Select, ESC=Cancel, ?=AnswerKey
```

Checking spelling couldn't be easier. Select the Check spelling option from the main menu, input the file name and the spellchecker goes through the document, giving a progress report on its findings. Once the file has been checked, mismatched words can be Ignored, Marked or Added to the dictionary.

```
Document: M:WORDS DOCUMENT COMPOSER 1.03

Printer: Epson FX-80 Pass 1 Record #: 0 Start Record #: 0
Disk: Page 1 Line 1 Stop Record #: Last

Format Settings:
Left Margin (0-99) is 10
Line Width (1-256) is 65
Forms (C-5) is C
Spacing (1-65) is 1
Page Size (1-99) is 65
Top Margin (0-65) is 5
Bottom Margin (0-65) is 5

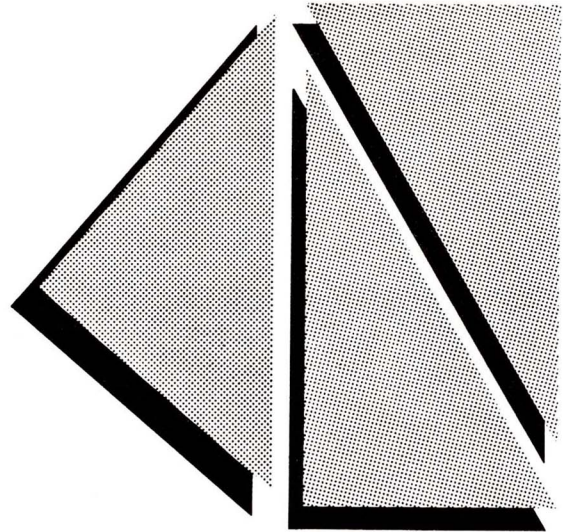
Control Settings:
Copies (1-999) is 1
Begin Page # (1-999) is 999
Begin Page # (1-999) is 1
Proportional (Y/N) is N
Pitch (10-15) is 10

Printing Options:
  F Format and PRINT document
  - Format On-screen
  - Change Format settings
  - Change Control settings
  - Secondary Print functions
  - Return to System

Space bar=Move Cursor, CR=Select, ESC=Cancel, ?=AnswerKey
```

The Print menu contains a screenful of information on the current format and control settings. These can be altered via the appropriate print menu options. A document can be formatted on screen before printing, to preview embedded format commands and so avoid wasted paper.

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Tasword 8000 is the latest in a long line of word processors that were originally developed for home computers like the Spectrum. It combines simplicity with several original features but do they add up to a viable alternative to **Locoscript**?

Tasword 8000

Tasword's origins can be seen in its manual, which is brief but informative, and the general style of program. But don't prejudge it; the program itself is pleasant to use and supports justification, text centring, character, word and block deletion.

Normally there is an abbreviated Help screen at the top of the text entry window, but a fuller one is obtained by pressing Stop. This fills the screen with details of the program's control keys. Though it's chaotic compared with hierarchically arranged Help screens, where you press a key for more information, it has the advantage of providing everything you need to know at one go, making it easier to use the program's full facilities.

Tasword 2 was supported by a number of print and display utilities which are still to be found in this latest version. These allow you

to print parts of your text in different typefaces.

You can produce condensed, double strike, elite, superscript, subscript, italic, condensed-enlarged and enlarged, in addition to the more florid faces supported by the optional **Tasprint** facility. The various typefaces can't be mixed with normal print on the same line, but can be mixed with each other.

There is also a simple but effective data merge facility which allows you to insert information from a database to produce mailing lists, circular letters and so on. It must be seen as one of the main attractions of **Tasword**.

To insert data you use the '&' character to indicate a variable. So, if you're writing a circular you could type 'Dear &N'. Names would then be inserted automatically by the

program, or the printer could be stopped and you could enter them by hand. This facility can be used with the high-powered database, **dBase II**.

Tasword has a file transfer capability, which allows you to transform **Locoscript** files into **Tasword** format. You can therefore produce original text under the system known by practically all PCW owners, then transfer it to **Tasword** for its enhancements.

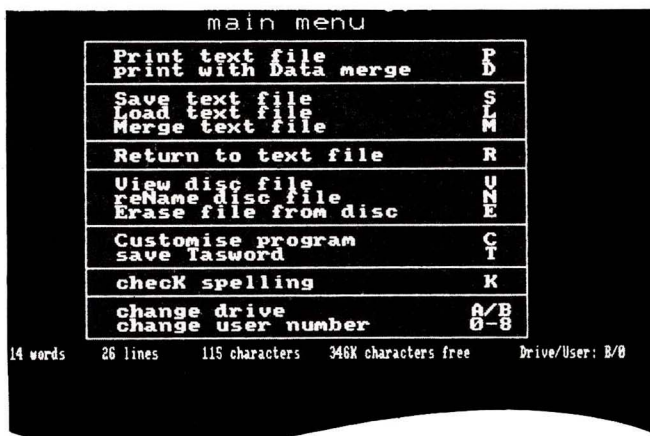
Tasword's notepads are another useful feature. You can use these for reminders that are unconnected with the current document. Or if you want to work on something which will be inserted towards the end of the document, you'd use a notepad and plug it in later.

Standards being standards, there's no way **Tasword** will supplant **Wordstar**, or even **Locoscript**, but it's not expensive and should find itself a niche in the market. It's missing certain functions, like Search and Replace and a Word Count, but it has many attractions, whether you use it as an extra or instead of **Locoscript**.

FACTS BOX

TITLE
TASWORD 8000
PRICE
£24.95
PUBLISHER
Tasman

Using Tasword 8000



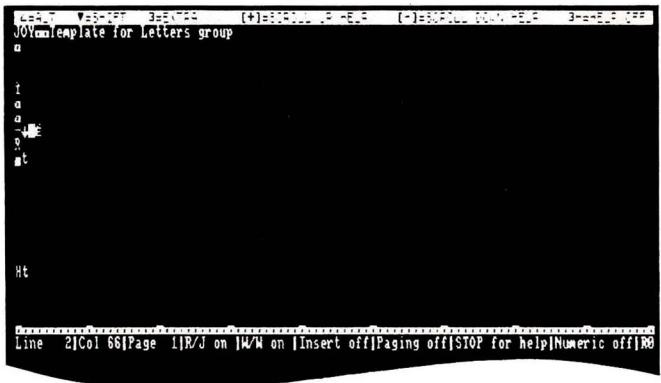
Tasword's main menu is accessed from the text window by pressing Exit. The main commands are single keystrokes, and in the case of irreversible commands, you're presented with a double check, confirmed with Return. You have to Save or Load to view the directory and you can't save a file in the format Disc Identifier: Filename if you're logged onto a different drive.



The Merge Text menu displays the directory of Drive B. Pressing Copy instead of Return after the filename lets you view the file during loading, and the whole procedure can be abandoned with Stop.



Pressing Stop during editing gives you the full **Tasword** Help screen, which is cluttered but highly informative. During normal editing a window onto the Help screen appears at the top of the screen. You scroll through it with the plus and minus keys.



Tasword is unable to read **Locoscript** files unless you convert them to ASCII format. The document usually needs to be reformatted to an acceptable width though. The notepad, at the top of the screen, was obtained by scrolling down beyond the base of the Help screen.

WORD PROCESSING

If our in-depth examples have whetted your appetite, here are several other word processors, and related programs, to make life at the keyboard less of a strain.

Improving your word power

Word processing packages

Though they are not in the same league as **WordStar/NewWord**, packages which couple a word processor with a suite of programs can have their own attractions.

POLYPROGRAMS

NewStar
£59.90

(**Polyword** + **Polyprint** £29.90; **Polymail** £19.95; **Polyplot** £24.95; **Typeface discs 2 and 3** £19.95 each)

Polyword, **Polyprint**, and **Polymail** are three quarters of a suite of programs; the fourth being **Polyplot**, which produces graphs for inclusion in your text. They are available separately or as one package.

Polyword, the word processor, uses **Locoscript's** control keys to lead to series of small menus, rather than a main one with sub-menus. If you have experience of **Locoscript**, there should be no problems.

As a stand-alone word processor it's not earth shattering, but its usefulness rests on its links to the other three programs.

Polyprint is also menu driven and can produce 25 typefaces on a dot matrix printer. Nine fonts are supplied with the package, and the others are available on two discs. They provide attractive alternatives to the **Locoscript** standard, and include everything from the aptly named **Miniscule** to **Cooper Black (Large)**.

Polymail uses the '&' character to indicate a variable, just like **Tasword**. Its main limitation is that lists of addresses are limited to 100, and a full list takes up considerable space. But if you're looking for an easy to use mail merge program, suited to smallish tasks, this could be for you.

One great plus for **Polyprograms** is its use of ASCII files. It can manipulate files from **WordStar**, **NewWord** and later versions of **Locoscript**.

It's a neatly unified package, worthy of consideration if you specifically need its functions.

MICROWORD

Amsoft/Saxon
£49.95/£69.95 with **Flexilabel**
Microword comes complete with its own database, **Microfile**, and is available through Amsoft or direct from Saxon. It also ties in with **Flexilabel**, a label printer (see below).

While **Microword** is rather basic, it is also very simple to use, and cleverly balances **WordStar**-style dot commands with dedicated function keys. Its menus will be reassuringly familiar to **Locoscript** users.

Features include instant cursor movement to the top or bottom of a document, avoiding **Locoscript's** scrolling; automatic text indentation; multiple copy printing; and the automatic sorting of columns of figures in ascending or descending order. There is also a useful auto back-up facility, which saves your document every ten minutes.

You can produce a limited number of typefaces with the package, including **Italic**, **Pica** and **Elite**. It is ready to use with a variety of printers, including **Epson** and **Juki**, as well as **Amstrad's** own.

The mailmerge facility allows up to 50 items to be merged. Beginners will find Saxon's support service, which provides ready made or specially designed templates for **Microfile**, useful.

Expanding existing systems

Many systems provide ample opportunity for expansion. Certain programs, such as **NewWord's** excellent spelling checker, **The Word**, are bundled free with the products, while others can be purchased to suit your individual needs. And if you're in search of some simple CP/M utility, like a word count, don't neglect the public domain software libraries.

TASPRINT 8000

Tasman
£14.95

We've already referred to **Tasword's** print capabilities in the extended review. While **Lectura Light** and **Median** are supplied as standard with the main program, you'll have to purchase **Tasprint** if you want the full range of faces.

The extra fonts are **Compacta**, **Data-Run**, **Palace Script**, **Ranchero**, **Breaker** and **Outline**. Because **Tasprint's** characters are twice the normal **Locoscript** height, and the maximum to a line is 90, it is better suited to producing headlines than general text.

NEWMAIL / NEWTAG /

NEWKEY / NEWFILE /

SPOOL

NewStar
£29.95 / £14.95 / £14.95 /
£29.95 / £14.95

As its name suggests, **NewMail** is aimed at the **NewWord** user, but it can be used with any other program that produces **NewWord** style files.

NewMail can be used directly from the **NewWord** main menu, and is a comprehensive mail-merge program. You can use it for everything from creating a mailing list of up to 18 fields through keeping it in shape, and there is even a label printing option.

NewTag, **NewKey** and **NewFile** are primarily file managers, allowing you to add identity text to **NewWord** files, search them for keywords and produce handle files, producing a comprehensive directory, respectively. **Spool** allows you to continue using **NewWord** while printing.

FLEXILABEL

Saxon
£29.95

Dedicated to the **Microword / Microfile** package, **Flexilabel** can handle multiple copies of a single label or produce individual address labels.

Cursor-selected menus create printing effects, such as centring, and different print styles, which can be altered within a single line. As many as five labels can be produced across a sheet.

MAILFLOW III/DATAFLOW III

Micro Power
£49.95

Mailflow is another mailmerge

program, dedicated to a piece of software, in this case the **Dataflow** database, which is reviewed in the relevant section.

The unique feature of this package is its **Locoscript** compatibility, so that if this is your word processor, you can still produce mail-merged letters.

Text is automatically reformatted and up to 20 different variables can be inserted into the document. Features such as the insertion of phrases which are conditional on other phrases, such as 'Yours faithfully' to follow 'Dear Sir', and automatic dating, make it a powerful package.

Writing wrongs

Spotting errors is notoriously difficult when you're working on screen, and more often than not typing errors and spelling mistakes creep past your checks and into the printed document.

One of the things that a computer can do is handle routine procedures very quickly, so it's ideally suited to correcting all those little misspellings or typing errors.

PROSPELL

Arnor
£29.95

Arnor's **Prospell** is the only **Locoscript** compatible spelling checker available at the time of writing.

You load your document, whatever its format, into the program then sit back while it compares every single word with its 32,000 word dictionary.

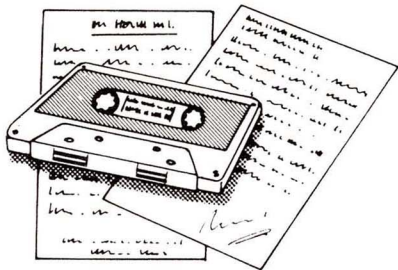
It then produces a list of words that it doesn't recognise and allows you to alter them, referring to their context if need be. You can add new words to the dictionary, personalising it for further use, or tell the computer to ignore an apparent error.

If you're unsure of the spelling, the computer can suggest a spelling by searching for a near match. If that wasn't enough you can even produce separate dictionaries, dedicated to specialist applications.

Of course, no spelling checker is infallible, and if you type 'too' for 'two' or 'their' for 'there', it can't recognise your error. But if you want to produce error free copy, you stand a far better chance if you invest in a product like this.

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Word Processing round up

WORD PROCESSORS

| Product | Supplier | Price £ | Menu Control | Help Screen | Alt. Typefaces | Data Merge | Spell Check | Comments |
|------------------------|-----------------------|---------|--------------|-------------|----------------|------------|-------------|--|
| LOCOSCRIPT | Amsoft/ Locomotive | N/A | ● | | | | | Powerful but not standard. Certain features available at extra cost. |
| MICRO WORD | Amsoft/ Saxon | 49.95 | ● | ● | ● | | | Simple word processor incl. Micro File database. |
| NEWORD II | NewStar | 69.00 | ● | | ● | ● | | WordStar compatible, but with added features |
| POCKET WORDSTAR | Micro Pro | 49.95 | ● | | ● | | | Classic but can be hard to learn. |
| POCKET WORDSTAR DELUXE | Micro Pro | 69.95 | ● | | ● | ● | | See above. |
| POLYWORD | NewStar | 29.90 | ● | ● | ● | | | Available separately but best used as part of Polyprograms suite. |
| SUPERWRITER | Software City | 49.95 | ● | ● | ● | ● | | Comprehensive Supercalc compatibility 32K file max. |
| TASWORD 8000 | Tasman | 24.95 | ● | ● | ● | | | Easy to use. Produces ASCII files. |

SPELLING CHECKERS

PROPELL

Arnor/£29.95

●32,000 word dictionary;
50,000 word max ●Locoscript
via ASCII

SPELLING CHECKER

Computer One/£34.95

●64,000 word dictionary ●Fully
Locoscript compatible

LABELLERS

EASY LABELLER

MASS/£33.35

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●Group printing

FLEXILABEL

Saxon/£29.95

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●Print effects

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●8 typefaces in NLQ

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TASPRINT 8000

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Tasman

●Six fonts ●ASCII file
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NEWFILE

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NEWKEY

£14.95

NewStar

●Keyword search

NEWTAG

£14.95

NewStar

●File identifier

SPOOL

NewStar

£14.95

●Print spooler for NewWord

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LOCOMAIL

Amsoft/Locomotive

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runs from Locoscript main
menu ●Dual mode insert
●Many advanced features

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selection codes ●Label printing

NEWMAIL

NewStar/£29.95

●Runs from inside NewWord
●Label printing

POLYMAIL

£19.95

NewStar

●ASCII compatible ●100 entries
maximum

QMAIL

Logicom/£29.95

●Locoscript compatible
●Name, address and five extra
fields in database ●Coding to
allow sorts

Contacts

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Victoria House
PO Box 10
Sunderland SR1 3PY
0783-673395

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94 London Road
Reading
Berkshire RG1 5AU
0672-62576

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118 Whitehorse Road
Croydon CR0 2JF
01-684 8009

Computer One Ltd

Science Park
Milton Road
Cambridge CB4 4BH
0223-862616

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London SW19 5BY
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Micro Power Ltd

Northwood House
North Street
Leeds LS7 2AA
0532-458800

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Monksilver House
Rose Mount
Oxton
Birkenhead L43 5SW
051-652 5371

NewStar Software Ltd

200 North Service Road
Brentwood
Essex CM14 4SG
0277-220573

Logicom

Proteus Computing Ltd
2 Iffley Road
London W6 0PA
01-748 2302

Saxon Computing

3 St Catherines Drive
Leconfield
Beverley
Humberside HU17 7NT
0401-50697

Software City

382 Kings Road
Chelsea
London SW3 5UZ
01-352 9220

Tasman Software

Springfield House
Hyde Terrace
Leeds LS2 9LN
0532-438301

Trinity Business Systems

52 Queens Road
Heathersett
Norwich
Norfolk NR9 3DB

DATABASES

Your PCW is the ideal way to control the masses of paperwork that make traditional filing systems so unwieldy. Almost anything filed on paper, from contact lists to stock control, can be computerised.

The electronic filing cabinet

Everybody has to store, recall and use data, whether it's names and addresses for personal use, or a business's price lists and catalogues. The computer provides an easy way to keep files up to date and access specific information quickly. It also adds many facilities which are simply not available with a manual system.

If you keep a card index you can only order your records according to one set of criteria, such as by surname. This means that you can only refer to information easily if it's at the top of the card. It isn't much use if the details you want are stored in an unsorted lower section.

A computer can search for any particular item, or sort your records into a different order. It can also total and sub-total different records automatically, to produce a detailed report far more quickly than you could.

The PCW is well supported as far as software is concerned, but computerising your files isn't simply a case of buying the most expensive program you can afford, then typing in all your information. To set up an effective database, you need to know in advance exactly what information it will contain and what you'll be doing with it afterwards. Only then can you choose the appropriate software.

Most databases provide all the basic facilities, such as the ability to browse through records, make changes, erase unwanted details and locate particular entries. Similarly, almost all provide a sorting option and at least a basic facility to print a report, summarising selected records.

What varies is the amount of flexibility you have in manipulating your data. Some programs will only search for the exact information specified in one particular field, such as a particular name. Others can make sophisticated comparisons and locate records which fulfil several conditions.

Many simple programs have predefined ways of presenting records on-screen or printed in reports. More advanced programs, which let you design a screen form to make viewing and correcting your information easier, are usually preferable. The ability to produce a report which includes only the particular details that you are interested in, and which has an appropriate layout, is also useful.

Think about what you want to do with your computerised files, and you'll be better prepared to find a program that has all the necessary facilities. Don't neglect some of

the less obvious ones. Your files may be confidential, in which case a program that protects them with a password is an excellent idea.

You may need to change the fields in a file which has been in use for some time. If your program provides no easy way of doing this, you could face serious problems.

There's little point in using a database if you have to re-type all the data it contains at some later date.

Similarly, check that you can convert records in a file into a popular data format, so that they can be read by another program. You may want to use information from your database in a spreadsheet, for

Flat File and Relational database programs

Most databases are designed to handle just one file at a time. They cannot cross-reference or combine information from separate files. These programs are often called file handlers or flat-file databases.

They are fine for many tasks, where the computer is simply used for storing and manipulating a list of similar items. But more sophisticated applications require a program that can access several separate but related files at once. These are called relational databases.

Relational database programs can easily manage all the tasks of a flat-file package,

Flat-file managers

Flat-file managers are often visualised as containing tables, with one row for each record and columns for the different fields. The program can only access one file at one time, but for many applications this is not a restriction.

Do make sure that the program will let you set up enough fields though. And ask yourself how intelligent its searches need to be. Will it be enough to select whole words, or might you want to pick records from just a few letters, such as every name beginning with T? Will you need to sort figures as well as words?

The diagram shows a table representing a flat-file database. The columns are labeled 'Name', 'Address 1', 'Address 2', and 'Address 3'. The rows contain individual records. Arrows labeled 'Fields' point to the column headers, and arrows labeled 'Records' point to the rows of data.

| Name | Address 1 | Address 2 | Address 3 |
|-----------------|-----------------|-------------|-----------|
| Peter Jones | 14 Acacia Ave. | Godalming | Surrey |
| Teresa Green | 16 Milldown Rd. | Poole | Dorset |
| David Smith | 73 High St. | Barnsley | Yorks. |
| Stuart Davies | 48 Windmill St. | Manchester | M13 |
| John Anderton | 34 Park Rd. | Manningtree | Essex |
| Phillip Barnett | 22 George Ave. | Maidstone | Kent |
| Harold Parker | 7 The Mews | Woodville | Sussex |
| John Farmer | 45 John St. | Rye | Sussex |
| Jenny Read | 2 Park Drive | York | Yorks |
| Paul Ward | 28 Ing Close | Yeovil | Somerset |
| Peter Lee | 12 High St. | Freon | Herts. |
| John Brown | 10 Park St. | Disk | Cheshire |
| John White | 15 Church St. | Highchome | Bucks. |

example. If you change your software or hardware, it's essential to have the ability to read your data into the new program.

HOW DOES A DATABASE HANDLE DATA?

Before you can decide which database is right for your needs, you must have some idea of what you'll want to do with the information, how much data you'll be able to store on a disc, and so on. To do this you need a basic understanding of how the programs store information.

Most databases impose a rigid format on your data. Instead of a piece of paper or an index card, on which you can write anything you like, a database requires you to define what each of your records will look like in advance.

Each entry in your database, be it a customer's name, product, order or whatever, must belong to a record, the computer equivalent of an index card.

Each record contains a set number of items, or fields, each containing a piece of information relating to that record. So in a file of club members, you might have fields for name, address, date of membership and so on.

All your records should be reasonably similar in size. It's no good specifying that the field for notes will only hold 30 characters if you then want to write 20 lines. Conversely, if you allocate large amounts of space to certain fields but don't use it, you'll be wasting valuable disc space.

Most database programs restrict you to fairly short fields, but there are a few that allow more complex text to be entered and sorted, so if you need comprehensive notes, choose one that will cope with this special application, such as Caxton's **Cardbox**.

On the whole, databases are best suited

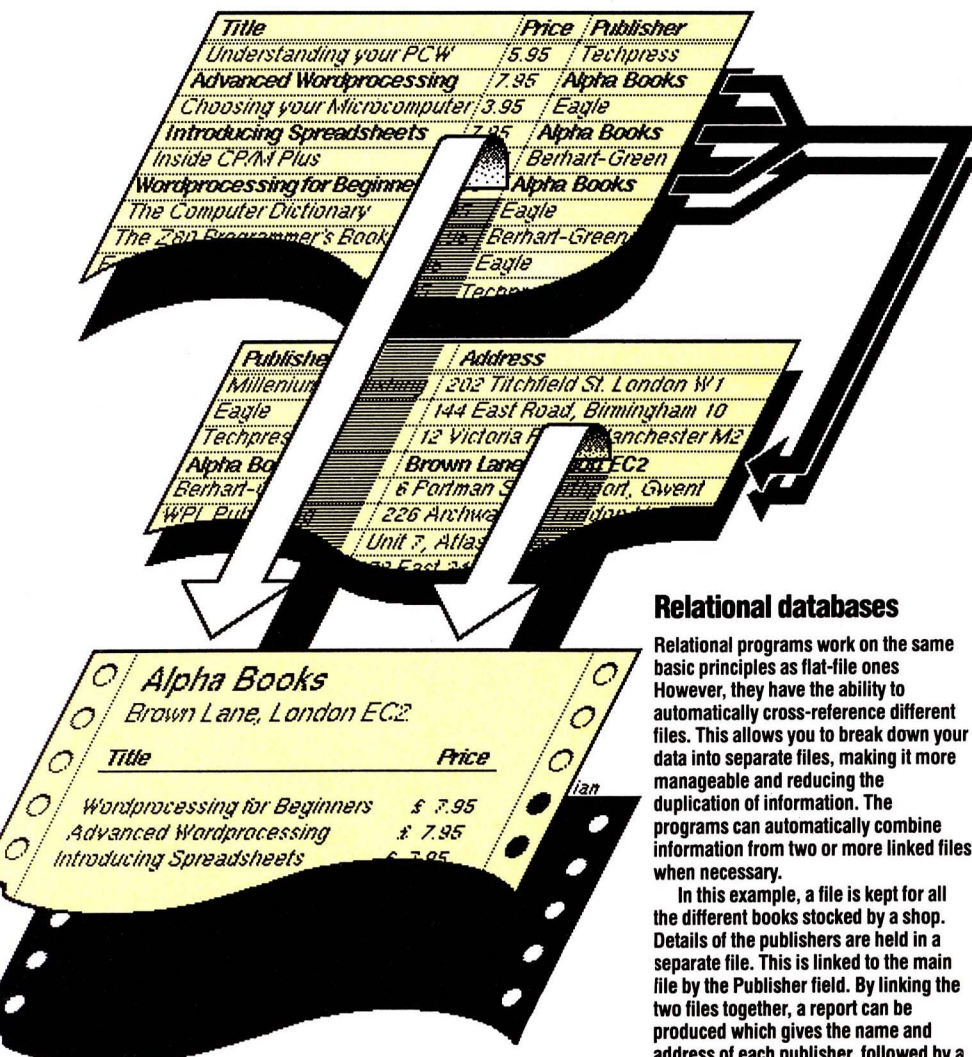
to filing information which is regular and predictable though. Fortunately, with a little thought, it's possible to organise most of your files this way.

Another major consideration is the memory required. This is particularly relevant if you're an 8256 owner. Once you've a rough idea of your fields and their size, it's a simple matter to calculate how many characters, or bytes, each record will occupy. This, in turn, will give you an idea of how many records can fit on a disc, and whether your hardware can cope.

A straightforward mailing list file might need 25 characters for the name, plus three address fields, each holding twenty characters. The total record length would be about 85 characters. A standard PCW8256 can store around 170,000 characters on one side of disk. This would leave room for around 2,000 names and addresses. But if you're going to get into more complicated records, it could be time to get that second disc drive and so boost your storage capacity to 720K — that's approximately 720,000 characters!

but the opposite is really not true. Although you can simulate some of the functions of a relational database with a reasonable flat-file system, you'll end up wasting disc space and reducing the program's performance.

For this reason, it pays to make sure you're buying a program that will do the job you want it to. If you currently use a manual system that involves cross-referencing several files, or you need to store the same information, such as an address, across many of the records in your database, then you need a relational system.



Relational databases

Relational programs work on the same basic principles as flat-file ones. However, they have the ability to automatically cross-reference different files. This allows you to break down your data into separate files, making it more manageable and reducing the duplication of information. The programs can automatically combine information from two or more linked files when necessary.

In this example, a file is kept for all the different books stocked by a shop. Details of the publishers are held in a separate file. This is linked to the main file by the Publisher field. By linking the two files together, a report can be produced which gives the name and address of each publisher, followed by a list of its books.

Data storage and the Law

The vast amount of information that can be stored by a computer makes it a powerful tool for compiling personal records. While most people's use of such files will be totally innocent, there is now a law which governs all databases.

Whether you're using your Amstrad to hold the names and addresses of potential business clients or just details of membership and attendance at your local darts club, the law now insists that you register your database.

The **Data Protection Act** came into operation in May 1986, to ensure that all such information is treated responsibly. This means that information must be treated as confidential, and may only be accessed by certain, registered users. Otherwise it must be protected by a security system, such as a password.

Furthermore, anybody who believes that you hold information about them can demand to see it, and if they consider it untruthful can force you to remove it. There are also strict conditions concerning the transfer of such data. You cannot sell a mailing list to a third party without the permission of everybody on it.

Obviously, if you use your database for purely personal reasons, it's unlikely that it will ever come to the attention of the inspectors whose duty it is to uphold this law. But if you are a business which makes much use of this sort of record, in particular for public applications, such as producing mailing shots, it could be wise to register.

Details of registration are obtainable from:
The Data Protection Registrar
 Springfield House, Water Lane, Wilmslow
 Cheshire SK9 5AX 0625-535711

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I enclose a cheque to the value of £..... No..... or ACCESS No.....

Name..... Signature.....

Address.....

.....Post Code.....(Please Print)

Dataflow is typical of many simple databases. Coupled with Mailflow, it lets you produce personalised form letters for mailshots, circulars and so on. But is the single package approach the best way of adding mailmerge to Locoscript?

Dataflow III and Mailflow III

Like most data managers, Dataflow lets you store records of a predefined format. When you create a file, you specify the names of each field, and what type of data they'll hold. This can be text, such as a name; a number; an amount of money; a date, in UK, US or Swedish formats; or a value calculated from the contents of one or more of the other fields.

This last facility saves having to work out a field, such as the price with VAT, in every record. It also conserves memory, because the calculate field needs only be computed when the record is actually used.

The calculating power is limited though. A calculated field may only be based on one operation — addition, subtraction, multiplication or division — using the values from any two fields, or one field and a number. Alternatively, all the money or numeric fields preceding the calculated fields can be totalled.

The program allows a maximum of 20 fields in a record and up to 255 characters in any one field. The number of records you can store depends on the number and length of fields but should be more than adequate for the sort of task Dataflow is suited to.

Dataflow handles one file at a time and cannot cross-reference information from several files. This limits it to purposes such as catalogues, lists and so on. It is not suitable for more involved tasks, such as order processing and invoicing.

Once a file has been created, new records can be entered from the keyboard; unwanted ones can be deleted; corrections and changes can be made; and particular records can be located via a search through a particular field. Records may also be sorted into order, using any field.

The program has a basic report facility, which produces tabulated summaries of data, including totals and sub-totals. A more extensive record search is provided at this stage. Up to three fields can be tested at once and their values can be compared. This means that you can produce a report for everybody called Smith who lives in Manchester.

One possible drawback with Dataflow is that it cannot make comparisons on date fields. This will be a drawback if you need a program to print out all the people who joined your club after a certain date, for example.

But Dataflow is greatly enhanced by two other facilities. You can read data into a Dataflow file if it's been stored in 'comma and quote delimited' format. This is not a standard data format, like SYLK or DIF, but many programs can produce it, including

those written in the PCW's Mallard Basic. You could use Dataflow to store and process results from a program that you had written.

Dataflow can also convert records back into this format for use in other programs, which is where Mailflow comes in. This straightforward mailmerge program combines records from a Dataflow file with a master document produced by Locoscript. A printed copy is created for every record taken from Dataflow.

When you write the master document, you specify the fields which will be included by typing their number, enclosed in */ characters. Mailflow automatically substitutes the relevant field into each

document as it prints them, reformatting as it goes.

You can produce personalised mailings or even use Dataflow to print envelope labels. The facility is not as quick as some mailmerge programs because the Locoscript document must first be converted to ASCII, and you also have to convert the Dataflow records.

Both programs are fairly easy to use, with extensive prompting and menus. There are no Help screens though, and Dataflow requires numeric codes to specify field types and calculations, so novices will need the manual.

The complete package represents a basic range of facilities, adequate for keeping and manipulating lists and similar files, but not really sufficient for more complex database tasks.

FACTS BOX

PRODUCT
Dataflow III/Mailflow III

SUPPLIER
Micro Power

PRICE
£49.95

Dataflow is controlled by a series of numbered menus and prompts. This makes it easy to understand, though it can be time-consuming once you're accustomed to the program. Here, a printing company has created a new contacts list for its latest catalogue.

```

***** MICRO POWER PC SOFTWARE - DATAFLOW III
Input Data to Database CONTACTS

Database contains 8 records
Entering record 8
NAME      : Chris Rogers
SALUTATION : Chris
ADDRESS1  : 131 Acacia Avenue
ADDRESS2  : Mitcham
ADDRESS3  : Surrey
HOW CONTACTED : phone call
Change (C), Next record (N) or Master Menu (M)
    
```

Once the contacts are entered, Dataflow can produce a variety of reports. You can choose which fields are included in the report, what order they're in, and what totals and sub-totals appear. This report lists all the people who first contacted the company with a phone call.

```

***** MICRO POWER PC SOFTWARE - DATAFLOW III
Extract Data

Access to the file is normal

Select from
1) - NAME
2) - SALUTATION
3) - ADDRESS1
4) - ADDRESS2
5) - ADDRESS3
6) - HOW CONTACTED

Enter number for extract field (0) or press (return) to end
    
```

LIST Where : HOW CONTACTED KEYWORD : phone call

New Contacts as of 1st September 1986 Page No. 1

| Rec No. | NAME | ADDRESS2 | ADDRESS3 |
|---------|--------------|----------------------|-----------------|
| 1 | Simon N John | 59 Muswell Hill Park | London N34 2GH |
| 3 | Liz Waikland | Sheffield | S Yorks S63 4JN |
| 5 | Kevin Barry | Wastebridge | Middlesex |
| 6 | Alison Wheel | | |
| 8 | Chris Rogers | | |

5 records selected

The relevant data is moved to Mailflow with the Extract option. The mailshot itself is written with Locoscript. Data insertion points are indicated by the field number inside */ characters. */DT/* represents the date. Printer effects, like underline and bold, are also entered this way because Mailflow doesn't understand Locoscript's control codes.

```

Speedo Printers
14 High Street
West Mulberry
Berkshire.
Telephone (04562) 567432
    
```

Liz Waikland
113 Woodfall Road
Sheffield
S Yorks S63 4JN

12th October 1986

Dear Miss Waikland,

Further to your pleasure in enclosing our price list. As you will see, Speedo Printers offers very keen prices and a very complete service.

I do hope that we are all together. If you have any hesitates to contact me.

Yours sincerely

Philip Maxwell
12 Seaview Road
Eastbourne
Sussex

12th October 1986

Dear Mr Maxwell,

Further to your letter of 26th June, I have great pleasure in enclosing our 1986 catalogue and a price list. As you will see, Speedo Printers offers very keen prices compared to other firms and a very complete service.

I do hope that we are able to do business together. If you have any queries, please do not hesitate to contact me.

Yours sincerely

John Bull
Marketing Director

Before it can be used with Mailflow, the standard letter must be converted to an ASCII format file using the Modes option on Locoscript's Disc Management screen. Running Mailflow produces the customised versions of the letter, with automatic reformatting.

```

Make ASCII file
New Name: MAILSHOT.TXT
Group: 0
Drive: B

Old Name: MAILSHOT.LOC
Group: 0
Drive: B

Save this file
Save this file
    
```



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| ● Pocket CalcStar spreadsheet for calculations, projections and analysis..... | £39.95 | | | ● CalcStar—spreadsheet for calculations, budgets, projections and analysis..... | £59 | | |
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12 months of entries are kept in a file stored on your disc. At any time, you may load a file into the computer memory, add to or edit the entries, analyse them, print statements, and then save the updated file for later use. Entries may be historic (for record keeping) or forecast (for budgeting). You may have any number of separate files, and make copies of files for archive purposes. You may advance the period covered by a file month by month.

Up to 100 separate transactions may be entered per month. Each entry consists of:

- The day of the month, e.g. 23rd of June.
- An account number, one of up to 9 defined by you to suit your circumstances e.g. 1=Barclays, 2=Visa, 3=Halifax etc.
- Reference, e.g. ABC123 for a cheque number or invoice reference.
- A class code, one of up to 50 defined by you to suit your circumstances e.g. ho=Household expenses, h1=Mortgage, h2=Rates or p0=Production, p1=Raw materials, p2=Assembly, p3=Packing, etc.
- A description so that you can see what each transaction was for, e.g. "New gearbox" or "Box of 10 discs".
- An optional single character mark which you may include for further classification, e.g. b=business, p=private, etc.
- The amount of the transaction, which may be plus or minus.
- A marker to indicate whether the entry is exempt, zero rated or taxable for VAT, or alternatively the actual VAT paid.

You may select categories according to account, class and mark (e.g. all entries, or all motoring expenses for business using a credit card, etc.) and produce reports on the screen or printer as follows:

- Full detailed statements, showing each transaction for any month or for the whole year.
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- Tables showing the totals in each class for each account.
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- Bar graphs of any category month by month.
- Pie charts of annual totals for various categories (CPC version only).

Plus: standing orders – entries optionally sorted into date order – item search facility.

Comprehensive manual and full set of practice data included. Full telephone support.

CPC version suitable for Epson-compatible, DMP2000 etc, printers, Tascopy or Utopia screen dump.

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The most important thing when choosing a database is to find one for your particular needs. Here we round up some of the possible programs.

Files for all occasions

Caxton classics

Highly regarded software producer, Caxton, has a pair of databases, intended for very different uses.

Cardbox is often seen as a simple substitute for a card index, but it's real ability is handling very long fields, containing varying amounts of text. It's ideal if your data tends to be irregular.

It's a flexible package for keeping records, allowing up to 26 fields on a card. The largest field possible is 1,404 characters, which is the card size, and the only limit on the number of cards is disc capacity.

You can mark certain important words in a long field, to speed up searches. This makes it ideal for storing awkward information such as a contact file with notes on particular people.

Condor 1 lets you design a system, tailored to your needs. It's a relational database manager, containing many powerful options. You can easily add or alter the structure of its field, for example. The maximum record size is a kilobyte and you can have up to 127 fields per record.

It also lets you produce your own screen designs. Coupled with its programming power, this allows you to establish systems for use by other people.

The product is easy to use, thanks to its near-English command language.

Condor may not be quite so versatile as **dBase II**, but it's undoubtedly more friendly. As with **Cardbox**, the manual is excellent, running to over 300 pages of tutorial. Neither program is cheap, but all Caxton products come with free and unlimited telephone support for registered users.

CARDBOX

Caxton
£99.99

CONDOR 1

Caxton
£99.99

Budget bases

If the risk of buying the wrong package is putting you off, a budget-priced database could be the answer.

Minerva's **First Base** allows up to 255 fields, with a key field to speed searches. Your record cards can have text wherever you want it. The report generator's facilities include totalling numerical fields. **First Base** also supports mailmerge, with **Locoscript** or ASCII word processors.

While **First Base** won't be the only database you'll ever need, it is a good introduction to this area of computing, and as its files can be converted to ASCII, you shouldn't need to retype

everything when you upgrade.

Matchbox is another low priced database, which could provide a novice system without too much trouble.

The maximum fields per record is 30, and their size is defined by the user. This allows up to 32,000 records per file, though memory restrictions will bring this down. Searches are available on full or partial fields. The program can also produce labels.

The Database Manager used to be known as **At Last**, and sold for £20 more than its current price. It has to be one of the cheapest relational bases around.

With an eye to friendliness, it uses menu prompts and single keys wherever possible to make its features as easy as possible to use. These include nine types of field, each of which can hold up to 99 elements, allowing you to define forename and surname within one field, then sort them separately. Sophisticated sorts are possible and structures are redefinable without data loss.

FIRST BASE

Minerva
£29.95

MATCHBOX

Quest
£29.95

THE DATABASE MANAGER

Advance Software
£29.95

All the stars

If you're a **WordStar** user, you may be interested in **Pocket DataStar** and **ReportStar**, also by MicroPro. Together they make up **Pocket InfoStar**, to create an integrated electronic office.

DataStar is a relational program, ideally suited to twin drive systems. **ReportStar** comes complete with a custom report program, for more complex reports, and a sorting routine, though MicroPro also produces **SuperSort** separately. The programs are powerful tools in their own right, but are best

used en suite, for mailmerge and the like.

POCKET INFOSTAR

Davis Rubin Associates
£69.95
£49.95 (DataStar only)
£39.95 (ReportStar only)

Further files

Retrieve uses plain language commands, which can be in English, or are easily translated, for foreign users. Sorts are available on one or two fields at a time, and up to 20 conditions are allowed.

Report formats are user-defined and the program features a calculation facility and statistical analysis, making it a powerful package for a number of applications.

Camsoft is a long-established company with a good track record, and **Cambase** combines power and a reasonable price. As well as high performance features, such as 39 fields per record, 60 character text lines and 127 lines per field, the package introduces some useful extras.

Fields can be conditional on other fields; if, for example, a person was single, there wouldn't be an extraneous field for the spouse. You can also alter field details at a later date and selections can use more than one field, to produce detailed reports. The report generator is itself a sophisticated one, and if you want to embellish its output with a word processor, it produces ASCII files.

File Manager is another program that aims for versatility without complexity. An interesting feature is that advanced systems created with the package can be interactive. This means that data from one file can call up data from elsewhere, so that it can be inserted or verified.

It also has a data compaction routine, to help cram more onto a disc. Sandpiper claims a typical ratio of two to one. Because the system is loaded into memory, the full disc storage area is available for files.

RETRIEVE

Sage
£69.99

CAMBASE

Camsoft
£49.95

FILE MANAGER

Sandpiper
£TBA

The screenshot shows a database record for 'Hatherington Smiths and Associates'. The record is displayed in a structured, tabular format with dashed lines separating fields. The fields include: COMPANY (Hatherington Smiths and Associates), DATE (12.04.82 PGE II), ADDRESS (Helliwell House, 176 Barton St), NAME (Mr Charles Hatherington), SAL (Charles), POS (Senior Partner), LOB (Accountants), MGR (MGR), CAT (C), and OPS (R0005). There are also fields for TOM (Preston), COUNTY (Hampshire), PSYCD (ENG ENG), TELEPHONE (0172 619573), HARDWARE (IBM PC 5150k Epson TX-100), SOFTWARE (Multiplan, ReportStar, Cardbox), and OTHER (Training, Disks, Etc.). At the bottom, there is a command prompt area with a list of command letters: Mask: S>Select, I>Include, E>Exclude, H>istory, B>ack, C>lear, L>Istindex; Add, D>uplicate, E>dit, D>Elete; R>Ead, W>Rite; F>ormat, P>rint; S>ave, Q>uit; LIST: F>A=first, L=C=last, B=back, F=forward, ENTRY: X=erase, H=backspace.

Cardbox comes complete with a demo file, which shows how clear its screen designs can be. The command letters are at the bottom of the screen.

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If you run any kind of cash-based business and you want total financial control without knowing anything about accounting, take a look at Cash Trader. It's been designed to address the problems you most commonly face in running your business and to solve them, simply.

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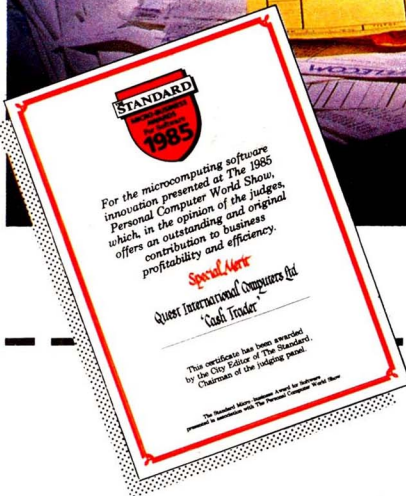
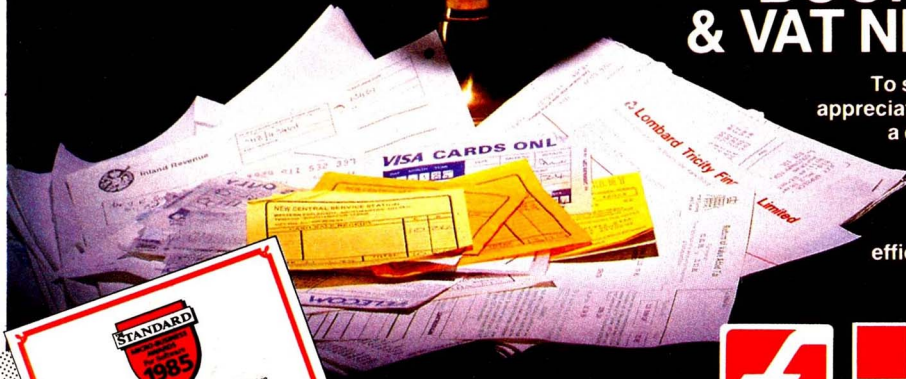
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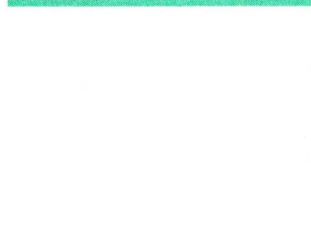
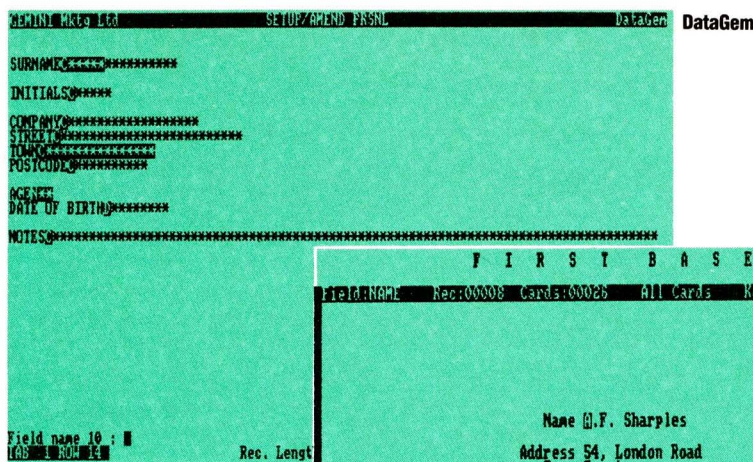
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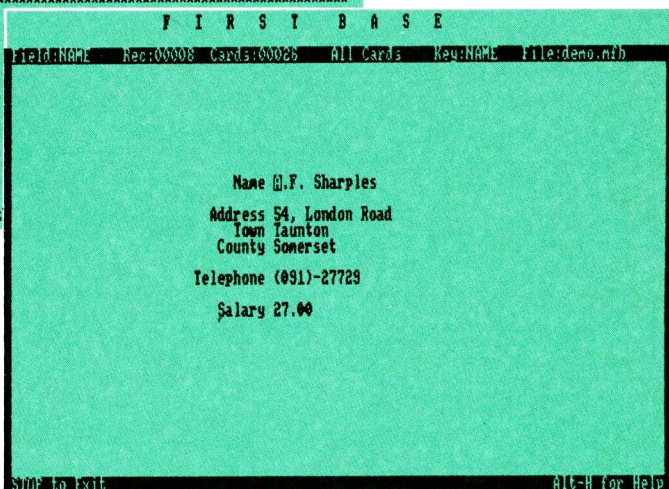
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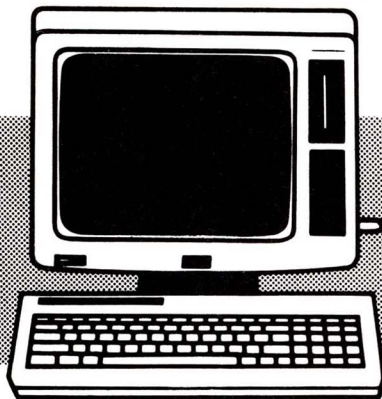
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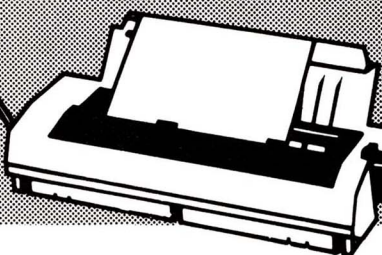
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Ever feel lost in a sea of figures? A computer is a fast and efficient number cruncher, so let your PCW demolish those digits.

Figuring it out with your Amstrad

Most people can immediately see the benefit of using their PCW for word processing or creating databases. It's much harder to recognise the value of a spreadsheet, as most people have only the vaguest idea of what one does or how to use it. But almost any computer user could find such a program a valuable investment.

Spreadsheets are a boon to anyone who works with figures. In management they can be used to plan new product launches, to monitor company cash flow, or for basic accounting.

In science and engineering they can take the tedium out of repetitive calculations, making work quicker, easier and far less prone to error. They can even take the place of a home finance package for monthly budgeting. In fact, they have so many uses because they make managing lists, tables and numbers much easier than on paper.

Spreadsheets provide a flexible way of manipulating data, and many are as good with text as they are with numbers. But although they can be near essential for every finance manager, their usefulness is dependent on the range of ideas applied to them.

All spreadsheets are basically similar. They provide a sheet on which you work, and facilities for creating a useful 'model'. You can copy entries, alter the way they are displayed, change column widths and so on.

The ability to split the screen into different sections, to see different parts of the work area at once, and to protect certain entries from accidental alteration, are well worth having and, fortunately, fairly common.

Spreadsheets also offer a range of functions to simplify formulae, much like a calculator has special buttons for certain operations. Most can add up columns and rows, compute averages and so on. Often they have a range of financial functions for calculating depreciation, interest and so on.

The general user should also look for the ability to manipulate time and dates, sort entries and manipulate text.

More sophisticated programs boast macros, which automate complex operations. Some can also produce business graphs straight from their data. Though this is convenient, it is usually possible to transfer the data from any

spreadsheet package into a separate business graphics package, which often produces better results, although it's more time-consuming.

The final consideration is performance. This relates to the size of spreadsheet that can be accommodated and the speed at which calculations take place.

Manufacturers quote the largest possible worksheet size but, in practice, often the PCW will run out of memory before these limits are reached. Some programs avoid this problem by using the disc drive as an extension to memory. This can be very effective with the large RAM disc of a PCW 8512, which can cope with very demanding problems.

In terms of speed, most programs are adequate for small worksheets but can be frustrating with full-size balance sheets and similar tasks. If your needs are straightforward, it's better to choose a simple package that works quickly, rather than one with lots of features that is slow.

How a Spreadsheet works

Spreadsheets provide a vast work area, divided into rows and columns, into which numbers, text and formulae are placed. This worksheet is usually much larger than the screen and only part of it can be seen at any one time.

At first the spreadsheet is blank and has no particular function. The finished spreadsheet's operation is purely the result of the information the user enters into it.

The intersection of rows and columns are called cells; boxes which may contain a value relating to the problem (usually a number), some labelling text, or a formula relating the values in other cells.

All formulae are reworked every time a value is changed. So once a particular spreadsheet (or model) has been created, new figures can be entered and the results calculated automatically. A finished spreadsheet can be used repeatedly with different figures, or changes in values to show how they affect overall results.

Such experimentation is useful when planning, providing swift answers to questions like, "What if the mortgage rate went down?" or, "What if sales were higher?"

In this example, a model has been created to try to maximise profits when selling an item.

This text names the numbers in the next column.

| | |
|-----------|-------|
| Unit Cost | 0.99 |
| Price | 1.5 |
| Sales | 15000 |
| ===== | |
| Profit | 7650 |

The row of = signs makes the spreadsheet clearer.

The basic figures for the problem are entered into these cells. These could be actual sales figures or experimental ones.

The formula, UNIT COST * SALES - UNIT PRICE * SALES, calculates the profit on the figures above. The spreadsheet automatically works out the result and displays it in the cell.

| | |
|-----------|-------|
| Unit Cost | 0.75 |
| Price | 1.5 |
| Sales | 15000 |
| ===== | |
| Profit | 11250 |

The profit wasn't very substantial. But if the cost of making each item is reduced to £1.50, it instantly produces a better 'bottom line'.

| | |
|-----------|-------|
| Unit Cost | 0.99 |
| Price | 1.75 |
| Sales | 13000 |
| ===== | |
| Profit | 9880 |

Alternatively, charging a higher price could help, but sales would drop. The new values produce a new profit. It becomes obvious that the real problem is the cost of manufacturing and this value that must be improved in order to maximise profits.

FIGURES

If you're looking for flexibility and features, The **Cracker** is probably the best equipped spreadsheet available for the PCW. But all that power is at a price . . .

Cracker 2

Naturally the **Cracker** has all the basic essentials you'd expect of a serious spreadsheet, but it also boasts a large number of useful extras.

It can generate business graphs from its figures, providing an effective way of illustrating reports and presentations, as well as a quick way of seeing exactly what is happening yourself. There is a large choice of graph types, including line graphs, pie charts, and bar charts.

Cracker also has functions which are useful for maintaining data. It can find particular values from a list and sort rows into order. This means that the **Cracker** can do many tasks that might otherwise require a database, but as it's limited to the size of the PCW's memory, it is not a real alternative.

The **Cracker's** large range of functions include date and time manipulation. There is also an **IF...THEN...ELSE** facility, which allows a **Cracker** model to be 'intelligent'. Rather than just working out everything as the result of mathematical formulae, it can test particular values and use an appropriate formula, then warn you that a figure is below an acceptable limit or take other relevant action.

Finally, the **Cracker** includes macros; a facility that stores keystrokes in a cell, to be played back later, just as if they were being typed at the keyboard. Coupled to its range of command-like functions, this allows expert users to use the **Cracker** almost as if it were a programming language in its own right.

This programmability turns the **Cracker** into a very versatile tool. It is well suited to anybody who wants to write models for use by other people. Spreadsheets can be created for complete novices where the model itself asks for the information it needs, then automatically work out the results.

All this makes the **Cracker** infinitely flexible. Instead of being more specialist than other spreadsheets, the advanced features make it much more adaptable to non-financial tasks, such as keeping track of club records or analysing the results of a survey.

But this complexity is not without problems. Not only is there a lot more to learn to get the most from **Cracker**, but the basic features of the program are not as easy to use as those of its less ambitious alternatives.

It uses single-letters for commands, like most other programs, but after you have selected a command, you are frequently presented with a cryptic list of what keys to press next. And often, when the program wants you to press a particular key or keys,

it doesn't tell you what to press, just that the keys you are trying are "Wrong Here".

The **Cracker** seems to make excellent use of the memory available to it and there is a healthy 17K free for your work. But it is slower than some of its rivals in recalculating a spreadsheet. This is not helped by the time it takes to display the results when its calculations are completed. Many simple operations, such as copying a block of cells, are frustratingly slow.

As only part of the program is loaded at a time and other sections are read from the disk drive as needed, a vast improvement in speed can be made by putting some **Cracker** program files onto the M: drive.

The **Cracker** is definitely worth

considering for its broad range of facilities, such as its business graphics, which make it very flexible. But its lack of speed and the awkwardness are drawbacks. It is best suited to users with some previous computer experience or who have outgrown their current spreadsheet. So, if you're new to the game or only want a spreadsheet for purely numerical tasks, look for a more straightforward program.

FACTS BOX

TITLE
THE CRACKER 2

PRICE
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NewStar

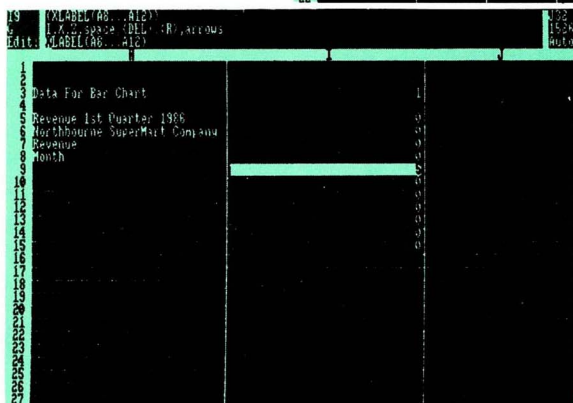
Cracking Cracker



Unlike most spreadsheets, **Cracker** does not automatically extend the work area as you use it. When you first load it, you have to insert some lines and columns before you can start work.

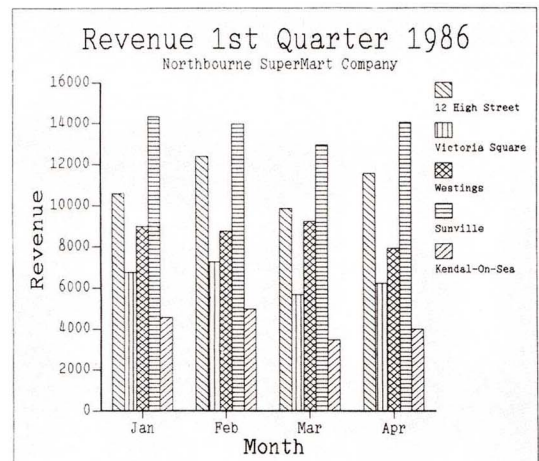
For simple operations, using the **Cracker** is much like using any other spreadsheet. Here, revenue for the branches of a supermarket chain is tabulated, with the program automatically calculating all the totals.

| Branch | Jan | Feb | Mar | Apr | Total |
|-----------------|-------|-------|-------|-------|--------|
| 12 High Street | 10587 | 12384 | 8958 | 11584 | 43513 |
| Victoria Square | 8756 | 7254 | 5874 | 6234 | 28116 |
| Westings | 8976 | 8764 | 9221 | 7621 | 34582 |
| Sunville | 14455 | 13976 | 12961 | 14067 | 55459 |
| Kendal-On-Sea | 4560 | 4980 | 3456 | 3778 | 16774 |
| Total | 45284 | 47351 | 41178 | 43766 | 177579 |



To produce a graph, you enter information about titles and various functions, which tell the program where the data is and what sort of graph to produce, in a spare area of the worksheet. The process can be quite fiddly as the functions simply show up as meaningless numbers.

Once a graph has been correctly defined, the **Cracker** will display it on screen or print it out. Shading and scaling of axes are all handled automatically.



Despite the boasts of some manufacturers, few spreadsheets can cope with vast worksheets. **ScratchPad Plus** can, but you may find its lack of certain other features makes it more suitable for some tasks than others.

ScratchPad Plus

ScratchPad Plus is a typical example of a straightforward spreadsheet. It does its job well but doesn't have many of the features incorporated into more advanced programs, which makes them simpler to use and more flexible.

ScratchPad has one big advantage over other programs. Most spreadsheets restrict you to a sheet that can be held entirely in memory. While they might claim to allow you larger areas, such as 60 columns by 200 rows, in practice you'll fill the memory long before these limits are reached.

This problem doesn't arise with **ScratchPad**, which automatically uses disc storage, or the PCW's Ram drive, and so effectively extends the memory available. This makes it far less quick than some programs, but the trade-off is well worth it if you anticipate the need for very large worksheets.

Beyond this, the program provides adequate facilities. Setting up your worksheet is a fairly involved process because of the limited set of commands and the crude way in which formulae are created.

Most spreadsheets let you refer to the different cells in two ways. You can use an actual co-ordinate, or a relative co-ordinate, which indicates that the cell you want is so many rows and columns away from your current position. This latter approach makes it quick and easy to duplicate formulae across a worksheet without having to alter each cell individually.

ScratchPad has no relative system at all. Instead, it will automatically adjust the cell co-ordinates in a formula as best it can while you copy them. This approach works fine for simple worksheets, such as balance sheets, but can be awkward for more sophisticated problems.

An adequate set of functions are available, including all the popular mathematical ones, as well as a couple of useful extras like LOOKUP, IF and CHOOSE. These allow some fairly sophisticated problems to be tackled.

Although the program can sort rows of data, it only possesses a limited set of functions for handling text. Again, this limits its appeal to purely financial work.

If you work in this field, you'll find the program has a useful consolidation facility which allows several related worksheets to be combined into an overall view. This is frequently needed in business where similar worksheets for individual sales regions, time periods, products and so on, need to

be totalled or averaged into a summary worksheet.

ScratchPad comes with a separate consolidation program called CONS, which will total or average a number of similar sheets into one overall master sheet. CONS also allows **ScratchPad** worksheets to be

converted into other formats so that the data can be used in other programs. Two formats are supported; DIF is the popular one and can be used with many different programs while SDF is designed specifically so that worksheets can be exchanged with the popular **Supercalc** spreadsheet.

Although **ScratchPad** is not as flexible as many programs, it is easy to learn and use and handles most straightforward applications, such as accounting and financial analysis, extremely well.

FACTS BOX

TITLE
ScratchPad Plus
PRICE
£69.99
PUBLISHER
Caxton

Consolidating four quarters with Scratchpad

Entry: E12=SUM(E14..E16) calc off E18

| The Gadget Company: Revenue 1st Quarter | | | | |
|---|---------|--------|------------|-------|
| Product | Price | London | Manchester | Total |
| Gadget | £49.95 | | | £0.00 |
| Widget | £69.95 | | | £0.00 |
| Portable Widget | £29.95 | | | £0.00 |
| Fangle | £149.95 | | | £0.00 |
| Pro Fangle | £199.95 | | | £0.00 |
| | | £0.00 | £0.00 | £0.00 |
| Overhead | | | | |
| Production Costs | | £0.00 | £0.00 | £0.00 |
| Cost of sales | | | | |
| Nett revenue | | £0.00 | £0.00 | |

Creating a **ScratchPad Plus** worksheet is much the same as with other spreadsheets. You enter figures, formulae and text labels appropriate to the job, then format them so that the on-screen image, and printout, is as clear as possible. **ScratchPad** is limited in that all its columns must be the same width and its method of duplicating a formula needs care. Its advantage — worksheets can be much larger.

ScratchPad worksheets can be automatically consolidated to form an overall view. Quarterly sales figures and revenues for The Gadget Company Limited are consolidated into yearly results. Each quarter's worksheet is identical except for the sales data, so the original can be saved to disk, then used as a template for successive quarters, under another name.

| The Gadget Company: Revenue 1st Quarter | | | | |
|---|---------|-----------|------------|------------|
| Product | Price | London | Manchester | Total |
| Gadget | £49.95 | 231 | 193 | £2179.80 |
| Widget | £69.95 | 197 | 170 | £25671.05 |
| Portable Widget | £29.95 | 346 | 225 | £17101.45 |
| Fangle | £149.95 | 213 | 167 | £56981.00 |
| Pr | | | | |
| Ov | | | | |
| Co | | | | |
| -- | | | | |
| Ne | | | | |
| Gadget | £49.95 | 182 | 127 | £19434.55 |
| Widget | £69.95 | 163 | 112 | £19236.25 |
| Portable Widget | £29.95 | 301 | 211 | £15334.40 |
| Fangle | £149.95 | 178 | 195 | £49953.35 |
| Pro Fangle | £199.95 | 100 | 65 | £32991.75 |
| | | £76193.80 | £56736.50 | £132930.30 |
| Overhead | | £29432.00 | £20400.00 | £49832.00 |
| Production Costs | | £30676.00 | £22981.00 | £53657.00 |
| Cost of sales | | £45000.00 | £38000.00 | £83000.00 |
| Nett revenue | | £15585.80 | £9555.50 | £25141.30 |

Formula: 0 calc on D10

| The Gadget Company: Yearly Revenue | | | | |
|------------------------------------|---------|--------|------------|-------|
| Product | Price | London | Manchester | Total |
| Gadget | £49.95 | 0 | 0 | £0.00 |
| Widget | £69.95 | 0 | 0 | £0.00 |
| Portable Widget | £29.95 | 0 | 0 | £0.00 |
| Fangle | £149.95 | 0 | 0 | £0.00 |
| Pro Fangle | £199.95 | 0 | 0 | £0.00 |
| | | £0.00 | £0.00 | £0.00 |

1-Consolidate ScratchPad files
SP SP SP SP
2-ScratchPad file to DIF format
SP ==) .DIF
3-DIF file to ScratchPad format
DIF ==) .SP
4-SDF file to ScratchPad format
SDF ==) .SP
5-Exit program
(Enter 1, 2, 3, 4, or 5)

1
Enter output filename: GADGETYR
Enter Master filename: GADGETNS
Enter filename: GADGETQ1
Enter filename: GADGETQ2
Enter filename: GADGETQ3
Enter filename: GADGETQ4
Enter filename:

Next a master sheet is created. This the same as the individual sheets but has all its data set to zero. When the sheets are consolidated, they will be passed through this sheet and the totals will accumulate in the positions that are currently zero.

Running the CONS program and choosing option 1 performs the consolidation. The user must enter the name of the master sheet, the names of the individual sheets and a name for the final, consolidated sheet. The final yearly balance sheet is produced automatically by CONS. It can be used and altered just like any other **ScratchPad** worksheet.

| The Gadget Company: Yearly Revenue | | | | |
|------------------------------------|---------|-------------|-------------|-------------|
| Product | Price | London | Manchester | Total |
| Gadget | £249.75 | 812 | 550 | £42657.00 |
| Widget | £349.75 | 584 | 452 | £362341.00 |
| Portable Widget | £149.75 | 1017 | 820 | £275090.75 |
| Fangle | £749.75 | 685 | 553 | £926190.50 |
| Pro Fangle | £999.75 | 417 | 313 | £729617.50 |
| | | £1489821.25 | £1148275.50 | £2638096.75 |
| Overhead | | £101728.00 | £91600.00 | £183328.00 |
| Production Costs | | £119972.00 | £92852.00 | £212824.00 |
| Cost of sales | | £180000.00 | £152000.00 | £332000.00 |
| Nett revenue | | £1250121.25 | £958623.50 | £2208744.75 |

FIGURES

Most people think they left statistics behind when they left school. But statistical analysis is an important part of everyday life, from business meetings to advertising and the media.

Understanding statistics

Statistics can be invaluable for analysing business data and finding clear and convincing ways of presenting information. Most simple statistics can be handled with a spreadsheet, but for more involved work you need a specialist package.

These provide a range of common statistical functions, of which most are only of use to specialists, but a number have a wider appeal, such as averages and correlation. An introductory book on the subject may suggest a few possibilities.

Oxstat

Oxstat is one such package and consists of a series of linked programs, written in Mallard Basic. Its speed is not unacceptably slow, but it's best suited to the PCW8512, where using the large M drive will speed up the time taken to move between its different parts.

The opening screen is a spreadsheet-like table of rows and columns, which makes it easy to enter and amend the figures for testing. It allows the same set of figures to be tested in different ways without the need for a separate editor or re-typing.

The data can be manipulated in several ways; the Calculator

option lets you perform arithmetic on rows and columns, and there are spread-sheet-style commands to copy and move particular entries. An added bonus is that the results of some calculations can automatically be placed back into the table for further use.

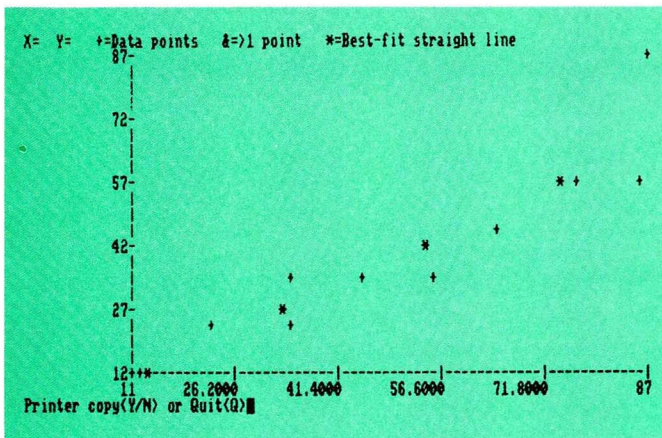
Once the data is ready, a test is selected. Test calculations available through **Oxstat** include medians, means, chi-square, Anova, Spearman's rank, paired T-test, Mann-Whitney U, correlation or Wilcoxon test.

A histogram and scatter graph, with best-fit line, can be produced, but sadly these don't make use of the PCW's graphics and are use normal screen characters — *, +, etc — which makes the results rather too imprecise for serious users.

The tests provided by statistics packages are always a matter for debate. Some users find useless what others consider essential. **Oxstat's** range is pretty basic, but should be enough for people who don't do statistics for a living.

FACTS BOX

TITLE
Oxstats
PRICE
£113.85
PUBLISHER
Medstat Ltd



An Oxstat scatter-graph, with the data-points marked by +s. Stars indicate the best-fit line, which illustrates the general shape of the data

Figuring out Figures

SPREADSHEETS

CRACKER 2

NewStar/£49.00
• Statistics • Graphics
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• Trigonometric • Windows
• Macros

MULTIPLAN

NewStar/£69.99
• Statistics • Sorting • Logical operations
• Trigonometric • Windows • Relates spreadsheets

PLANNERCALC

NewStar/£39.00
• 65,563 max. sheet size
• Statistics • Logical operations
• Limited maths • Windows
• English-style commands

POCKET CALCSTAR

Davis Rubin Associates/£39.95
• 1,400 active cells, max.
• 3-63 char. column width
• Menu driven • Templates of cells can be created

SCRATCH PAD PLUS

Caxton/£69.99
• Statistics • Sorting • Logical operations
• Trigonometric • Drive used for extended workspace
• Flexible rows and columns • Versatile calculations

Multiple windows

Configured for Amstrad

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Software City/£49.95
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STATISTICS PACKAGES

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• Linear and polynomial regression
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MedStat Ltd/£113.85
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• Linear correlation
• Ten way multiple linear regression
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• Spearman ranked correlation test
• Unpaired Students t-test
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RESOURCE MANAGEMENT

SC Coleman/£27.95
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PRINT ROTATORS

Landscape

System Build/£19.95
• 250 character width × 96 lines depth

ROTATE

Logicom/£24.95
• 255 character width × 96 lines

Contacts

Caxton Software Ltd

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Covent Garden
London WC2E 9HE
01-379 6502

SC Coleman

33 Leicester Road
Ashby-de-la-Zouch
Leics LE6 5DA
0530-415919

Davis Rubin Associates Ltd

1 Canonbourne
Weston Sub Edge
Chipping Campden
Glos GL55 6HQ
0386-841181

Logicom

Proteus Computing Ltd
2 Iffley Road

London W6 OPA

01-748 2302

Medstat Ltd

City House
Maid Marian Way
Nottingham NG1 6BH
0602-411120

NewStar Software Ltd

200 North Service Road
Brentwood
Essex CM14 4SG
0277-220573

Software City

382 Kings Road
Chelsea
London SW3 5UZ
01-352 9220

System Build

Market Place
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SIMPLIFILE

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Some features of SIMPLIFILE are:

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- Conditional input fields – prevents incorrect entry.
- Easy editing of data on screen.
- Full editing of screen layout with cursor keys controlling the positioning of each field.
- Full editing of report layout using the same concept of cursor control.
- Report layouts allow totals of any numeric fields.
- Menu driven program design for ease of use.
- Window help screens – like LocoScript.
- No need to learn a new language. SIMPLIFILE is logic controlled.

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| | | |
|---------------------|--------------------|---------------------------------------|
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| Amstrad 8512 | for current | Caxton CONDOR 1.....£82.00 inc. |
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for PCW8256/8512

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| | | |
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| Micro-collection | PCW8256/8512 | £49.95 |
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| Saxon posterprint | All | £29.95 |
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| VP Info database | PC1512/IBM | £99.00 |
| Newword 2 | All | £69.00 |
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FINANCE

Computerising your business or home accounts won't let you sit back and leave it all to your PCW. But if you adopt a logical approach, it can ease the daily routine.

Accounting with your Amstrad

Transferring your accounts from paper to computer is generally reckoned to be a good thing. Millions have done it satisfactorily and soon discovered the time that it saves. But it's not something to be approached lightly.

You might think that your PCW8256 is

the perfect machine for running a comprehensive accounts package, only to discover that you need to add a second drive to run the software that's best suited to your needs.

And what is the best package? Will a simple, general accounting package suit your needs or maybe there is a specialist

program tailored to your line of work? There's a lot to consider before you take a single step or spend anything at all.

Sit back and ask yourself some questions. The first should be, are your accounts big enough to warrant being computerised? During the first burst of popularity for the home micro, there was a trend towards using them for all manner of things which were much better done manually; address books, cataloguing the cats, home accounts, anything.

If you've made do up till now with a tenpenny notebook, do you really need to change? And don't forget that if you regard keeping your written accounts as a nuisance and omit to do it regularly, having everything on computer isn't likely to make you apply yourself more diligently to the task.

Are you prepared to develop good working practice? You may feel wary about keeping your precious financial records on disc. There's no need to be, provided you're

Choosing your system

Are you looking for an accounting program that will handle the payrolls of twenty employees, or just balance your cheque book stubs? It's important that you match power to purpose when you choose a package.

There has been such growth in accounting software for the PCW that the newcomer will most likely be bewildered by the choice. But this proliferation does mean that somewhere there should be the right accounting package for you, if you know where to look and what you want.

ON A BUDGET

If you're looking for a simple program for home use, or you're in business as a sole trader, with no more than one or two staff, then you'll probably just want to

keep track of your cash and bank records and VAT. In that case, you should be looking at one of the systems under about £40. In this range you'll find **Money Manager** (£29.95), reviewed over the page.

Simple Accounts from Cornix Software, costs £34.95. It allows 200 transactions per folio, a folio being a week, month or any other period to suit yourself. VAT is catered for, and income and expenditure can be analysed under 20 different headings. However one peculiarity is that unpaid debts count

| CASH BOOK POSITION | | |
|--------------------|-----------|-----------|
| | CASH BOOK | STATEMENT |
| Opening Balance | 0.00 | 0.00 |
| Unmatched Receipt | 0.00 | 0.00 |
| Unmatched Payment | 0.00 | 0.00 |
| Current Balance | 0.00 | 0.00 |

RETURN TO CONTINUE

PAYROLL MENU

- A. Add/Amend Employee
- C. Calculate Payroll
- P. Payslips
- S. Summary
- D. Document Print
- Y. Year Start/End
- M. Maintain File
- R. S.S.P. Records
- Function

Press EXIT to Finish Day

Sandpiper Accounts and Payroll

Cashbook Accounts Version 3.1 PAYMENT(S) ENTRY @ 21/12/1985 Saxon Computing

SERIAL :

SUPPLIER KEY : DESCRIPTION :

TYPE OF PAYMENT (C/B) :

BANK KEY : DESCRIPTION :

TOTAL AMOUNT :£

| CATEGORY KEY | DESCRIPTION | AMOUNT |
|--------------|-------------|--------|
| | | |

1 MENU 2 3 4 5 6 ENTER 7

Saxon Cashbook Accounts

towards your 200 transactions, so if you have too many slow payers they could completely ruin your accounts system!

Cashbook Accounts from Saxon Computing is along similar lines and costs £29.95, covering VAT, weekly cash reports and allowing up to 50 payment categories, 10 bank accounts and 175 suppliers.

MODULAR SYSTEMS

For most people, the next step up from a simple cash-based system probably means a fully-fledged accounting system with sales and purchase ledgers, stock control, payroll, and accounts analysis through to trial balance or balance sheet. This is almost certainly going to require a second disc drive.

The suppliers of such systems know that people in different businesses have different needs, though, and the different modules that make up most of these packages can be purchased separately.

You may, for example, have a predominantly cash-based business; the accounts could then be handled quite adequately by one of the above, cheaper packages. But if you also have a sizeable payroll or a comprehensive stock system to look after, rather than buy a full system which would be much more powerful and complicated than necessary, you should consider purchasing the individual modules to suit your particular needs.

Camssoft offers a payroll

careful. Losing electronically recorded information isn't all that common — when did you last have an unannounced power cut, for instance?

But when working at the computer you must get into the habit of saving information to disc every few minutes. And at the end of the day you must make a back-up copy, so that your entire records are duplicated.

Some people have the impression that computer discs are meant to take the place of paperwork, but that's far from the truth; important records will be printed out anyway. The real benefits of computerisation are to make access to information quicker, remove all the boring financial calculations, and speed up the production of ledger accounts, invoices and so on.

If you still want to take the step towards computerisation, then the first thing to look for is advice. Consult your accountants and see what they know about computerised accounts. Ask if they have other clients like

yourself, who have already taken the plunge. User groups are also a good source of contacts: the PCW Users Group has several hundred members, many of them running small businesses, all of whom are ready to chat to you about their own experiences.

Then, before buying an accounting package, you should list your accounting requirements and look for something that meets them, rather than buying what appears to be suitable and hoping for the best.

Don't be afraid to write to software companies asking if their package will cater for 25 employees, 300+ sales ledger accounts and so on. Their replies will tell you something about their level of interest in their customers. Plus it's also essential to know whether or not they run a support service to deal with your queries and what this costs.

You should also find out if the software runs on one disc drive or two, and perhaps

ask to be put in touch with any satisfied customers. Bear in mind too that the more popular a package, the more support you're likely to get from the software house and other users; a product that's only been bought by three people in the entire country. . . well, there could be a reason for that.

Don't be daunted by what seems a monumental task. You should run your manual and written accounts side by side for a while, perhaps computerising your cash book or payroll first, followed by your stock records and so on. This allows you to get used to the system slowly, and make your mistakes when it doesn't matter too much.

Look round for computer courses, and remember that for larger businesses it probably isn't wise to have only one member of staff knowledgeable about the system. Your computer isn't likely to get pregnant or catch flu, but humans do.

program for £49.95 that caters for any number of employees, calculates tax, NI, and so on automatically, produces payslips and also gives you a coin analysis for the payment of cash wages.

For £49 MAP's **Payroll** has similar facilities and will also print out cheques and cater for credit transfers, while Sage's **Payroll** costs £69.99 and Sandpiper's is £69.95 for a single-drive version, £79.95 for the dual drive.

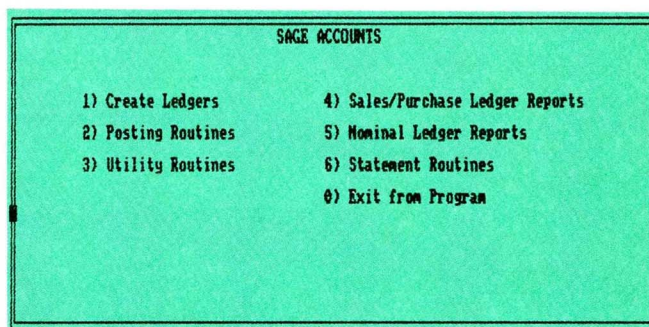
In a similar fashion, stock control programs are available either separately or as part of a package. So are several invoicing programs and the usual sales, purchase and nominal ledgers. Buying a

single package for an independent part of your business records, like payroll or stock control, is one way to familiarise yourself computerisation without committing yourself to it totally. And the option is still left open for you to add further modules from the same software company's range.

COMPLETE PACKAGES

The one disadvantage of buying one module at a time is that it is more costly. You may prefer to take the plunge at once, in which case you'll probably be spending £150-£200.

Sage's system at £199.99 offers full accounting to trial balance and balance sheet, stock records, payroll and



Sage Popular Accounts



Quest Cashtrader

invoicing. Camsoft's combined package costs £149.95, but this excludes their payroll system—a further £49, making £199.90 in total. MAP's costs £149 plus £49 for the payroll module. Sandpiper's complete system costs £179.95 for one drive and £199.95 for the two drive version.

As you can see, pricing tends to be very competitive, and the saving of a few pounds isn't a reason for buying a particular package. Buy the one that you need. Also check the cost of software support, in addition to the package, which can set you back half as much again.

SPECIAL NEEDS

Quest Business Software offer

packages that fill slightly different areas. Their **Cash Trader** at £99.95 acts as a giant cash book with 140 different analysis headings, aimed at those who have no need for detailed ledger accounts. For accountants preparing client information from incomplete records, their **Shoobox** program at £149.95 provides a nominal ledger to balance sheet service, while they also supply **TimeRecorder** (£69.95) for the professional practice needing to allocate time and costs to their clients' accounts.

There is also a growing number of packages aimed at particular professions, so check whether there's one aimed specifically at your business.

The modular approach to accounting packages has distinct advantages if you need a powerful, expandable system. We put MAP's entry into this market through its paces.

MAP Integrated Accounting Package

The MAP Integrated Accounting suite is typical of many in the £150-£200 range. The modules are available separately, but are at their most powerful when fully integrated.

If you have several subsidiary companies this system will cope with up to 26 different sets of accounts — always subject to your Amstrad's disc capacity, of course!

In theory it is possible to use the 8256's single drive to run the system, with constant swapping of discs, but in practice the space most companies need for data storage means that the second drive is essential.

Be prepared to spend some time simply setting up the system. Three master discs are provided, and all six sides must be

backed up, then separate data discs are prepared for sales, purchases, nominal, stock and payroll. Each of these is then backed up in turn, and don't forget they have to be backed up constantly when in use.

After all this work you'll be relieved to hear that the MAP manual is nothing if not thorough, though the indexing could be better. After an introduction to the system, you're told how to initialise data discs. You only need to know how to load a CP/M disc and use Diskit and everything thereafter is similarly well explained.

The advantage of a full system is its integrated nature. Nominal postings can be done automatically from the sales and

purchase ledgers, while the purchase ledger can also be linked to the stock control system. A 'Batch Control' element has been included — you enter the total figure before starting to post individual items, and the system keeps a comparison for you.

There are training courses available either in Manchester or on-site, while MAP also offer a support service which is free for the first month, and costs £50 for one year thereafter. The payroll support service is free for the first twelve months.

The sales, purchase, nominal and stock control modules that make up **Integrated Accounting** cost £49 each but the four cost only £149 if you buy them together. The payroll module also costs £49, and this has to be bought separately and added to the cost, but the £198 total is a typical price for this standard of accounting package.

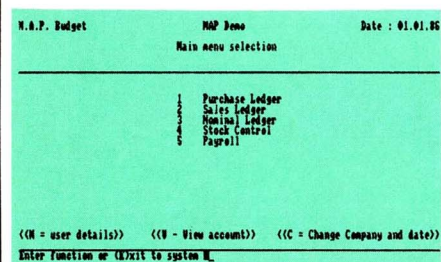
FACTS BOX

TITLE
Integrated Accounting

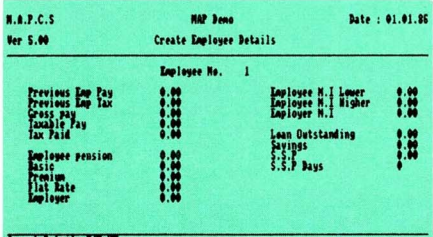
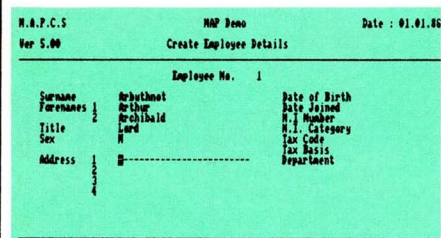
PRICE
£149

PUBLISHER
MAP

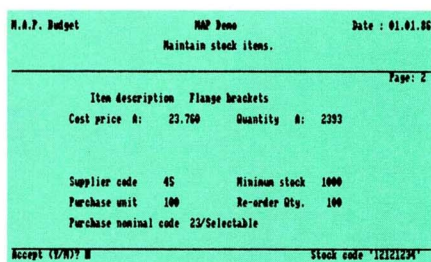
Mapping MAP



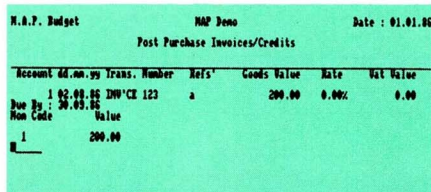
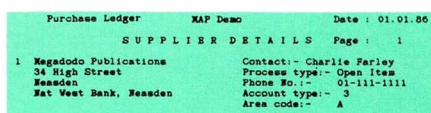
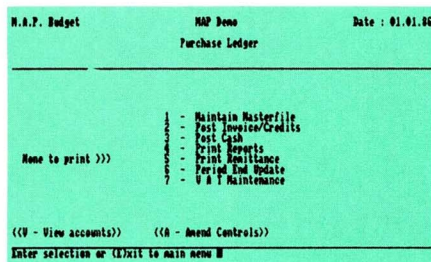
The opening screen of Integrated Accounting shows the linked modules. Each module requires its own master disc, plus a disc for storing data, and with various start-up and utility programs as well, all needing back-up copies to be made. You'd be well advised to invest in a capacious disc storage box!



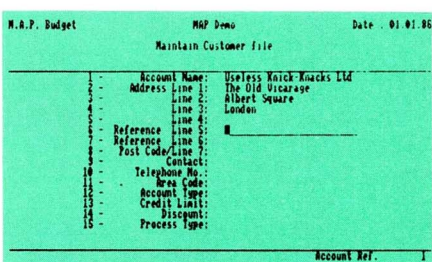
The records of one employee, part-entered in the payroll system. Subject to disc capacity, the program will cater for up to 9,999 employees, in 99 different departments, being paid per week, per four weeks or per calendar month. Six types of pay deduction can be handled as well as ten different additions to the basic pay.



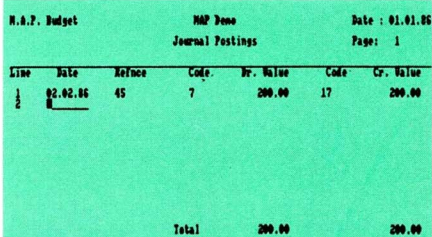
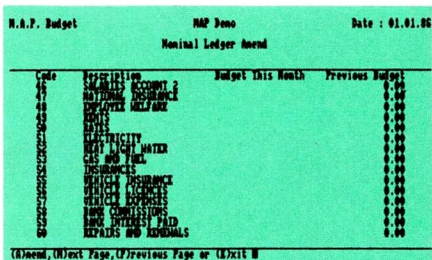
The stock control program is comprehensive; a massive 100K for the program itself, with almost a further 30K needed for each 100 stock items on the data discs. Each item can have up to five different buying prices. A Job Costing module can also be added to the system.



The purchase ledger contains a sheet for details of each supplier, and code numbers which link with stock records. A cheque printing program is provided, with stationery available from MAP. You will need approximately 80K of memory per 100 suppliers, and 175K for the sales/purchase program, whether you are using one or both.



A sample of expenses 'pages' in the nominal ledger. Up to 19 different accounts are set aside for each of sales and purchases, 90 for expenses, 20 for fixed assets, plus ledger and bank control accounts, Profit & Loss account; 250 ledger accounts in all. The Journal is also kept in this part of the program.



Details of a new customer are entered in the sales ledger file, with space available to set the credit limit. When posting sales invoices, and for cash received, the running balance is checked against the credit limit for each customer. The angriness of any reminder is up to you.

FINANCE

For the home or small business user, **Money Manager** is an introduction to computerised accounting. But how useful is this budget buy?

Money Manager

For a small business, which doesn't require the complexity of a comprehensive but expensive accounts package, or for home use, **Money Manager** could be the ideal package.

It has undoubted attractions if you like to keep a tight rein on your personal accounts. Should you wish to keep track of your bank balance, credit cards and savings accounts, as well as knowing how much you're spending per month or per annum on rates, food, computer software, and so on, it will suit the purpose admirably.

The small business user may also be interested in the package. But how small is small in the eyes of **Money Manager**? Well, the absolute maximum number of entries it will accept for one month is 100, though the manual advises you that this is "subject to the total memory capacity of the computer."

Unfortunately it doesn't go on to explain exactly what that means. The manual's designed to cover all five computers in the Amstrad CPC and PCW ranges. If you take it that, with nigh-on 100 entries per month each and every month, **Money Manager** will run out of memory, you'll be safe. You could always split your files across more than one disc though.

Each data file that you create can only have a maximum of nine Accounts headings, but between them these can contain up to 50 sub-headings for types of income or expenditure.

The manual is the program's main drawback. One example of its poor organisation is that on page six you're told to select an option, but not told how to do it till page eight. If you later need to change the standard rate of VAT, the manual doesn't tell you how. You'll eventually stumble across it in one of the menus.

It's a shame about the poor instructions because the program itself is very good within its limits. You have to get in there and find things out for yourself, but at least you'll familiarise yourself with what's going on. In its favour, Connect Systems does offer a free helpline, so if you've coped with manual accounts, you should have no major problems.

FACTS BOX

TITLE

Money Manager

PRICE

£29.95

PUBLISHER

Advance

Managing Money Manager



Money Manager is menu driven. The start menu allows you to create a new file of data or load an existing file from disc. The latter option automatically lists the files on the data disc. With a data file loaded, the main menu offers the options illustrated.



Add-or-edit-entries

- Sort entries into date order
- Detailed statement
- VAT statement
- Summary statement (by month)
- Summary statement (by account)
- Account statistics
- Bar chart
- Add or edit codes
- Search data
- Add a new month
- Save and exit

Business data sample

| ACCOUNT CODES: | A/c | Description | Starting balance |
|----------------|---------------|-------------|------------------|
| 1 | Nat West | | 2,543.49 |
| 2 | Cash | | -57.67 |
| 3 | Visa | | -142.32 |
| 4 | VAT | | -743.26 |
| 5 | Acme Sup. Co. | | 0.00 |

CLASS CODES:

| Code | Description |
|------|---------------|
| t0 | TRANSFERS |
| d0 | DRAWINGS |
| f0 | FINANCIAL |
| f1 | Chrgs & int |
| f2 | VAT |
| i0 | INCOME |
| i1 | Sales |
| i2 | Services |
| a0 | CAPITAL EQUIP |
| a1 | Cars |
| a2 | Office equip |
| a3 | Machinery |
| o0 | OVERHEADS |
| o1 | Wages |
| o2 | Rent |
| o3 | Services |
| o4 | Telephone |
| o5 | Postage |
| o6 | Stationery |
| o7 | Travel |
| o8 | Misc |
| m0 | MARKETING |
| m1 | Advertising |
| m2 | Printing |
| p0 | PRODUCTION |
| p1 | Raw materials |
| p2 | Packaging |

The accounts and codes that are in use can be listed on screen or printed as a memo, and all codes, descriptions and starting balances can be edited as required. A warning is given not to edit any heading which already has transactions entered, as these would be erased.

Business data sample

| Day | A/c | Ref | Cl | Description | Ex | Debit | Credit | Balance |
|-----|-----|-----|----|--------------|----|-----------|--------|-----------|
| 1 | 1 | so | o2 | Rent | | 360.00- | | 360.00- |
| 1 | 1 | so | d0 | DRAWINGS | | 1,500.00- | | 1,860.00- |
| 7 | 1 | so | i2 | Archer & Co. | | | 180.00 | 1,680.00- |
| 15 | 1 | so | o1 | Wages | | 500.00- | | 2,180.00- |

Separate monthly summaries are available for VAT purposes, with exempt and zero-rated items listed together in one column, as shown. The amount of VAT due or reclaimable is worked out, though a quarterly VAT return option is not available. This leaves the user to add together the relevant three months' figures.

A print-out of one account for one month. In this case it's a bank current account, though it could as easily be a credit card or even a ledger account. Insertions can be made to add omitted items, such as bank charges, while any uncleared debits and credits can be 'postponed' to the following month to facilitate bank reconciliations.

Business data sample

VAT statement for Dec-86
 All accounts
 All classes
 All marks
 Taxable entries included
 Zero-rated entries included
 Exempt entries included
 VAT rate: s = standard rate at 15 %
 0 = zero rated
 - = exempt

| INPUT VAT: | Day | Ac | Ref | Cl | Description | Ex | Exempt/0-rated | Taxable | Rate | VAT | Total |
|------------|-----|----|-----|----|---------------|----|----------------|---------|---------|---------|-----------|
| | 1 | 1 | so | o2 | Rent | | 360.00- | | - | | 360.00- |
| | 1 | 2 | 121 | o7 | Travel | | | 15.97- | s | 2.40- | 18.37- |
| | 1 | 5 | 122 | p1 | Raw materials | | | 191.71- | s | 28.76- | 220.47- |
| | 1 | 1 | so | d0 | DRAWINGS | | 1,500.00- | | - | | 1,500.00- |
| | | | | | | | 17.39- | | s | 2.61- | 20.00- |
| | | | | | | | 4.74- | | s | 0.71- | 5.45- |
| | | | | | | | 16.94- | | s | 2.54- | 19.48- |
| | | | | | | | 323.91- | | s | 48.59- | 372.50- |
| | | | | | | | 5.96- | | s | 0.89- | 6.85- |
| | | | | | | | 500.00- | | - | | 500.00- |
| | | | | | | | 298.43- | | s | 44.77- | 343.20- |
| | | | | | | | 18.45- | | s | 2.77- | 21.22- |
| | | | | | | | 66.54- | | - | | 66.54- |
| | | | | | | | | 15.97- | s | 2.39- | 18.36- |
| | | | | | | | | 39.60- | s | 5.94- | 45.54- |
| | | | | | | | 415.06- | | - | | 415.06- |
| | | | | | | | 641.00- | | 049.08- | 142.96- | 3,933.04- |

Personal data sample

Detailed Statement for Mar-86
 Account No. 1 (Current a/c)
 All classes
 All marks

| Day | A/c | Ref | Cl | Description | Ex | Debit | Credit | Balance |
|-----|-----|-----|----|-------------|----|---------|--------|---------|
| 1 | 1 | ms0 | h1 | Mortgage | | 132.50- | | 132.50- |
| 1 | 1 | ms0 | h5 | Gas | | 55.00- | | 187.50- |
| 5 | 1 | 115 | 12 | Petrol | b | 23.46- | | 210.96- |
| 8 | 1 | 116 | 11 | Food | h | 42.60- | | 253.56- |
| 9 | 1 | 117 | m0 | Alison | h | 58.50- | | 312.06- |
| 10 | 1 | 118 | m0 | MISCELLAN. | h | 8.40- | | 320.46- |
| 14 | 1 | 1 | t0 | from 6 | | | 970.27 | 649.21 |
| 15 | 1 | 119 | 11 | Food | h | 66.09- | | 583.72 |
| 15 | 1 | 1 | 14 | Cash (card) | h | 50.00- | | 533.72 |
| 18 | 1 | 127 | t0 | to 3 | | 100.00- | | 433.72 |
| 18 | 1 | 126 | h6 | Electricity | | 90.18- | | 343.54 |
| 19 | | | | | | | 442.65 | 786.19 |

Limited statistics can be prepared, showing the number of monthly transactions, total debits and credits, cash flow, and so on. Here you can see the VAT account movements for a year, but you may wish to summarise your household expenditure, business expenses or any similar field. The average balance is the true average, worked out on a time basis.

Business data sample

Account balance statistics for Jan-86 to Dec-86
 Account No. 4 (VAT)

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | YEAR |
|----------------|---------|---------|---------|---------|----------|----------|----------|---------|----------|----------|---------|----------|----------|
| Entries | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 16 |
| Starting | 743.26- | 316.16- | 665.14- | 935.35- | 456.62- | 1200.83- | 1710.03- | 505.27- | 917.47- | 1339.22- | 342.94- | 779.21- | 743.26- |
| Ending | 316.16- | 665.14- | 935.35- | 456.62- | 1200.83- | 1710.03- | 505.27- | 917.47- | 1339.22- | 342.94- | 779.21- | 1194.27- | 1194.27- |
| Change | 427.10 | 348.98 | 270.21- | 935.35 | 744.21- | 509.20- | 1204.76 | 412.20- | 421.75- | 996.28 | 436.27 | 415.06- | 451.01- |
| Maximum | 316.16- | 665.14- | 0.00 | 456.62- | 1200.83- | 0.00 | 505.27- | 917.47- | 0.00 | 342.94- | 779.21- | | |
| Minimum | 743.26- | 665.14- | 935.35- | 935.35- | 1200.83- | 1710.03- | 1710.03- | 917.47- | 1339.22- | 1339.22- | 779.21- | 1194.27- | 1710.03- |
| Difference | 743.26 | 348.98 | 270.21- | 935.35 | 744.21 | 509.20 | 1710.03 | 412.20 | 421.75 | 1339.22 | 436.27 | 415.06 | 1710.03 |
| Average | 237.21- | 339.43- | 656.13- | 374.14- | 431.81- | 1200.83- | 952.17- | 491.53- | 917.47- | 568.90- | 342.94- | 765.37- | 606.50- |
| Total in | 743.26 | | | 935.35 | | | 1710.03 | | | 1339.22 | | | 4727.86 |
| Total out | 316.16 | 348.98 | 270.21- | 456.62 | 744.21 | 509.20 | 505.27 | 412.20 | 421.75 | 342.94 | 436.27 | 415.06 | 6178.87 |
| Cash flow | 427.10 | 348.98- | 270.21- | 478.73 | 744.21- | 509.20- | 1204.76 | 412.20- | 421.75- | 996.28 | 436.27- | 415.06- | 451.01- |
| Cumulative C/F | 316.16- | 665.14- | 935.35- | 456.62- | 1200.83- | 1710.03- | 505.27- | 917.47- | 1339.22- | 342.94- | 779.21- | 1194.27- | 1194.27- |

FINANCE

Whatever your business, there's a piece of software to ease the day-to-day running. From a full financial package to a single program that's dedicated to your profession, you'll find something to lighten the work load.

Minding your business

Simplex simplicity

If you use Vyners' popular **Simplex D Cashbook**, you'll be interested to know that there's a program that follows its style, though it can be used just as well with any accounting system.

Information is recorded on a day-by-day basis, with occasional more complex additions, such as VAT. The information produced by the program is accurate and ready to enter into your ledgers.

A useful feature of the program for the small trader is that cash and bank balances are displayed at all times and instantly updated, helping you keep a record of your financial situations. A fuller analysis is also available, however, including a profit and loss report.

VAT is catered for on schemes A to F plus Pharmacy Scheme B, and other schemes can be made available. The output from this section includes the VAT form box numbers, making the completion of the paperwork much simpler.

If you want to know more about the **Micro Simplex** system, a 20 minute video is available on free loan from the company. It's a clear and helpful demonstration of how easy to use this product is.

MICRO SIMPLEX

£99.95

Sandhurst Business Systems

Paying the Sandpiper

SIAS stands for **Simplified Integrated Accounting System**, which is how Sandpiper describes its integrated system. It allows speedy access of sales, purchase, cashbooks and

nominal ledgers. The advantage is that each entry needs to be made only once, and the system handles all postings.

It was also designed with the 8256 in mind, and is quite happy to run on just one disc. It includes text for forms, so that you can print out on blank paper, so avoiding the cost of special stationery, and it can handle label printing. Full instructions appear on screen, so it should keep the number of times you have to refer to the manuals to a minimum.

The nominal ledger provides management reports, with calculations, for six areas. The cash book provides a true picture of the business's financial status. The sales and purchase ledgers work closely together and along with the daybook, invoice and credit note system and VAT facility, which allows eight categories, make this a comprehensive stand-alone system.

The Sandpiper Payroll package also has a single disc approach. Once again it is easy to use, printing out on blank paper. It can cope with cash, cheques and giro payment and caters for overtime and pension calculations as well as current

tax, SSP and NI laws. P35 documents can be printed for each department and P60 forms are printed on an annual basis.

SANDPIPER ACCOUNTS

Sandpiper

£129.95/149.95 (single/dual drive)

SANDPIPER PAYROLL

Sandpiper

£69.95/79.95 (single/dual drive)

SANDPIPER COMBO PACK

Sandpiper

£179.95/199.95 (single/dual drive)

Complete accounting

Camsoft's **Integrated System** is available in several versions, and its compact size makes it suitable for the 8256. It's a versatile package which still manages to be friendly, offering detailed help at the press of a key. Input and editing make great use of the cursor arrows, to speed your way around the screens.

The units include sales, purchase and nominal ledgers, plus invoicing and stock control. Invoicing includes a daybook and profit analysis, and if you want, it can be used

independently of the other units. The three ledgers make up a consistent and powerful system, with the nominal ledger providing a monitor of the business cash flow.

The Sage **Popular Accounts** package is easy to use and uses a single program disc philosophy, with a second disc for data. It's as well suited to cash traders as it is to credit businesses.

Sales, purchase and nominal ledgers are provided, with full reporting facilities. Data posting is automatic and a full audit trail is provided. The nominal ledger offers VAT return analysis, and bank/VAT and cash reconciliations. The printed reports include sales, purchase and nominal ledger cards, plus a profit and loss account report and a balance sheet.

Sage also produces an invoicing program for businesses which have a special need for such a product. It can be used as a stand alone program, or with **Popular Accounts**. The **Popular Accounts Plus** package includes invoicing and stock control. Finally there's a **Popular Payroll** package, which is designed with the occasional user from the small company in mind. It's a comprehensive program that allows you to mix hourly, weekly and monthly pay and it can handle up to eight pay adjustments.

PAYROLL

STOCK CONTROL

INVOICING

SALES LEDGER

PURCHASE LEDGER

NOMINAL LEDGER

Camsoft

£49.95 each

SALES/PURCHASE/NOMINAL LEDGERS

Camsoft

£99.95

STOCK CONTROL/INVOICING/SALES LEDGER

Camsoft

£99.95

SALES/PURCHASE/NOMINAL LEDGERS/INVOICING/STOCK CONTROL

Camsoft

£149.95

POPULAR ACCOUNTS

Sage

99.99

POPULAR ACCOUNTS PLUS

Sage

£149.99

POPULAR INVOICING

POPULAR PAYROLL

Sage

£69.99

```
Option 6 : OPENING BALANCE ENTRIES
                BATCH TOTAL :
N/C ACCOUNT NAME          DEBIT    CREDIT
-----
0--
```

```
Option : 4 Amend Layout of Accounts Section : PROFIT & LOSS ACCOUNT
                CATEGORY HEADING          LOW    HIGH
-----
11
21
31
41
51
61
71
81
91
101
111
121
131
141
151
Press
Which entry is to be altered 0--
```

Sage Popular Accounts' screens are clear and easy to use.

Big money - compact accounts

If your business is medium sized, or you expect to expand in the near future, Compact's comprehensive accounting system, based on its highly praised PC original, has many strengths.

Though the various elements can be bought separately, a big saving can be made with the complete **Accounts** package. All output from these programs can be used with many major word processors and spreadsheets.

For the smaller business that doesn't require full ledger accounting, the **Daybook** should suffice. It allows up to 32,000 accounts and transactions in sales and purchase daybooks. It also includes a nominal ledger for financial reports, and caters for 10 VAT rates.

The next four programs make up the **Accounts** package. The **Purchase Ledger** includes batch processing for all types of transactions, including VAT payments. It caters for VAT analysis and reporting for 32,000 suppliers and transactions. The **Nominal Ledger** is equally powerful, maintaining double entry book keeping standards. It reports to trial balance and allows full journal posting.

The **Sales Ledger** is best used with the **Invoicing** package. The former maintains full details of customers, and lets you set credit limits while **Sales Invoicing** can be used as a dedicated typewriter, or it can produce product profitability reports, to help analysis of successful lines.

If you need a **Payroll** package, Compact's incorporates the latest SSP and NI requirements and can calculate hourly, weekly or monthly pay. It can cope with up to 18 allowances or deductions. The **Stock Control** program eases this worry by providing instant access to stock situations, including re-order levels and prior allocations to customers.

Compact is well supported, and stationery packs specifically designed for the programs are readily available. Readers in the Midlands area can also obtain support and training from distributors Rowtall. Telephone support is 12½ per cent of the

| | |
|----------------------|---------------|
| 18 HIGH STREET | 4 SUN |
| | 5 THE TIMES |
| | 3 TELEGRAPH |
| | 1 CAR MONTHLY |
| ----- | |
| THE GEORGE HOTEL | 3 SUN |
| | 3 THE TIMES |
| | 1 TELEGRAPH |
| ----- | |
| 1 LOWER ROAD | 1 SUN |
| ----- | |
| 149, MANEY HILL ROAD | 1 TELEGRAPH |
| ----- | |
| 160, MANEY HILL ROAD | 1 SUN |
| ----- | |

| DEBTORS NO. | 100 - 109 | 18/06/86 | A/C | PER 3 | PER 2 | PER 1 | CURRENT | TOTAL | WEEKLY |
|-------------|----------------|----------|------|-------|-------|-------|---------|--------|--------|
| 100 | SANDY MARCHANT | W | | | 4.04 | 4.04 | 1.44 | 9.52 | 3.44 |
| 101 | JOHN SMITH | M | | | 0.42 | 0.30 | 0.72 | 0.72 | 0.34 |
| 102 | BARCLAYS BANK | M | | | 35.80 | 35.80 | 12.99 | 84.59 | 23.29 |
| 103 | FRED WENDLE | M | | | | | 12.88 | 12.88 | 12.20 |
| 104 | SID JAMES | W | 3.98 | 2.45 | 2.45 | 2.00 | 10.88 | 10.88 | 1.66 |
| 105 | MR. D. MUNROE | W | 4.45 | 4.24 | 4.36 | 2.88 | 15.93 | 15.93 | 2.92 |
| 106 | Will Scarlet | M | | | 2.16 | 1.92 | 1.22 | 5.30 | 1.44 |
| | | | | | | | | 139.82 | |

Example of Debtors List

Supernews produces lists for rounds... and warns you of outstanding debts.

program price per annum, while training costs £50 a half day, on a one to one basis.

DAYBOOK

Compact
£49.45

PURCHASE LEDGER

Compact
£69.99 each

NOMINAL LEDGER

SALES LEDGER

SALES INVOICING

STOCK CONTROL

Compact
£99.99

PAYROLL

Compact
£99.99

COMPACT ACCOUNTS

Compact
£199.99

SUPPORT AND TRAINING

Rowtall Computing Ltd
£N/A

SUPPORT AND TRAINING

Rowtall Computing Ltd
£N/A

Tailored to the trade

Though a general accounting package will cope with most situations, you could find that there's a program designed specifically for your trade or profession.

As well as saving you the trouble of adapting an off-the-shelf system, it could offer facilities unavailable elsewhere. Most of these packages combine elements of databases and financial software, to help you keep a close eye on what's happening. Many of them are also designed with the computer novice in mind. But because of their specialised nature, you can end up paying as much as the PCW — or more!

The **QUAFF System** is intended for replacement window companies, providing accurately costed quotations and workshop cutting lists for PVC or aluminium fabricators. You have to enter a plan and from that full details of labour and material costs, plus cutting

lists and a customer quote are produced. There is also a sealed-unit pricing program and a window labelling utility.

A more general Job Coster is available from Quest and it can help any self-employed plumber, electrician, joiner or small contractor keep a record of material costs, wages and receipts. Each job in progress is kept as a separate file for all transactions, and suppliers are listed separately for materials, employees and subcontractors.

The amount of paperwork for newsagents is phenomenal, but **Supernews** puts most of it onto your computer. The customers list allows for holiday stoppages and special stops on the TV magazines, while a separate publications file can cope with 200 dailies, 5 evenings and 195 monthlies. Debtors and round lists can both be produced.

Another job with heavy stock problems is that of the landlord. **Bar Stock Control** is suitable for every type of licensed premises and lets you enter your own stock descriptions, case sizes, yields, cost and selling prices. Purchases and closing stock are quickly entered and provision is made for returns, allowances for credit/loans, spillages and overheads.

Taking Joyce down on the farm is now an option thanks to two companies. ANC Agricultural Software produces programs for farmers with cattle or chickens. For example, its **Egg Monitor** copes with income and grading, feed costs, consumption and mortality. Sum-It produces its **Farm Accounts** as a main module, with additional modules to cover **Dairy** and **Beef Herds**, **Pig** and **Arable Management**.

Meanwhile the motor trade can get their accounts on the road with Midas Systems. The

software requires an 8512 or equivalent, and versions are available for motor, motor cycle and caravan dealers. Stock control, vehicle pricing, quotations for both cash and finance, and sales and possible sales can be filed. The result of this accurate report on business should be better planning.

Once the car's on the road it needs petrol, and Gemini's **Garage Management** provides support for the forecourt. At its core the software suite offers sales and purchase ledgers, VAT analysis, creditors and debtors reports, credit card analysis, a banking report and cashflow analysis via a spreadsheet. Modules include a petrol subsidies report, state-of-the-company analysis, payroll and sick pay packages.

Videofile handles the stock and out-going and incoming tapes and membership of video libraries. The 8512 version can hold over 9,300 entries. Opticians could find the **Patient Recall** package from John Beavan Associates a help with appointments. It provides label printing and mailmerge.

Finally, whatever your business, **Mint Fixed Assets** lets you keep track of all your assets and their depreciation. A full audit trail of every transaction is provided.

QUAFF WINDOW REPLACEMENT SYSTEM

CJ Systems

£287.50

JOB COSTER

Quest

£99.95

SUPERNEWS

Bubble Bus

£218.50

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The Pinnacle
Harlow
Essex
CM19 5TH
0279-412441

John Beavan Associates

63 York Road
Montpelier
Bristol
BS6 5QD
0272-540024

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87 High Street
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0732-355962

CJ Systems (Software Support) Ltd

38 Hodder Drive
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Middx UB6 8LL
01-998 9257

Camssoft

Cambrian Software
Works Ltd
Unit 2, Maenofferen
Blaneau Ffestiniog
Gwynedd
0766-831878

Colleen Ltd

Colleen House
18 Bishop Street
Penygraig
Tonypany
Mid Glamorgan
CF40 1PQ
0443-435709/434846

Compact Software Ltd

1 Paper Mews
330 High Street
Dorking
Surrey RH14 1QX
0306-887373

Cornix Software Ltd

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Bridge Road
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0462-682989

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Gemini Marketing Ltd

Gemini House
Concorde Road
Dinan Way Trading
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Devon EX8 4RS
0395-265165

MAP Computer Systems Ltd

105-107 Windsor Road
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Manchester
OL8 1RP
061-624 5662

Midas Systems Ltd

Silvester House
Silvester Road
Cowplain
Hampshire PO8 8TD
0705-266941

Quest Business Software

Berryhead Road
Brixham
Devon TQ5 9AA
08045-6566

Rowtall Computing Ltd

Belsize House
1A Caldmore Road
Walsall WS1 3LX
0922-615411

SP Electronics

48 Linby Road
Hucknall, Nottingham
0602-640377

Sagesoft plc

NEI House
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Gosforth
Newcastle Upon Tyne
NE3 3DS
091-284 7077

Sandhurst Business Systems

Cheshire House
Castle Street
Macclesfield SK11 6AF
0625-615375/615000

Sandpiper Software

24 Abbot Street
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0978-358832

Saxon Computing

3 St Catherine's Drive
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0401-50697

Sum-it Computer Systems

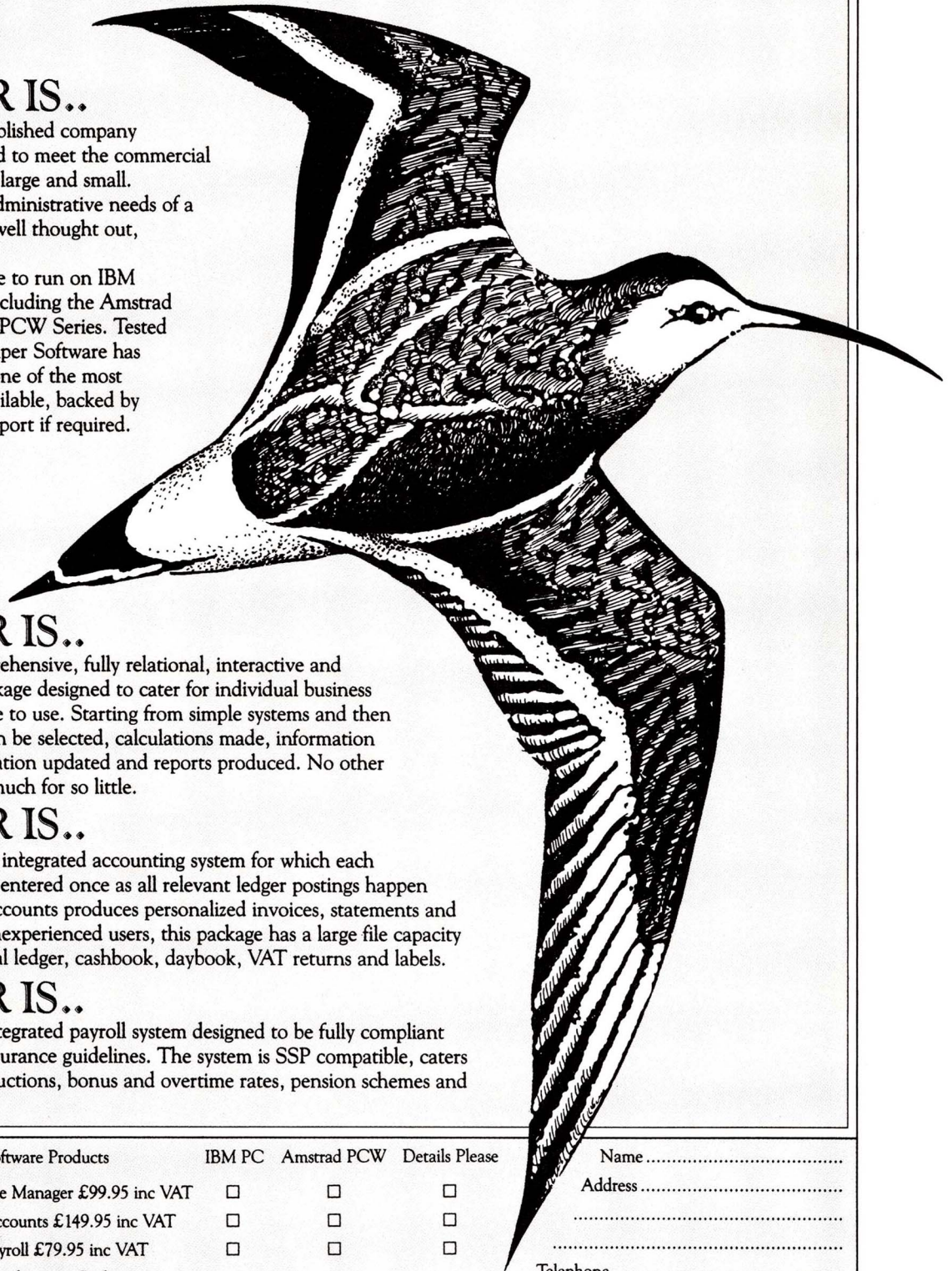
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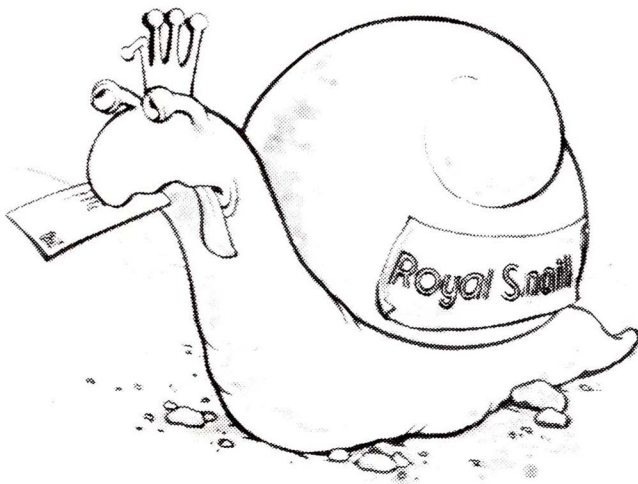
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Bridge Works, St. Whites Road, Cinderford, Glos. GL14 3HB
Telephone: 0594 22084 **Access, Visa and Amex**

KIRK

One of the most exciting aspects of business computing is the area of communications. Suddenly your PCW becomes a gateway to a wide variety of services. And all it takes is a modem, a phone line and a little software. . .

The world beyond your PCW

Connecting a micro to the telephone lines has never been easier. You just need a modem (short for modulator/demodulator) to connect the computer to a telephone socket and some driving software to make it understand the signals it will receive.

But before you get carried away with the joys of technology, stop and think. What do you want from electronic communications? Will you be using electronic mail instead of traditional postal methods? Are you going to be transmitting large amounts of data over the telephone lines? Do you plan on accessing services such as **Micronet**? Do you plan on using on-line database services?

Electronic mail is one of the most obvious attractions of communications. You can send memos, letters, even reports, to any other E-Mail user. It is many times quicker than conventional mail services, and you can send the same form letter to a large number of people simultaneously. The time of day shouldn't matter, either. Not everyone you want to communicate with via electronic mail will be capable of receiving it, but you'd be surprised how many are.

Incidentally, if you have a modem you can also use electronic telexing — which means you can send and receive telexes without all the bother of having an old fashioned telex machine.

If your company has offices in different locations, or if you do a lot of work from home, transmitting data over the telephone lines could be well worth while. You'll need two or more micros, each equipped with a modem, of course.

The advantages of sending information in this fashion are basically speed and convenience. You can transmit the equivalent of a bulky sales report in a very short time, and you can work away from the office, using the system at any time of the day or night, making use of cheap phone rates.

While certain business services are extremely costly, there are a number geared towards the individual rather than the large company. **Micronet**, **BT Gold** and similar concerns offer the advantages of electronic mail plus a whole lot more.

For a very reasonable subscription and low hourly charge, providing you avoid the peak times, you can access online magazines, news services, teleshopping (make your selection on your screen, type it

in, and pay by credit card), information libraries, and bulletin boards. On these you can contact other computer users which could be useful if you need advice on something in a hurry.

Of course, you can access the independent, amateur bulletin boards too, if you wish. These are often of a very high standard, although they won't have the resources of the commercial operations.

Finally, you can make use of commercial databases. Basically, a database is a collection of information stored on a large computer. It can be just about anything: information on stock and share prices or foreign exchange rates going back for a year; patent information; chemical abstracts; the full text of articles from news papers and magazines around the world. . . the choice is almost endless. There are literally thousands of databases available internationally.

For example, if you run a small company which exports a product, you may need information on foreign laws, tax, transport and the size of overseas markets. You can

get it all from various databases.

Most databases allow for sophisticated search and retrieval. If you input key words — 'oil', 'gold', 'Russia', for example — you could obtain all the stories on oil and gold discoveries in, or sales to, or by, Russia.

If you think you will use online communications a lot, a modem could well be a valuable asset for your business. But remember that, whatever you plan to use comms for, there may be hidden costs.

Don't forget your telephone bill, or the charge made by the information services. Some of the database services can cost £70 an hour or more, and if you're only going to use them for one or two enquiries, they may not be cost effective. Unless you plan on using them a fair amount, it could prove cheaper to choose more traditional methods.

However, if you plan your communications wisely and don't get carried away with such an exciting part of the new technology, you will be able to benefit from the biggest revolution in the exchange of information since the invention of the printing press.

The jargon of Communications

Computing has a reputation for jargon, and it's never more dense than in the field of communications. Here's brief round up of some of the more common terms.

ASCII American Standard Code for Information Interchange All printable characters are given a value in hexadecimal between 20 and 126.

Baud Data transfer, measured in bits per second.

Bulletin Board Like a board on which you pin notices, a bulletin board lets you display messages. Many are privately run by enthusiasts.

Columns How many on-screen columns can be used for text or block graphics. Standards are 80, or 40 on home computers.

Carrier A tone produced by the modem to inform the receiving computer that data is being transferred.

Download To save information or a program from a board into your computer.

Hacker Hackers use their deductive and programming skills to enter parts of systems or other on-line computer services. Despite certain well publicised cases, security is not a major problem at the moment, though all users should be careful to guard their passwords.

Log On To access a communications system.

Privilege Not every user will be allowed into every area of a comms system. Access may be limited for a number of reasons.

Smart Used of a modem, it means that it can provide certain useful facilities that a manual one wouldn't.

Sysop A SYSTEMS OPERATOR, responsible for running a system.

COMMUNICATIONS

Even when you've made all the connections between modem, micro and phone socket, you need software to tell your PCW what to do . . . and it can make for trouble-free communications.

Talking softly

While **Chit-Chat** is almost certainly the friendliest piece of communications software available, there are alternatives, which cater for different needs.

Comm+, bundled with several modems, is a comprehensive system, though it requires a lot of work before you can actually use it. Rather than putting you directly in command, it's a communications program generator. It's equally suited to direct or modem-linked communications.

NewComm **C-STAM** is aimed at inter-computer links, letting you send files between PCWs or to IBM PCs and compatibles.

Also from NewComm, **DataMail** is a low price Viewdata and E-Mail package. Its E-Mail facilities support One-to-One and Telecom Gold, among others, and it can store Prestel frames.

Finally, don't forget the public domain software, available from libraries, such as the one run by the CP/M Users Group. Of these, **Modem 7** is held in high regard, and though it lacks many of the flashier features, such as an auto dial directory, it can do the job for the price of a disc.

Comm+
£86.25
Margolis & Co
Newcomm C-Stam/Datamail
£44.00/£39.95
Newstar
Modem 7
CP/M Users Group

Contacts

CP/M Users Group (UK)
72 Mill Road
Hawley, Dartford, Kent
Margolis & Co
105 Foundling Court
Marchmont Street
London WC1N 1AN
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200 North Service Road
Brentwood, Essex CM14 4SG
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Regent Centre, Gosforth
Newcastle upon Tyne NE3 3DS
091-284 7077

Chatting with Chit-Chat

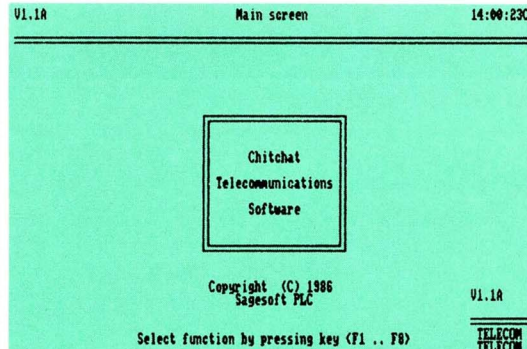
Chit-Chat is generally reckoned to be the Rolls Royce of Amstrad communications software. It's easy to use and provides a host of labour saving facilities, but you pay for the power.

Chit-Chat comes in three versions, one to handle E-Mail,

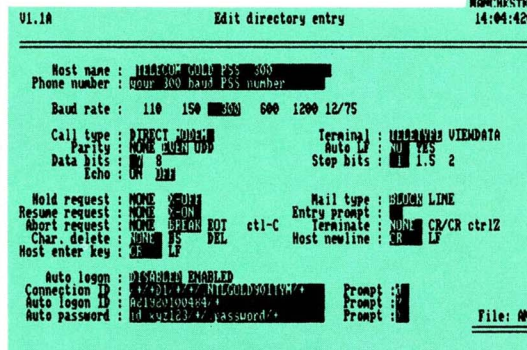
one to access Viewdata services, and **Combo**, which contains all the facilities on one disc. This is the version reviewed here. It's also available complete with a basic modem, the **Pace Nightingale**.

Providing you follow the instructions carefully, you'll

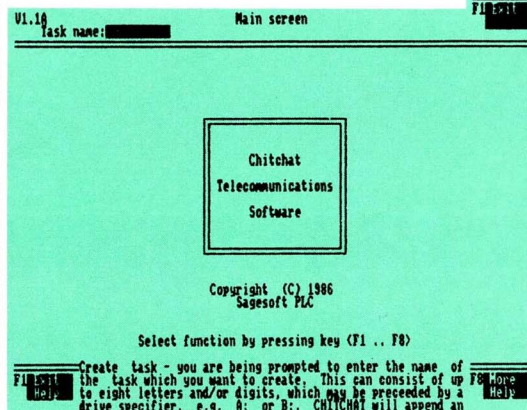
have no trouble creating a working copy, though 8256 owners have to swap discs rather a lot. You are then asked to enter your name and address, which not only personalises your copy but also discourages illegal duplication.



With room for 24 entries in its directory, **Chit-Chat** should be able to cope with all of your comms numbers. If you have a manual modem you'll still have to dial the number yourself, but auto-dial hardware even takes over that stage of logging on. You just select the system required with the cursor bar, then press [F4], **Connect to Host**, and away you go.



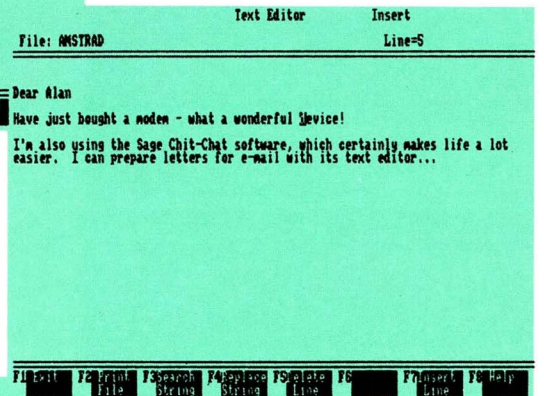
Typing in a message while actually on-line is time consuming, costly and prone to error. Use the **Text Editor** to create your message before you even dial up an E-Mail service. The editing facilities are rather basic, and it doesn't feature word wrap, so you have to end each line with Return, but it will easily do for short files. Otherwise you can use a word processor with ASCII output. The equivalent facility for reading files gives you the chance to store frames, to study at your leisure.



One of **Chit-Chat**'s most appealing features is its use of function keys tied to menus, which appear at the bottom of the screen. Certain functions remain constant, such as **Help** on [F8], and [F1] is always the way out of a situation. The opening screen is the route to all of the program's facilities. Note the clock at the top right hand corner of the screen. This lets you send messages even when you're away from the keyboard, provided you set it at the start of a session. But remember to leave your PCW on.



Chit-Chat provides more than auto-dialling. Edit the directory to contain your ID number and Password, and it will communicate this information to the host computer without you having to lift a finger. But a word of warning; guard your **Chit-Chat** disc carefully, or you could find unauthorised users accessing services at your expense.



The **Task** facility allows you to use **Chit-Chat** to send a file, prepared with the editor, when you are away from the terminal. This is useful if you want to send a batch of E-Mail when phone charges are cheap. You can also save frames this way. Note the **Help** message at the bottom of the screen, called up with [F8].

FACTS BOX

TITLE
Chit-Chat E-Mail/Viewdata/Combo/ Communications Pack

PRICE
£69.99/£69.99/£99.99/£199.99

PUBLISHER
Sage

You need a modem for almost every type of computer communication, but be prepared to pay anything from £100 to over £700, depending on the features you require.

Making sense of modems

The only time that you can link two computers directly is when they are of the same type and within very close range — the same room or adjacent offices. Even then you'll need an RS232 serial interface and cables, as well as software to control the transmissions and reception.

Though it may not sound very ambitious,

this low level of communication still has its uses, if you are constantly exchanging information between two PCs. However communication really comes into its own when you start to use the telephone lines to access other computers, be they micros or mainframes.

For this you'll need a modem, and though a

few use acoustic coupling, so that the telephone handset sits in two rubber cups, most plug directly into a phone socket.

The acoustic variety can be used with old fashioned phones that are wired into a junction box, but this is really only of relevance if you'll be using your PCW away from your office a lot. Their great failing is that they're susceptible to extraneous noise, which corrupts the data as it's transmitted as a series of high-pitched tones.

We've considered interfaces in our Hardware section, so here we'll take a look at the modems themselves, along with the features that can make them cost almost twice the price of the micro itself.

Choosing a modem

The more you pay for a modem, the more you get. These are the major features to look out for . . .

Protocols: Successful communications depend on certain standards, which are indicated by a V number. The main variable is the rates of data transfer, measured in characters per second, or bauds. Not all systems use the same rates. V21 is 300 baud; V22 is 1200 baud, full duplex; V22bis is 2400 baud; V23 is 1200/75 baud. Which rates you require depends on which services you intend to access, but on the whole V21, which is used by most electronic mail services and V23, used by **Prestel**, will be enough. However, if you wish to access services in the USA, V22 can also be useful. The V standard also refers to the tones used for transmission.

Auto Dial: This lets you send a number from the computer and dials it automatically. If it isn't connected within a specified time it will then ring off again. It can save a lot of time. Modems which include external speaker can use this feature to provide auto-dialling of normal phone calls.

Auto Answer: The modem detects incoming calls and answers them without the need for an operator.

Auto Baud Select: The modem is able to detect the baud rate when it is transmitting and receiving, and switches to that rate automatically. However it won't be able to switch to a rate that it doesn't feature.

Directory: A directory to store commonly used numbers, passwords, and so on.

BABT Approval: Any equipment which is directly connected to the telephone system must carry British Telecom's approval. Unluckily there has been a backlog of products awaiting the green seal, which means that it is technically illegal to use them.

Hayes Compatibility: Hayes Protocol is named after an American modem, and indicates a fully automated product, so that all controls can be sent from the computer, without the need to alter buttons on the modem itself.

Other Features: Top of the range modes often include features such as a timer, which lets your PCW transmit a prepared file at a specified time, even if you're away from your workstation; carrier strength indicators, to warn of bad transmissions; and monitors, to provide audio confirmation of signals.

| PRODUCT | PRICE | PROTOCOLS | AUTO DIAL | AUTO ANS | AUTO BAUD DIR. | BABT APPR. NOTES |
|---|----------------|--|-----------|----------|----------------|--|
| AMSTRAD PO Box 462, Brentwood, Essex CM14 4EE 0277-230222 | | | | | | |
| Amstrad | £99.95 | V21; V23 | | | | ● Badged Pace Nightingale, but includes software. Free first quarter Micronet sub. |
| KDS 15 Hill Street, Hunstanton, Norfolk PE36 5BS 04853-2076 | | | | | | |
| Chatterbox | +VAT £150 | V21; V23 | ● | ● | ● | Single unit; includes RS232 and Centronics interfaces. |
| MIRACLE TECHNOLOGY St Peters Street, Ipswich IP1 1XB 0473-216141 | | | | | | |
| WS2000 | £125 +VAT | V21; V23 | | | | ● Basic home model. |
| WS3000 V21/V23 | £295 +VAT | V21; V23 | ● | ● | ● | ● Hayes compatible; full feature, including audio monitor, etc. |
| WS3000 V22 | £495 +VAT | V21; V23; V22 | ● | ● | ● | ● |
| WS3000 V22bis | £650 +VAT | V21; V23; V22; V22bis | ● | ● | ● | ● |
| WS4000 | £150 +VAT | V21; V23 | ● | ● | ● | ● Hayes compatible |
| WS4000 V22bis | £400 +VAT | V21; V23; V22 | ● | ● | ● | ● |
| WS400 V22bis | £555 +VAT | V21; V23; V22; V22bis | ● | ● | ● | ● |
| MODEM HOUSE 70 Longbrook Street, Exeter, Devon EX4 6AP 0392-213355 | | | | | | |
| Voyager 11 | £99.95 +VAT | V21; V23; 1200/1200 half duplex | ● | ● | ● | ● Comm+ software included; reverse Prestel to host comms. |
| PACE Juniper View, Allerton Road, Bradford BD15 7AG 0274-488211 | | | | | | |
| Nightingale | £99 +VAT | V21; V23 | | | | ● Available bundled with Sage Chit-Chat Combo. |
| Series IV 2123 | £265 +VAT | V21; V23 | ● | ● | ● | ● Fully Hayes compatible; timer; monitor; carrier strength and detect line. |
| Series IV 2123 | £265 +VAT | V21; V23 | ● | ● | ● | ● |
| Series IV 22 | £479 +VAT | V21; V23; V22 | ● | ● | ● | ● |
| Series IV 22b | £619 +VAT | V21; V23; V22bis | ● | ● | ● | ● |
| ROBERT EDWARDS 236 North Road, Hertford SG14 2PW 0992-54118 | | | | | | |
| Commtel-X | £199 +VAT | V21; V23; 1200/1200 half-duplex. | ● | ● | ● | ● Comm+ software, interface and leads included. |
| TANDATA Albert Road North, Malvern, Worcs WR14 2TL 06845-68421 | | | | | | |
| TM 110 | £99 +VAT | V23 | ● | | ● | ● |
| TM 512 | £255 +VAT | V21; V23 | ● | ● | ● | ● Hayes compatible. |

COMMUNICATIONS

The range of services available from electronic communications is growing every day. We look at one of the largest systems, as well as surveying what else is on offer.

Information at your fingertips

Getting onto Micronet

Micronet is one of the oldest communications networks, and one of the most comprehensive. It's a closed corner of **Prestel**, but a subscription to **Micronet** also gives you access to **Prestel's** wide range of business and communication facilities.

Not that **Micronet** is the only system you'll ever need. Many of its services will be totally irrelevant if you only want E-Mail, for instance. But many people want a mixture of business and leisure activities from communications, and it is here that **Micronet** comes into its own.

Logging on to **Micronet** is similar to any board. You ring your local computer number and when you hear the tone, hand over control to the PCW. Once the connection is made, your user number is requested, followed by a private password, to ensure that nobody else logs on at your expense.

After that you're free to roam **Micronet's** pages. Paths through the sections are indicated on screen, so you can take a slow and simple route, or if you know the page number of the section that you want, you can move straight to it.

The only time you'll find your way barred is when you reach a CUG, or Closed User Group. There are a number of these, catering for specialist interests, but a small fee gains access.

Small businesses will find a variety of useful services ready and waiting. **Biznet** provides everything from a letters column, to advice on starting and running a business, and even provides legal aid. You send your question down line, and expert advice soon appears on screen.

A recent development on **Biznet** is computerised accounting. Payments and receipts can be sent to MAS Accountants, an independent firm founded in 1964, and books will then be prepared and returned through the post, at a considerable saving on the normal charges.

If you have specific business computing queries, computer consultants **Interlex**

offers support on two levels. Queries sent to their mail box will be answered on the open lines, or for a fee of £25 per annum, they provide a personal service between 9am and 9pm daily.

Micronet also caters for comm-

unications. **Prestel** allows you to send telexes anywhere in the world without a telex machine. Cost are low, from 50p a frame of approximately 100 words for the UK, to £5 a frame for maritime communications. Incoming telexes, to your personal mailbox, are free.

Mailboxing (or MBX-ing in communications slang) is another valuable facility, provided the person you are contacting is also a **Micronet/Prestel** subscriber. However, this is one area where you'll have to look at your contacts, to see which systems they subscribe too.

Communications also make up an important part of **Micronet's** leisure appeal. It's quite easy to spend an evening in electronic conversation, with people from all over the country, on the open chatlines. If you want to talk about a specific subject there are several specialist lines too.

Along with multi-user games, an up-to-the-minute news service, features sections and specialist micro sections, **Micronet** has something to interest almost everyone. And if you're worried about cost, don't be! Providing you ring out of peak hours, avoiding **Prestel's** business user charges, most areas are free.

Communications costs

Costs vary greatly, for registering with a service and using its facilities. Several services offer individual registration and more expensive corporate rates. With **Prestel** and **Telecom Gold**, it is cheaper to subscribe through **Micronet** and **Microlink**, though to benefit fully from the reduced rates, you'll have to use them out of peak hours.

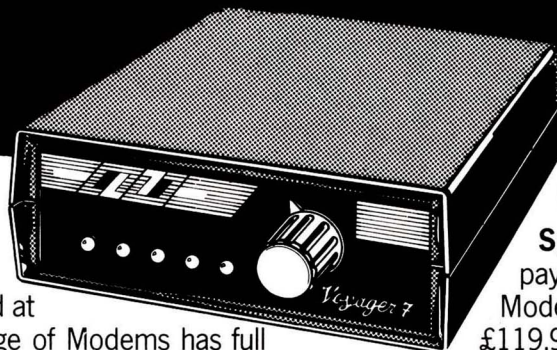
Once you are registered, the costs of services, such as sending a telex or hiring a mailbox, are also very different. You may also find yourself facing a minimum monthly invoice. **Micronet** is currently the cheapest service, with low subscriptions, no minimum charge, free mailbox rental with unlimited free messages, and no connection charge, off-peak. But the situation can change in this highly competitive growth market, so check for current details.

If this still seems expensive, the good news is that by using British Telecom's Packet Switch Stream (PSS) system, however far you live from the host computer, you pay only local call rates, not long distance. This also works for overseas communications. Full details are available from British Telecom.

Surveying the services

| Service/contact | E-mail | Telex | Notice board | Radio paging | Database | Notes |
|-----------------------------|--------|-------|--------------|--------------|----------|---|
| Comet 0527-64274 | ● | ● | | | | Telemessages |
| Easylink 01-633 9577 | ● | ● | | | | Dial-a-gram; translation |
| Microlink 061-456 8383 | ● | ● | ● | ● | ● | Part of Telecom Gold. Translations; teleshopping; leisure; chatlines; CUGs. |
| Micronet 01-278 3143 | ● | ● | ● | | ● | Part of Prestel. Wide range of interactive business and leisure services. |
| One-to-one 01-351 2468 | ● | ● | ● | ● | ● | London only courier service; distribution lists for mass circulars; noticeboard has free advertising. |
| Prestel Freefone 2296 | ● | ● | ● | | ● | Major business service; comprehensive data services plus electronic purchase of tickets, etc. |
| Telecom Gold 01-403 6777 | ● | ● | ● | ● | ● | Powerful database; easy and cheap direct access to US MBXs; message storage and remote sending. |

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AA/9/86

GRAPHICS

It is said that a picture's worth a thousand words. Fortunately, the PCW's high resolution graphics are well suited to illustration. . . and you don't even need much art experience!

Picture this

Computer graphics are much in demand today. Whether you're producing a cover for a report, a graph to illustrate it, a technical design or a sketch, your Amstrad can turn you into an artist.

Just as a word processor takes the pain out of writing, a drawing package allows you to alter illustrations time and time again without tearing the paper or smudging the ink. The inexpert draughtsman can also produce lines and regular shapes without having to worry about keeping angles true.

There are two main and very different approaches to computer graphics. One is purely software based, while the other uses hardware to help you in the act of drawing. We've taken an in-depth look at each method.

Representing Figures

A graph is often the best way of presenting complex data, so why not exploit your Amstrad's graphic capabilities?

Polyplot is part of the **Polyprograms** suite reviewed in the Word Processing section. It can create bar, line and pie charts and four sets of data may be placed on the same axes, with up to 20 points for each set. Data is manually entered but results are portable to the other Polyprograms.

DR Graph is companion piece to **DR Draw** and features that program's friendliness. Line, bar, bar and line, pie and

DR Draw

The box of **DR Draw** boasts that it's 'From Digital Research, The Creators of CP/M'. With a pedigree like that you'd expect something special. And you get it.

The package is totally software driven and specially geared to producing regular geometric shapes, straight lines and arcs, making it most suitable for planning and design applications. This program can produce anything from a cover for a report to a ground plan.

In keeping with this design philosophy **DR Draw** treats each element of a picture as an

overlay with the most recent element clearly indicated. This allows you to manipulate the chosen portion, usually the most recent addition, in a variety of sophisticated ways. You can move it, copy it to any position, or even alter details.

Correcting errors is also simple. The Delete option removes the selected element, while Undelete replaces it, so it's easy to experiment by adding and removing details. Printing out your picture, which can be saved on disc for further work at a later date, also provides a variety of options and printing formats.

Despite this versatility, the program is easy to use. It's controlled via a series of menus

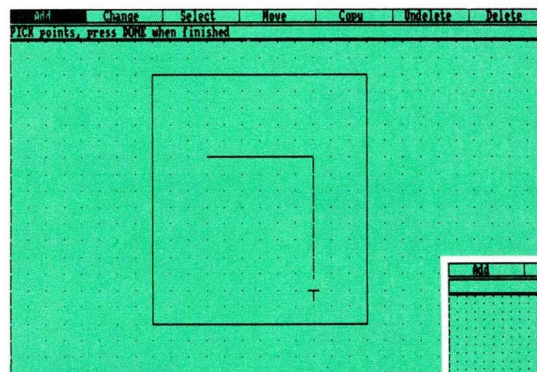
and sub-menus which appear at the top of the screen. The manual is also a model of clarity, taking you step by step through various projects. Even installing **DR Draw** is easy, though the program's size means that 8256 owners will spend a lot of time swapping discs.

DR Draw is friendly to use and turns graphic design into a joy rather than another time-consuming chore.

FACTS BOX

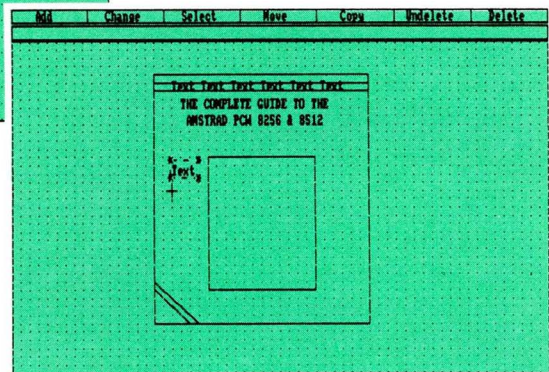
TITLE
DR DRAW
PRICE
£49.95
PUBLISHER
Digital Research

Creating a cover with DR Draw

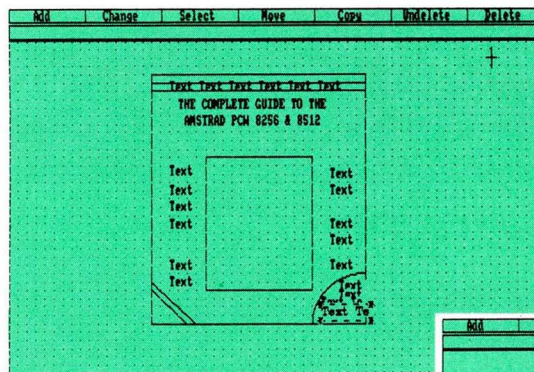


Choosing the Add option leads to a sub-menu, from which we have selected Line. Start and finish points are chosen with the space bar, and the Return key completes an element, calling up the main menu. Here the cursor, towards the bottom of the frame, is pulling down a line to draw the internal cover box.

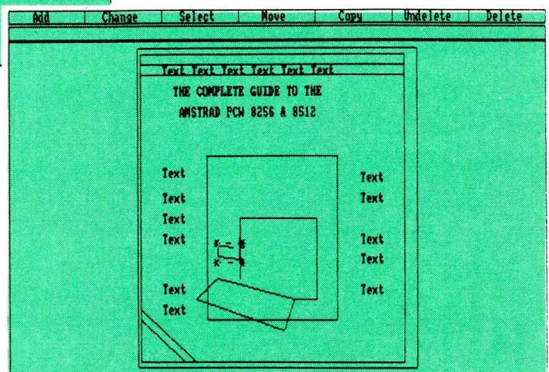
The grid of dots serves as a guide for the cursor, which snaps to the nearest one when 'Space' is pressed. The dots' density can be doubled for more accurate positioning, or you can switch them off with the Change menu. Space will then fix a line at the exact position of the cursor. The dotted line surrounding the word, which has been typed in with the Text option, indicates that this is the most recent addition to the picture.



DR Draw's Copy feature allows you to reproduce the item indicated by the dotted line, saving repetitious typing. Select allows you to choose items other than the most recent element. In the bottom right hand corner of the cover we have drawn an arc, which has been filled with text. Using the Change option the typeface has been altered.



Almost complete. The corner section has been deleted, and the design redrawn to fill in lines which were erased by its removal. To facilitate work on the central box the picture has been zoomed to fill the frame. Removing the grid gives you an idea of what the final design will look like, and a frame has been added to show how it will print out on a page.



text-only graphs are available, and embellishments include fill patterns and exploded 'slices' of pie graphs. Data can be imported from most major spreadsheets, and up to four graphs can be placed on one page.

POLYPLOT

£24.95
Newstar

DR GRAPH

£49.95
Digital Research

Peripheral Possibilities

If the idea of drawing on your screen doesn't appeal, there are two major alternatives. A digitiser tablet lets you work on a sheet of 'electronic paper', often covered with an overlay, dedicated to the task in hand. A mouse is a small box that you move around your desk top to control the on-screen cursor. Although Advanced Memory Systems' mouse was not available at the time of review, it should be included in the Up Date section.

Grafpad 3 is an A4 digitiser tablet, coupled to a Computer Aided Design program, which is totally menu driven. There are all the line and shape drawing routines that you'd expect of such a package, and facilities like zoom, pan, tilt and layering. The use of the pad for menus leaves the screen free for drawing.

GRAFPAD 3

£149.50
Grafsales

Contacts

Digital Research (UK) Ltd
Oxford House
Oxford Street
Newbury
Berks RG13 1JB
0635-35304

The Electric Studio Products Ltd
13 The Business Centre
Avenue One
Letchworth Garden City
Herts SG6 2HB
0462-895720

Grafsales Limited
Unit Q2, Penfold Works
Imperial Way, Watford
Herts WD2 4YY
0923-43942

NewStar Software Ltd
200 North Service Road
Brentwood, Essex CM14 4SG
0277-220573/213218

Light pen

The main problem of using the arrow keys to control a drawing cursor is that they make freehand sketching extremely difficult. A light pen is a natural alternative, letting you work directly on the screen.

The **Electric Studio's** pen, which is about the size of a standard fibre tip, comes complete with an interface which plugs into the rear extension port. You load up the driving software, and you're ready to run. This is another menu driven program, but you use the pen to pick options not the keys.

Drawing on a vertical screen is not quite as easy as on paper, particularly since you don't

actually bring the pen into contact with the curved glass, and the slightest shake is magnified.

To overcome this problem the package provides you with options to draw regular shapes. You're advised to think carefully about what the finished picture will look like, so that you can plan in advance, first laying down the basic shapes then using the Fill, Brush and Spray commands to add shading and texture.

Erasing errors with the Light Pen is similar to erasing pencil lines. You set the Ink Colour so that it will reverse the pixels (the minute dots that make up the picture), turning them green. And if you want to draw on a dark area you'll have to reverse the picture's tones, so that the pen can read the screen.

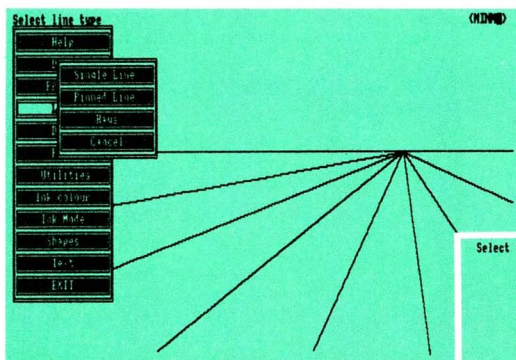
Saving and Printing pictures is easy, and a useful feature is a GSX operating system driver. GSX does for graphics what CP/M does for business software; a program saved in this format could be transferred to another GSX program, such as **DR Draw**, for further embellishment.

Light Pen will take a little while to master but once you know its quirks it's a lot of fun and it brings a good range of computer graphic techniques to the Amstrad user.

FACTS BOX

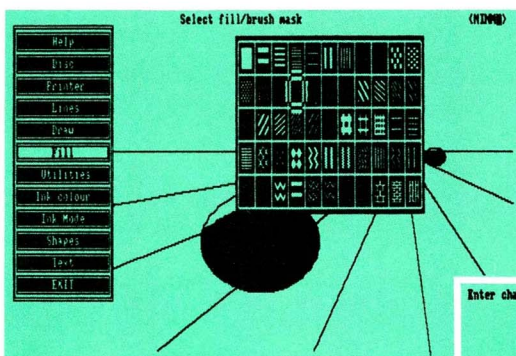
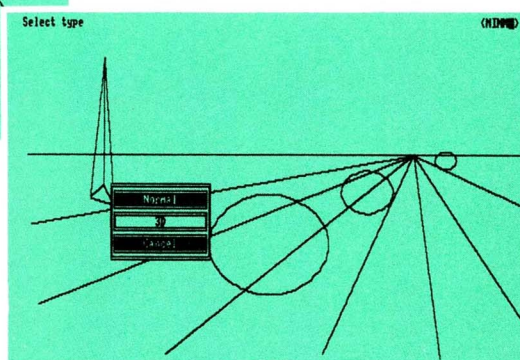
TITLE
LIGHT PEN
PRICE
£79.95
PUBLISHER
The Electric Studio

Light on the Light Pen



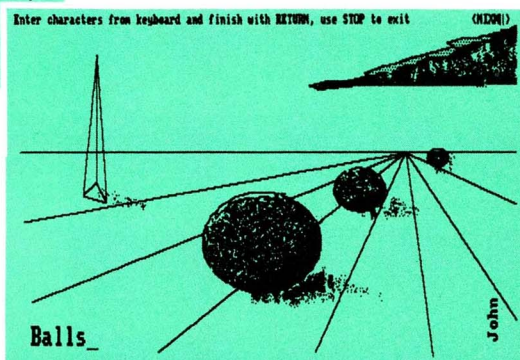
Light Pen works with menus and sub-menus. Line leads to several further choices. Single Line has been used to produce the horizon, and then the perspective effect was produced with Rays, which fixes a point on the horizon and pulls out lines from it. Note the prompts, which appear above the main menu, and the small Ink Status indicator, top right.

It is easier to produce shapes with the relevant option, rather than drawing freehand. Here the landscape has been elaborated using the Shapes menu. The top circle is the standard size, but diameters are easily altered before they are fixed in place. The pyramid was added with the Triangle option, which gives you the option of creating 3D shapes, as does Rectangle. Once the two dimensional points are fixed you create the illusion of depth.



The Fill option has been used to add shading to the spheres. First rough boundaries were created with Draw, to divide them into thirds. Pressing T on the keyboard calls up the Texture menu, with its 55 patterns. These can be used to Fill any enclosed shape, or with Brush drawing. A small patch of the chosen pattern appears at the right of the Ink Status indicator.

Almost ready to print. Texture was added to the balls by using the pen with the Ink Mode changed so that bright pixels became dark as it scribbled over them. The shadows were created with the Spray option, using a narrow nozzle effect. The cloud was Drawn freehand and shaded with Fill and then textured. Text can be added in a variety of sizes and directions.



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| 05 Orders/Delivery Notes | 15 Stocktaking |
| 06 Invoices | 16 End of Quarter/Year |
| 07 Credit Notes | 17 Purchase/Sales Ledger |
| 08 Payments | 18 Aged Creditors/Debtors |
| 09 System Parameters | 19 System Maintenance |
| 10 Bank Transactions | 00 Exit to System |

System Password: ★★★★★★ Option: 17
System Date: 26/05/86 Password: ★★★★★★

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Is there a program that will . . . ? Whatever special application you can think of, chances are that somebody has thought of it before you. Here we review some of those products that don't easily fit in to any particular pigeon hole.

Odd Jobs

Fleet Street on your desk

If you've ever had to stick down text for printing, you'll know that laying out a page is every bit as difficult as writing the copy in the first place.

Balancing the length of a piece with the size of type, which is often restricted, particularly if you had to produce it on a typewriter, is a difficult task.

Desk top publishing is a recent software development, and it's one of the most exciting. It could most accurately be described as page processing. The raw copy is just the first step in a chain that eventually produces a finished layout, complete with diagrams, illustrations, or spaces to insert photographs.

Mirrorsoft's **Fleet Street Publisher** was still in prototype form when we looked at it, but its specifications make the first desk top publishing program for the PCW a powerful tool.

The secret of that power is its ability to handle large amounts of data, and to store it, whatever state it's in, while you work on another part of the publication. These are complex enough procedures, so the package must be easy to use, and has to supply information on the flow of articles whenever you need it.

Fleet Street Publisher opts for a WIMP-style environment; the acronym stands for Windows, Icons, Mouse and Pointer. An operating system based on this design lets you select commands with an on-screen cursor. Though the PCW doesn't come with a mouse, a couple are available, and the program is compatible with these, or Electric Studio's Light Pen.

The other important area for a desk top editor is how to produce graphics. **Fleet Street Publisher** is compatible with output from most graphics packages. Mirrorsoft also produces its own, stand alone **Graphics Operating System**, and illustrations from this can be dumped into your pages. If your graphics needs are less

ambitious, **Fleet Street Publisher** comes complete with a 'photo-library' of drawings to use.

The starting point for any publication is collecting the individual articles. These are held in initial draft form, ready for editing and then layout.

Meanwhile the pages themselves have to be designed. You have full control over the number of columns and their width; whether text will be justified; where illustrations will go; and where there will be

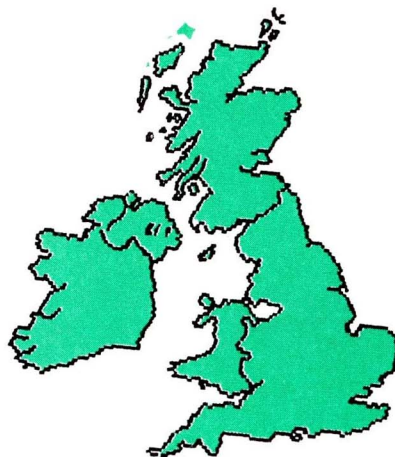
Fleet Street Publisher includes a basic text editor, although written files can be imported from other word processors, including Locoscript. Once they've been sub-edited, you can manipulate the size and style of fonts, enabling you to produce bold headlines and attractive body copy.

Prepare your text with any word processor, whether it's Locoscript or a CP/M system. Mirrorsoft's **Fleet Street Publisher** includes a text editor, which includes word wrap; deletion; slow fast cursor movement; insert and overwrite text; mark block; move block; copy block; relay block; delete block; call the directory mode; enter the layout mode; save and exit to the publication menu; save and return; exit without saving; and save a block.

Copy can be placed in a queue, waiting for you to work on it, and a full or brief status report will be available. If you choose a full report you will have the option of entering some identifying text.

Text can be justified or left aligned, or set to produce a ragged right margin.

The Fleet Street Publisher Photo Library includes a selection of decorative effects, such as borders, letters and punctuation marks, to embellish pages. There are also icons, which can be used to identify articles, and maps, for illustrative purposes.



horizontal rules. Stories are then placed in the page framework, and naturally you can experiment with them until they fit properly.

Finally the pages are sent to the PCW printer, and Mirrorsoft is aiming for better quality than is available from **Locoscript**. You can then take your publication to your local print shop, safe in the knowledge that it's free of inky fingerprints and that no lines of text have come unstuck.

There are literally dozens of

applications for a package like this, from company or society magazines to advertisements or attractively presented reports. It may take some careful planning to use well, but it's also fun, and, after all. . . even Robert Maxwell had to start somewhere.

FACTS BOX

| | |
|-----------|-------------------------------|
| TITLE | Fleet Street Publisher |
| PRICE | £TBA |
| PUBLISHER | Mirrorsoft |



Next you need to produce your illustrations. The Harrier has been drawn with Mirrorsoft's own Graphics Operating System, which uses a drop down menu system to provide powerful creative potential. It supports a full range of set shapes and free hand drawing, plus shape fills. In addition you can define windows around picture elements, then manipulate them.



Once elements are prepared they can be placed on the page. There's a wide range of intelligent text controls available. For instance, copy will run on, automatically adjusting its width, but stopping once it hits a horizontal rule, and continuing in the next column. Meanwhile pictures are scaled and dropped into place.

The electronic diary

The idea of an electronic diary may seem attractive, but it's also impractical. You can hardly carry your Amstrad around.

But **Time Organizer** is a useful way of arranging appointments and recording anniversaries. Used with print out paper designed for a loose leaf diary binder, available from Filofax, it could be worth its bargain price.

This menu driven program allows you to store 2,920 events, covering a year, on one disc. These are in the form of date, time, and events. You can produce monthly or weekly summaries, use a search facility to cross-reference specific occurrences over a length of time or produce an automatic reminder.

All in all, **Time Organizer's** usefulness rather depends on whether you're willing to load it up whenever you need to consult it.

Time Organizer

£12.95

£20.00 (with Amsac Accounts)

CJF Lowe

Projects – from A to Z

Project planning is an exact science. The ability to follow a job from start to finish, planning the details of each stage and allowing for any unforeseen occurrences as you go, is a invaluable one for every businessman.

Your PCW can help if you have to break down a major project into a series of stages. Starting from the most general level, such as publishing a magazine, you then subdivide the task into its constituent parts, such as researching articles, writing them, selling advertising and arranging distribution. Some of these will have to be completed by a certain stage of the project, while others are continuous for the whole period.

Now things really get interesting. What happens to the completion date if you employ another person? What if you do it all yourself? And when things start to go wrong, how do they affect the schedule? Only by forward planning can you cater for all contingencies.

Pertmaster is a highly sophisticated project manager, taking its name from Performance Evaluation and Review Technique. It's particularly strong in the field of report generation, providing options for tables, bar charts, pie graphs and histograms. This is an important facility when complex information has to be conveyed with maximum clarity.

You tell the computer what the different activities involved in the project are, their order, how long they should take and what resources are called for.

Pertmaster then produces a master plan, with start and finish dates. It also tries to identify possible problems during the period. Once the project is underway you can update the information and **Pertmaster** will adjust its plan according to circumstances.

Comshare's **Target Task**, imported by NewStar, is for double disc systems. It allows you to balance time saved against any extra costs incurred. A project plan is produced, and PERT methods allow on-going review techniques. The program can also produce Gantt chart plots in a calendar format.

Pertmaster

£69.95

Abtex

Target Task

£99.99

New Star

Ideas in action

It's said that genius is 3 percent inspiration and 97 percent perspiration. If so, much of that 97 percent is spent sweating out the initial idea and turning it into a cogent form.

Many people who use **Brainstorm** are near evangelical in their enthusiasm for the way it helps organise thoughts.

Brainstorm is, quite simply, an ideas processor.

Not that it'll turn you into an Einstein overnight. What it will do is force you to think more clearly and efficiently. It does this by ordering your ideas, which you type in as they come to you. It then cross references them, and finally produces a written report, providing a structured overview of your ideas.

The uses to which **Brainstorm** can be put are almost limitless. The most obvious is planning a project, though this is a wide enough field in itself. Whether

you're planning a marketing campaign or writing a novel, **Brainstorm** can cope.

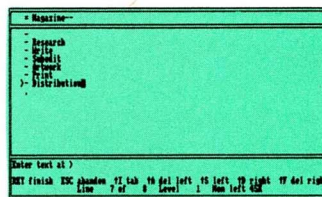
Computer programmers should find its text editor useful too. You could enter the structure of a program, without attempting to write any code until you had each unit well-planned, then produce a disc copy of the file which omitted all the development remarks, all ready to be compiled.

It's hard to think of a situation in which **Brainstorm** does not have its uses. And there can be few things more satisfying than seeing a succession of apparently diffuse ideas falling into place.

Brainstorm

£49.95

Caxton



Brainstorm's key controls are easy to learn and experimentation shouldn't cause problems.

Showing off with Amstrad

The most obvious user of a display system is a retailer. However, all sorts of information can be conveyed in many different situations, using this novel package.

There are two types of presentation available with **Interactive Display System**. The first is fully automatic, so that screens change at regular intervals, which are set by you. This could be used for advertising in a shop window, for example.

Interactive presentations call upon the user to take some action, such as answering a question or selecting an option from a menu. A complex path can be selected through a series of screens. This could be used in a teaching situation, or to provide particular information.

At the heart of **IDS** is a screen designer, which is similar to a word processor in its control style. It allows for normal and large text, lines, boxes and areas of reverse video. The interactive system lets you construct the various paths through the options.

If you need displays of this sort, **IDS** is a clever, economically priced

package. . . providing you can afford to tie up your Joyce for hours at a time!

Interactive Display System

£34.95

CJF Lowe

In the stars

Do you read your horoscope in the daily newspaper? There's more to serious astrology than just the sun signs. Whether you believe that our fates lie in the stars is a matter of personal opinion, but students of astrology take hours to draw up a birth chart.

The alternative to piles of books and hours of calculation is to use your computer to plot the positions of the heavenly bodies at a particular time. What could take a couple of hours with an ephemeris can be reduced to two minutes of computer time. Then the Amstrad can print out the chart. After that the analysis is up to you.

Astrocalc has a long tradition of producing serious astrological software, and if you want an introduction to this fascinating art, then their starter pack provides all the basic information that you need to construct a simple chart.

Astrology Starter Pack

£15.50

Astrocalc

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Bradford BD7 1HR
0274-734838

Astrocalc

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0442-51809

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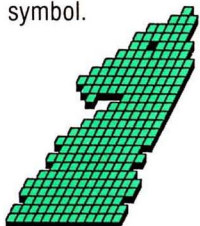
* Delete one

Though Amstrad never intended the PCWs to be games machines, software companies are busy proving that there's more to your Joyce than word processing.

Playing with the PCW

Whether you prefer a quiet evening's chess or ten minutes during your lunch hour blasting **Space Invaders**, there's a program to meet your needs.

We've divided the games into three main types — strategy, adventure, arcade — and we've identified them each with a little symbol.



Strategy games suit the more thoughtful player who prefers abstract problems. The classic board game, chess, is available in several versions and your PCW can be a tough opponent. For strategy with a more contemporary feel, try **SAS Raid**.



Adventures were among the first computer games, originally developed on vast mainframes. You control a 'puppet' character with typed inputs, as you attempt to solve mind-boggling problems. Usually with a fantasy setting, adventures vary in tone

from the deadly serious to the hilariously funny, but the best call for hours of thought and total involvement with a story that you are actively shaping.



If you have only ever encountered arcade games in your local pub, it may come as a surprise to see how varied they can be. . . and how well some of the top titles from the games computers have been converted to the Amstrad! You need calm thought as much as accurate reactions if you're to beat the challenges posed by **Batman** or **Fairlight**.

Though they are appearing too late for full reviews, several simulations are also on the way, ranging from the sedate pleasures of cricket to the thrills of flying a Spitfire.

But whatever type takes your interest, games are probably the fastest moving part of the PCW market so look at our up-to-the-minute Up Date section. And remember — all work and no play makes Joyce a dull girl. Be warned though. . . you may just find that you're hooked!

S.A.S. Raid

S.A.S. Raid is something of an oddity. While the title suggests an arcade game, it is actually a test of strategy and risk taking.

Played on a grid, you control an S.A.S. man who has to find his way into a castle, deep within enemy territory. Dotted around the countryside are a variety of useful objects, such as a map which tells you what grid number you are on, and a radio which provides an update on where the patrols are.

You'll also find ropes, torches and similar aids to crossing a variety of obstacles at the northern edge of the grid. Only one square actually leads to the castle, and it's a matter of trial and error before you find it. A disguise will protect you, if you collide with a patrol, as will the gun, but you will be returned to your base and lose your possessions.

Once inside the stronghold,

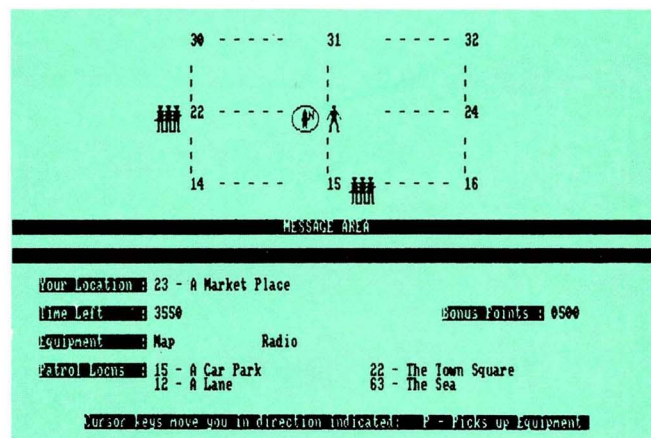
you choose which door to enter. One contains the documents, another a key which enables you to leave, but behind all the others are tricky tests, ranging from reaction time to observation and memory.

Though the idea of the game is very simple, it is also strangely addictive. You'll probably find yourself returning for that 'one last go' as you again fail in your mission. **S.A.S.** may not be as dramatic as its title suggests, but it's an interesting diversion for those who like brainteasers.

FACTS BOX

TITLE
S.A.S. Raid
PRICE
£14.95
PUBLISHER
CRL

Summary **Not so much burnt cork as brains required for this sortie into enemy territory.**



Fairlight

A perfect blend of strategy and animation, **Fairlight** is probably the closest you will get to a hybrid between an arcade and an adventure game. The superbly animated graphics combine with an epic quest to provide problems that will keep

you puzzled for hours.

Isvar is a lowly serf who has been lured into the depths of Castle Avars to recover the Book of Light, which is hidden somewhere within the walls. When he gives it to the old wizard, help prisoner in a remote chamber, the magical powers of the ancient tome will

break the curse that has condemned the land of Fairlight to darkness.

The game's 3D graphics, seen from a high angle, are beautifully drawn, though the price you pay for all this detail is a blackout as you move from screen to screen. But eventually you'll become so absorbed that you'll hardly notice it.

In fact, you'll probably spend your first few visits to Fairlight just wandering around, admiring the scenery, but beware. . . the natives are undoubtedly hostile. A host of guards roam the corridors, ranging from rejuvenating trolls to transparent, gas-filled bubbles. You'll find that a little thought avoids much dodging and fighting though.

Fairlight's most pleasing feature is the care that has been taken to make it realistic. Castle Avars is planned so that if your

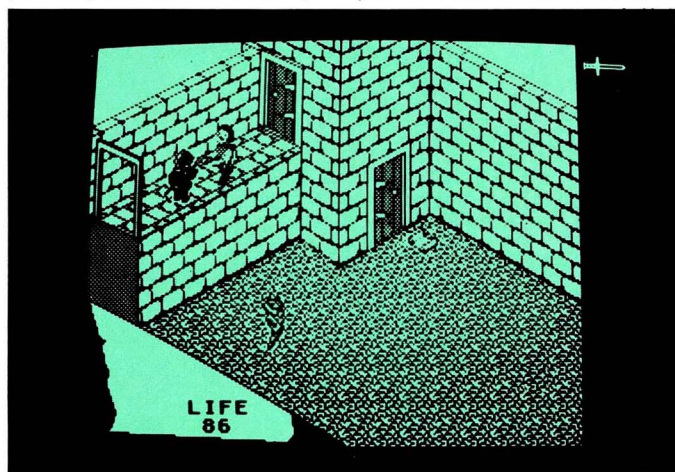
map indicates a wall that's too thick, it probably means that there's a secret passage behind it. Every object that you find has its own weight so that you can carry five keys at a time, but only one barrel. If you kick a chair it will slide further than a heavy oak table.

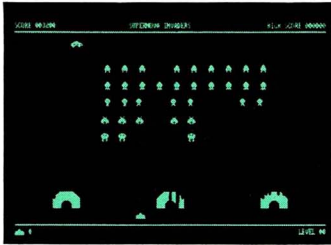
There is no single solution to **Fairlight**. Approach the secrets of Castle Avars much as you would a real life search and eventually you will save the kingdom.

FACTS BOX

TITLE
Fairlight
PRICE
£14.95
PUBLISHER
The Edge

Summary **A crucial PCW purchase, whatever type of game you prefer, combining adventure with great animated graphics.**





Invaders

They're back! The first game from the arcades to gain fame has invaded the PCW. There was

a time when almost every pub in the country seemed to be filled with the constant beep and blast of row upon row of rank and file little green meanies biting the dust.

It's interesting to play the game again after all these years and realise just how addictive it still is. There is something strangely satisfying about moving your laser base along the bottom of the screen, firing at the descending aliens. It's

probably the ideal therapy after a frustrating day using the PCW for more serious purposes.

Supernova Software's version of the classic, marketed by Gemini, is well planned as far as difficulty is concerned, with the invasion force getting ever faster as it nears the earth. Purists will object to the fact that you cannot move and fire simultaneously though.

On the whole, **Invaders** is an amiable diversion, and if you

buy Gemini's InterGem 5 1/4" disc drive, you get the little green meanies for free.

FACTS BOX

TITLE
Invaders
PRICE
£12.95
PUBLISHER
Gemini Marketing

Summary **There is still enough life in this old classic to keep you blasting the Invaders.**

Lord Of The Rings

Tolkien's epic quest has been the model for countless fantasy games, but here is the official version of the original classic. Actually this is just **The Fellowship Of The Ring**, the first volume of the trilogy, but successive parts will appear over the next year or so.

Melbourne House is the acknowledged Tolkien expert, having previously produced **The Hobbit**, also available for the PCW, and newcomers are advised to sample its delights and frustrations first.

Lord Of The Rings expands on its predecessor, not only in size (the main adventure is divided into two parts) but also in complexity. You can control any or all of the four hobbits in their battle against the forces of darkness and the evil Sauron. You can even split your party to pack them off on separate missions.

The really impressive feature of **Lord Of The Rings**, which it shared with **The Hobbit**, is its sophisticated understanding of English. You communicate with the program in English, a cut-down version of the everyday language. This allows you to

enter multiple commands, with one verb referring to several nouns, so saving on typing time, and to modify verbs with adverbs. You can even talk to the other characters, telling Sam to get the bottle and the food, for example.

It's possible to fool this system, and some of its misunderstandings may seem illogical, but remember that a computer is basically a fast but unintelligent thinker. **Lord Of The Rings** is still a stunning achievement, even if you do have to spell out your intentions at times.

If all of this sounds rather daunting there's a beginner's level game included on the disc. It follows the full-scale plot, but many of the puzzles are simplified or omitted altogether and you are restricted to just one character. Still, you can use it to get a taste of the full task.

FACTS BOX

TITLE
Lord of the Rings
PRICE
£24.95
PUBLISHER
Melbourne House

Summary **Advanced adventuring for fantasy fans, with amazing interaction which only occasionally fails to understand.**



Batman

Swooping down, to keep your PCW free from crime, comes the Caped Crusader. This is an amazingly successful conversion of a chart-topping game, even if on your Amstrad, Batman wears green, not blue and grey.

Like **Fairlight**, this is an arcade adventure, with 3D graphics seen from a high vantage point. The plot is true to comic strip simplicity. . . some fiendish villains have kidnapped Robin, the Boy Wonder, and Batman must save his sidekick.

Before he can do that he must reassemble the seven missing parts of the Batcraft, which Robin was in the process of cleaning, just before he was snatched away. They are scattered around the labyrinthine catacombs of the Batcave, which is inhabited by the Joker and the Riddler's deadly henchmen.

Where **Batman** differs from **Fairlight** is in the nature of its problems. Almost every room of the Batcave presents an individual puzzle, which must be solved before Batman can progress. There are conveyor belts that carry him to his doom unless he moves in the opposite direction; tricky arrangements of lifts that need careful timing if he's to jump between them;

necessary objects that lie on the far sides of exploding floors!

If that wasn't bad enough there's an amusing selection of evil characters. They include comic dogs which follow set movement patterns and whose bite is definitely worse than their bark, and radar assisted robots, who actively pursue our super hero. Even contact with the walls is fatal in some rooms.

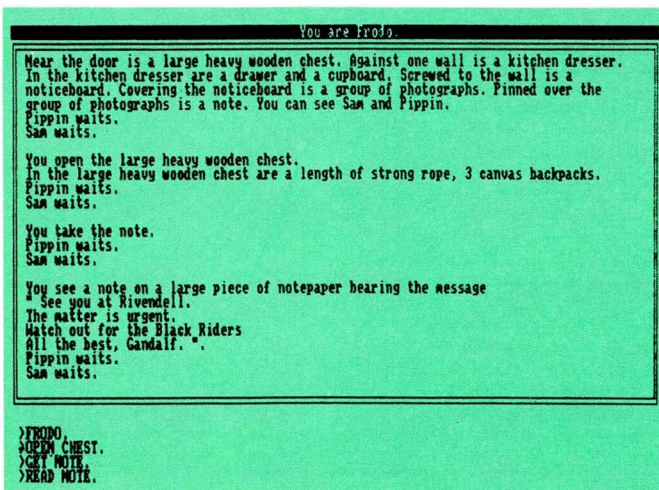
The one complaint about the game is its choice of movement control keys. They seem illogical to say the least, but as you can re-define them, it hardly matters.

Batman is a brilliant piece of programming, on a vast scale. It calls for lots of thought and fast reactions, plus some careful mapping to remind you what dastardly trap lies through that next door. Be warned though — it's not for the faint hearted, or anybody looking for five minutes easy relaxation.

FACTS BOX

TITLE
Batman
PRICE
£19.95
PUBLISHER
Ocean

Summary **Unbelievable animation and sound prove that the PCW can match any games machine, but Batman is not for beginners.**



3-D Clock Chess/ Colossus 4 Chess

Just about everybody knows the basics of chess, but it may come as a surprise to discover how well a computer can play the classic board game. We've pitted two PCW chess programs against each other.

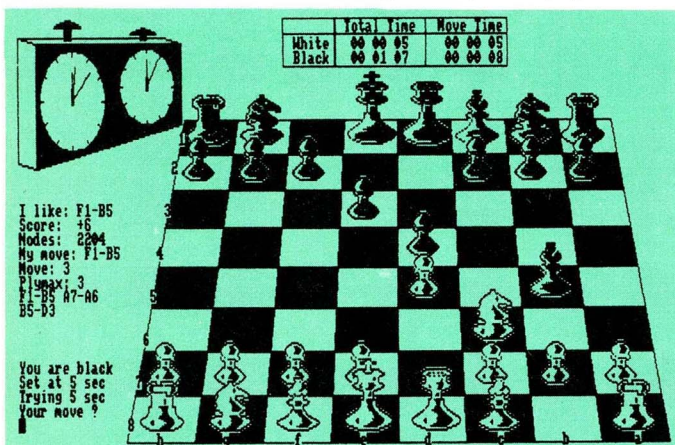
Both **3-D Clock Chess** and **Colossus 4 Chess** have good pedigrees, perfected on many other machines, and both have converted well to the Amstrad. They each offer a wide range of features and options and they play strong enough games to please almost any standard of chess player.

The most striking feature of **3-D Clock Chess** is its large board and standard chess set, shown in 3D. The graphics are clear and the board can be inverted so that you play from the correct end. You make your moves by entering co-ordinates, which can be displayed for the beginner.

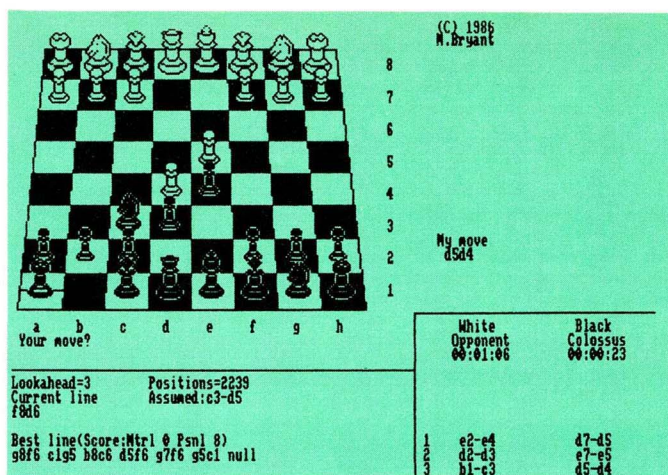
Colossus 4 Chess also includes a 3D illustration of the board, though this is smaller and less clear than its opponent's. However, it is possible to change to a standard plan of the board. **Colossus** employs the rather simpler method of using a cursor to move pieces, though you can enter co-ordinates if you prefer.

As its name suggest, **3-D Clock Chess** includes a chess clock, also drawn in 3D, at the top of the screen. Both programs allow you to play time based tournament and blitz games though. Time also controls the skill level of **3-D Clock Chess**; the longer you give it to think, the more it plans ahead.

Colossus's skill is controlled rather differently. You can select just how many moves forward it will look and even how aggressively it will play. And if



3-D Clock Chess



Colossus 4 Chess

you're interested in the micro chip's thought processes both programs will display these.

If anything, **Colossus** contains even more options than **3-D Clock Chess**, though they are also rather less easily accessed. Both programs allow the micro to play itself, and while **3-D Clock Chess** includes a Help routine, so that the program suggests your next move, **Colossus** lets you control both sides, or play a human opponent if you wish.

Both programs also include options that allow you to set up the board, and as a further bonus **Colossus** comes complete with a selection of games and problems, which will be of interest to the chess addict.

It's impossible to make a final choice between the two programs. While **Colossus** appears to play a stronger game and is more complete in its options, **3-D Clock Chess** is a more attractive package and is

easier to use. It would probably satisfy the occasional player, or even the novice, who could make good use of its Help facility, but the budding Grand Master may prefer to go for the comprehensive **Colossus**.

FACTS BOX

TITLE
3-D Clock Chess
PRICE
£19.95
PUBLISHER
CP Software

Summary **Attractive and easy to use, this package can cope with beginner and advanced players alike.**

TITLE
Colossus 4 Chess
PRICE
£15.95
PUBLISHER
CDS Software

Summary **For a really tough game, packed with options, this is the program, though it lacks some frills.**

| Title | Price | Publisher | Comment |
|--------------------------------------|--------|------------------|---|
| Ballyhoo | £29.99 | Infocom | Fantasy adventure. |
| Castle Blackstar | £28.75 | Infocom Classics | |
| Countdown to Doom | £19.95 | Global | Fantasy with humour. |
| Cutthroats | £29.99 | Infocom | Sea-based standard level. |
| Deadline | £29.99 | Infocom | Expert level mystery. |
| Enchanter | £29.99 | Infocom | Part one of spellcasting trilogy. |
| The Hitchhiker's Guide to the Galaxy | £23.00 | Infocom Classics | |
| Hamil | £28.75 | Infocom | Hilarious sci-fi. |
| The Hobbit | £19.95 | Global | Classic style. |
| The Hobbit | £24.95 | Melbourne House | Fantasy classic for Tolkien fans. |
| Infidel | £29.99 | Infocom | Advanced level among the pyramids. |
| Jewels of Darkness | £19.95 | Level 9 | Trilogy of traditional tales. |
| Lord of the Rings | £24.95 | Melbourne House | Epic sequel to The Hobbit. |
| Monsters of Murdac | £19.95 | Global | Humorous traditional style quest. |
| A Mind Forever Voyaging | £29.99 | Infocom | Advanced serious sci-fi speculation. 8512 only. |
| Old Scores | £19.95 | Global | Mystery set on South Bank. |
| Planetfall | £29.99 | Infocom | Sci-fi comedy at standard level. |
| Seastalker | £23.00 | Infocom Classics | |
| Seastalker | £29.99 | Infocom | Introductory level battle against sea monster. |
| Sorcerer | £23.00 | Infocom Classics | |
| Sorcerer | £29.99 | Infocom | Second part of the Enchanter trilogy. |
| Sorcerer | £23.00 | Infocom Classics | |

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|-----------------------------|--------|-----------------------|---|
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| Starcross | £29.99 | Infocom | Search of alien spaceship for experts. |
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| Invaders | £12.95 | Gemini Marketing | Arcade classic. |
| Spitfire 40 | TBA | Mirrorsoft | Accurate Battle of Britain missions. |
| Strike Force | TBA | Microsoft | Modern day air warfare. |
| Tomahawk | £19.95 | Digital Integration | Fly a battle helicopter across enemy territory. |
| Bridge Player | £19.95 | CP Software | Classic card game. |
| Colossus 4 Chess | £15.95 | CDS | |
| S.A.S. Raid | £14.95 | CRL | |
| Scrabble | TBA | Leisure Genius/Virgin | Ideal entertainment for wordgame fans. |
| 3-D Clock Chess | £19.95 | CP Software | |

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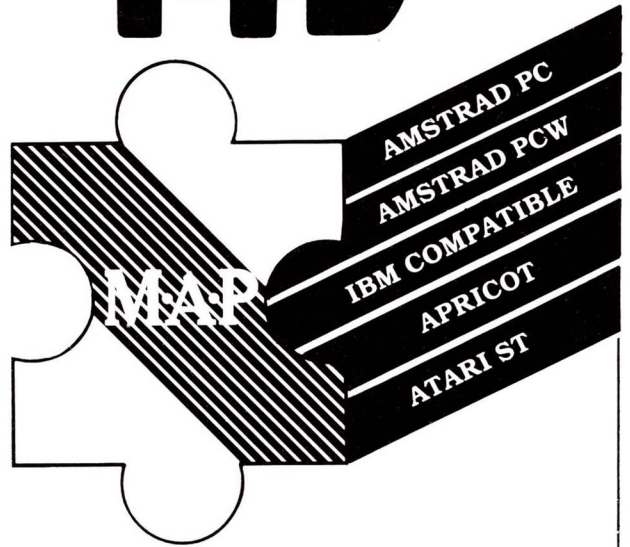
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sector editor which lets you access sectors, tracks and files with the minimum of trouble. It includes searches for strings of characters and byte sequences. It should be able to deal with any disc problems that you encounter. The documentation is extremely clear.

SIMPLE SIMON

Interlock Services Ltd.
£14.99

Simple Simon consists of a disc editor, including a recovery facility, which aims for simplicity of use. It can also format discs faster than **Disckit** and speed up drive performance. Start of day discs can be automatically created and there is an aid to handling password security systems.

Cutting down keystrokes

As you get deeper into software, particularly CP/M programs which lack the familiar Locomscript drop down menus, you could find yourself using long sequences of keystrokes to perform a single, simple operation. You'll save time with a Key Editor, a program that recalls long key sequences at the touch of a button.

SMART KEY

Caxton Software
£49.99

Smart Key runs alongside any application you're using under CP/M, though it's not compatible with **Locoscript** which uses its own operating system. It allows you to assign any sequence of keystrokes to a single key press — usually ALT plus a character.

The process is fairly simple, and the documentation is detailed and clear, but you have

to be careful. Defining a key used by the program itself can cause all sorts of problems.

But if you are familiar with a particular application there is no doubt that a Key Editor can save you vast amounts of time and trouble.

Work while you print

When you put the printer into action, you are usually tying the machine up for the duration, and that costs valuable computer time. The solution is a program such as **Spool**.

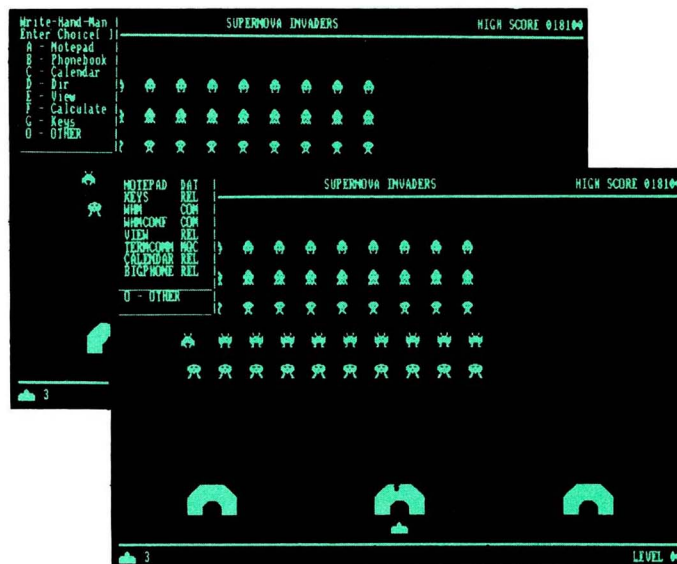
SPOOL

NewStar Software
£19.95

You install **Spool** by typing SPOOL at the start of your session and running your main program. Then whenever you send something to the printer **Spool** automatically stores all the necessary information in memory and takes over the chore of controlling the printing. The computer is left free for more useful ends such as letting you get on with the job in hand or running another program.

Another advantage of **Spool** is that it will 'stack' printing jobs. More than one file can be sent for printing at a time and the program will put it in a queue while you continue with something else. The only proviso is that there's enough memory available. Considering that the 8512 can spool documents of around 150 pages, and the 8256 about half as much, only the very greedy will run into trouble.

The price you pay is that program execution slows down a little while the spooler is at work, but the time saved is well worth it. If you are working and printing all day, this utility will pay for itself very quickly.



You can access **Write-Hand-Man** at any time — even during a game of Gemini's **Invaders**. A menu window appears in the top left-hand corner.

A friend inside your PCW

One of the most useful tools for the PC computers is **Sidekick**, a program which sits silently inside the micro until you summon it to perform one of its many functions. Now there's a version for the PCW.

WRITE-HAND-MAN

HiSoft
£24.95

This is not an essential utility, but once you get it running you may find yourself addicted.

You load **Write-Hand-Man** into the computer before doing anything else and it sits on top of the system, waiting for you to call it into action. Once activated, by a pre-determined keystroke, it gives a number of very useful options for anything who spends a great deal of time at the keyboard.

Notepad allows you to make a few notes, maybe about the program you're working on, in a 32 character by 8 line pull-down window. You could look up a phone number, previously stored on disc, and communicate that number to an autodial modem. **Calendar** is a two week diary, that could prove very handy for the business man writing a letter to arrange a meeting. There's also a four function calculator, a fast directory facility and much more.

Advanced features include a limited Key Editor. You can also load up a second program and when you exit from it return

automatically to the original application exactly where you left off.

Naturally such a complex program needs quite a bit of setting up so it isn't for beginners. But if you're getting so deeply into your PCW that you can barely tear yourself away from the keyboard, you'll need it.

Contacts

Caxton Software
10-14 Bedford Street
Covent Garden
London WC2E 9HE
01-379 6502

CP/M Users Group (UK)
72 Mill Road
Hawley
Dartford
Kent

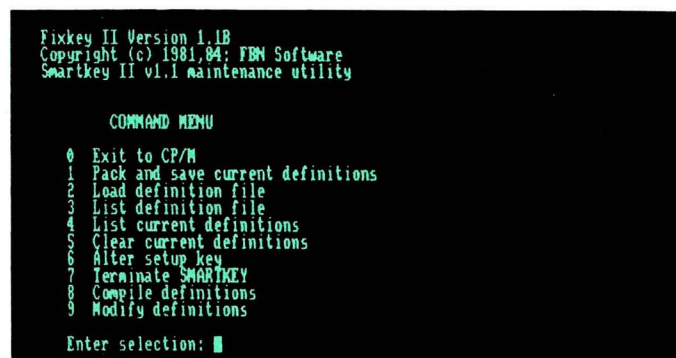
Davis Rubin Associates Ltd
1 Canonbourne
Weston Sub Edge
Chipping Campden
Glos GL55 6HW
0386-841181

HiSoft
The Old School
Greenfield
Bedford
0525-718181

Interlock Services Ltd
123b Brent Street
London NW4 2DX
01-202 8727

NewStar Software
200 North Service Road
Brentwood
Essex CM14 4SG
0277-220573

Siren Software
76 Bridge Street
Manchester M3 2RJ
061-796 6074



Smart Key's main menu presents a clear path through the key editor's functions.

Our Kempston Mouse is *THE BUSINESS*

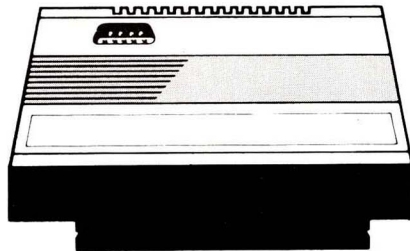
Kempston Mouse System for the AMSTRAD PCW 8256/8512.
Kempston announce the launch of their Mouse System for the Amstrad PCW Range complete with 'Desktop'

THE HARDWARE

The Mouse, which features two independent trigger buttons uses an optical system to decode movements of an internal tracker ball. These movements are precisely monitored by the interface which fits onto the expansion port of the Amstrad PCW. A simple port read reveals the exact X and Y co-ordinates and the status of the trigger buttons at any instant.

THE SOFTWARE

'Desktop' is a versatile drawing utility featuring Pop-Down menus enabling the user to treat the screen as if it were a drawing board, using the Kempston Mouse.

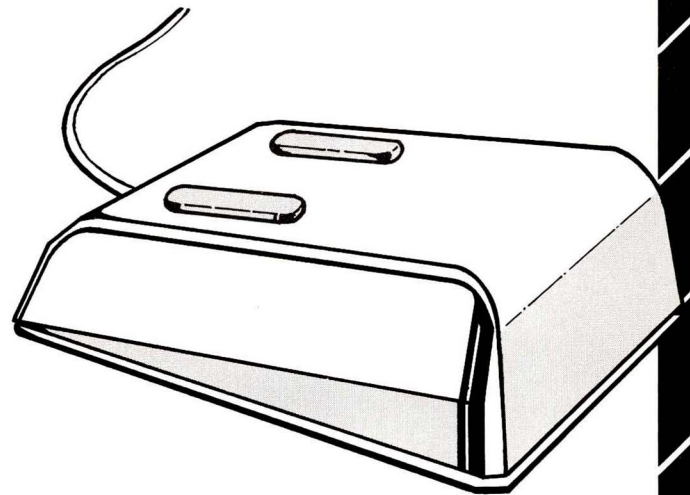


Mouse Interface

In addition to this drawing facility, it is possible to mix TEXT with graphics and also use the mouse drivers within Loco-Script. The Introduction of the Mouse expands the PCW's capabilities well beyond its primary function as a word processor.

The protocol used by the interface is likely to become the industry standard as it is already supported by Mirrorsoft with their 'Fleet Street Editor' and Nabitchi Computing with 'EXBASIC'.

The Kempston Mouse for the PCW 8256/8512 is competitively priced at £89.95 inc. VAT.



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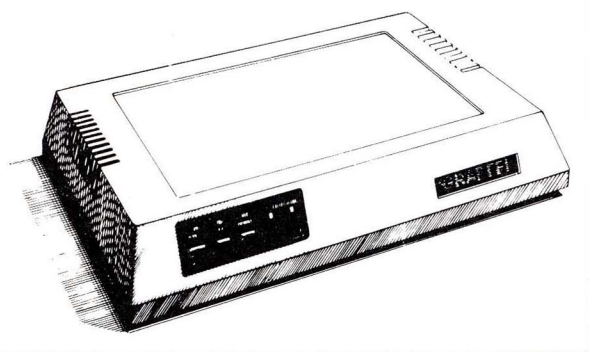
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Though most PCWs are bought to run other peoples' programs, many owners succumb to a desire to dabble in the code that controls the computer. . .

Mind your languages

Programming a micro is not difficult. It's a skill that can be learnt like any other, and most people can pick up enough competence to help them understand the workings of professional software.

However there are many different high level languages that can be used to communicate with the Central Processing Unit's (CPU) low level machine language. Each has its own style and is better suited to certain tasks than others. To confuse things further, though two versions of a language may be 90% the same, there are many different dialects available, which may include or omit certain commands.

If you want to start programming, where better to start than with **Basic** or **Logo**, which are bundled with the machine. But if you get hooked there are plenty more avenues to explore.

Back to Basic

Basic is the first language that most people learn. In fact, its name is an acronym of Beginners' All-Purpose Symbolic Instruction Code.

Basic is generally easy to learn, and understanding other people's code is simple; something which is not always true of other languages. Its use of numbered lines means that you can trace a path through the code, which has a reasonable resemblance to English.

Every Amstrad PCW comes complete with Mallard **Basic**, and all of the second manual is devoted to the language. While

```
10 LET N = 2
20 FOR C = 1 to 10
30 LET N = N * N
40 NEXT C
50 PRINT N
```

The numbered lines make **Basic** programs easy to follow. This one squares variable **N** ten times, using **C** as a counter.

Mallard is not a bad dialect, it does lack several important features, not the least of which is graphics handling. It's probably best suited to mathematical functions.

Exbasic, from Nabitchi, adds 36 new commands, covering cursor control, screen layout and those elusive graphics, to either augment or simplify Mallard sequences. You'll find yourself doing some extra typing, and operations will slow down, but this is one way to expand Mallard.

A more satisfactory alternative, for the ambitious user, is Digital Research's **CBasic** Compiler. This differs from Mallard because, instead of the micro having to translate the language into a form the CPU will understand every time it's run, it takes the program, produced with any editor or word processor that produces ASCII files, and turns it directly into machine code.

While it is rather slow running, **CBasic** Compiler includes sophisticated graphics, using the GSX system. It also lets you create a program in structured modules, which are eventually connected. Of course you lose the opportunity to run the uncompiled code to check it for errors, so this is a useful feature. The final program can use all 61K available when running directly under CP/M.

CBasic Compiler

Digital Research
£49.95

Exbasic

Nabitchi
£11.44

Mallard Basic

Locomotive Software
Included with PCW

Nevada Basic

£38.99

Z Basic

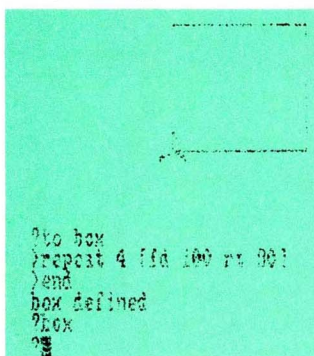
£86.99

Log onto Logo

Logo is the other language that comes with the PCW, and it's a very good introduction to programming. In fact, it's often

used in educational situations. Be warned though — **Logo** is nothing like **Basic**.

The most obvious feature of the language is the 'turtle' on-screen cursor, which you control from the keyboard. This graphics introduction to **Logo** makes it a lot of fun, but it has many other applications.



Logo lets you create procedures, such as drawing a box, and call them up with a single word.

Logo lets you use a number of simple commands to build up more complex procedures. To draw a box you'd command the turtle to advance a number of elements then turn through 90 degrees. Tell it to do this four times then stop. This procedure could be named 'box' and called up with this single word in future.

DR Logo

Digital Research
Included with PCW

Business talk

Cobol takes its name from Common Business-Oriented Language. It was the first language devised for general purposes and not just mathematics.

Its style is similar to everyday English, though it pays for this clarity in terms of the memory it requires. Despite this clumsiness, it is still an interesting language for the writer.

Cobol divides into four areas. Identification includes all the information on the program name, author, and so on. The Environment is only concerned with details which are specific to the micro. The hard core of the programming is its Data and the

Procedures, which act upon it.

There are three versions of **Cobol** available, of which Micro Focus's **CIS Cobol**, via Software Toolshop, is held in high regard.

CIS-Cobol

Software Toolshop
£99.95

Cobol

Nevada
£37.95

Cobol Compiler

Microsoft
£184.00

See C

C's short name could stand for the compact nature of the code that it produces. It allows you to do a lot with very few instructions, which take the form of words and symbols.

C is a highly-structured language, much favoured in the construction of computer operating systems, business software and even games. It is very flexible, in particular in its definitions of datatypes, but this results in its error checking being less strict.

If you're working with Hi-Soft's **C** and need a floating point library, to add arithmetical functions and more, Edenmay produces one.

Aztec C

£109.99 (personal)
£265.99 (commercial)

BDS C

£109.99

Floating Point Library

Edenmay Ltd
£12.95

Hi-Soft C

High-Soft
£39.95

Toolworks C/80

£00.00

Father of computing

Named after the father of computing, Blaise Pascal, this was intended as a successor to **Basic**, for use as a teaching language.

Pascal is a compiled language which is strong on

PROGRAMMING

long, complicated programs and list handling. It is also highly structured, enforcing a systematic approach. Unfortunately, these bounds can make it difficult to learn.

It's a popular language on the Amstrad, and the cheapest packages are from Systems Software and Hi-Soft. The former is a good choice for beginners because it lets you test run your compiled code without leaving the program, but its editor is less than perfect. **Pascal 80**, on the other hand, has an excellent editor, and Hi-Soft's policy of constant up-grades has ensured a host of features.

Stepping up a little in price, **Pascal/MT+** is a standard version, so its source code is easily portable, and comes complete with debugging utilities. **Pro Pascal** is again standard and includes facilities to handle long integers, random access file handling and single and double precision floating-point numbers. Around the same price **Turbo Pascal** is easy to use, fast and has several extension programs, including sound and graphics.

Oxford Pascal

Systems Software (Oxford) Ltd.
£24.95

Pascal/MT+

Digital Research
£49.95

Pascal 80

Hi-Soft
£39.95

Pro Pascal

Prospero
£75.00

Turbo Pascal

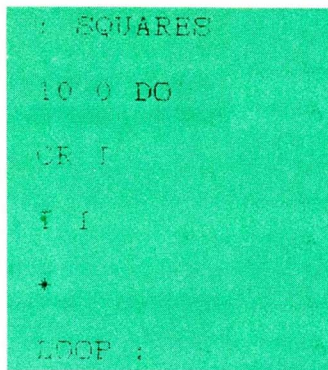
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Go Forth. . . and further!

Several other languages are supported on the PCW, and all have their adherents. Of these, **Forth** has attracted great interest. It has a dictionary of a few, limited commands, which are used to create new, compound commands. Eventually the whole program is turned into one command, which is then run.

Forth can be an exciting language to work in, but it can also be infuriating, because it is not easy to read somebody else's code — and chasing bugs in your own programs can be extremely difficult.

Fortran dates back to the days of mainframe computers,



Forth is a mid-level language, which lacks the simplicity of **Basic** but is friendlier than pure machine code and almost as powerful.

and has similarities to **Basic**. Its name is an abbreviation of FORMula TRANslation, and as this indicates, its main use is for scientific and engineering purposes.

Modula 2 is an interesting development of **Pascal**, while **Prolog**, from PROgramming LOGic, is particularly strong in its data handling. It's particularly favoured in Artificial Intelligence circles as it mimics human logic, and is likely to form the basis for the next generation of computers.

Lisp is also used in AI because of its LIST Processing strength, and for text handling. **PILOT** is a rather esoteric language but even this can be found on the PCW.

Of course, if you really want to get as close as possible to the micro's own language you can use an assembler. This allows you to address the chip directly, using mnemonic commands, such as LD for Load a register of the processor.

Not surprisingly, it's a difficult art to master, but if you've got a logical mind it can be most rewarding. You have to pay great attention to detail to get the chip to do just what you want it to, though.

A good assembler, which supports a wide range of commands, is vital, and though the CP/M disc actually includes such a utility, you'd be advised to invest in something more sophisticated. Hi-Soft's **Devpac 80** is to be recommended for its friendly facilities and reasonable price.

Forth

Abersoft
£29.95

Work Forth

£39.95

Fortran

Nevada
£36.99

Pro Fortran

Prospero
£75.00

FTL Modula 2

Hi-Soft
£49.95 (compiler)
£39.95 (interactive editor)

Micro Prolog

LPA

£77.00

Lisp/80

Toolworks

£69.95

Pilot

Nevada

£37.95

Devpac 80 Assembler

Hi-Soft

£39.95

Macro80 Assembler

Microsoft

£184.00

The easy way to program?

If actually writing a program sounds too complex, a program generator meets you half way and acts as a guide. **Nucleus** is an aid to creating business programs, which, as they're in Mallard **Basic**, can be modified further if you feel ambitious.

In simple terms, **Nucleus** lets you create data handling systems dedicated to a specific task. It could, for example, help you to create an integrated program that would use financial information within standard letters, storing the data in a database of personal records. Information from Compact's accounting software can also be used, or you can use the **Nucleus Interfacer** to communicate with other word processing and spreadsheet programs.

The well-illustrated manual is generally good and clear, though you'll find problems if you're an absolute beginner and rush straight into it. Take your time, follow the examples, and it all falls into place. The most important thing is to plan what you want the finished program to do before you move to the keyboard.

Nucleus won the 1984 RITA award for Best Software Product. It is still an excellent aid to fast and efficient programming.

Nucleus

Compact
£99.99

Nucleus Interface

Compact
£69.99

Contacts

Abersoft

7 Maes Aftallen
Bow Street
Dyfed SY24 5BA

Compact Software Ltd

1 Paper Mews
330 High Street
Dorking
Surrey RH4 1QX

Digital Research (UK) Ltd

Oxford House
Oxford Street
Newbury
Berks RG13 1JB

Edenmay Ltd

7 School Walk
Chippenham
Wiltshire SN14 0QS
0249-653800

Hi-Soft

The Old School
Greenfield
Beds MK45 5DE
0525-718181

Micro Focus

26 West Street
Newbury
Berks RG13 1JT
0635-32646

Microsoft

Excel House
49 De Monford Road
Reading
Berks RG1 8LD
0734-500741

Nabitchi

Merseyside Innovation Centre
131 Mount Pleasant
Liverpool L3 5TF
051-708 0123

Prospero Software Ltd

190 Castelnau
London SW13 9DH
01-741 8531

Softshare Toolshop

see Hi-Soft

Systems Software (Oxford) Ltd

16b Worcester Place
Oxford OX1 2JW
0865-54195

LANGUAGE SUPPLIERS

Because of their specialist nature, languages are often difficult to obtain. Where a publisher's address is not supplied, the program should be obtainable from:

Analytical Engines

PO Box 35
Eastleigh Hampshire SO5 5WU

Rational Solutions

9 Rosehill Road
London SW18 2NY
01-874 6244

Software City

382 Kings Road
Chelsea, London SW3 5UZ
or Software Toolshop (address above).
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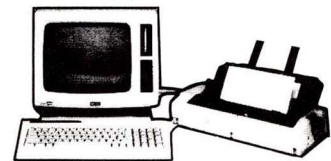
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| | | |
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| Payroll | £69.99 | £62.99 |
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| Popular Accounts Plus (Invoicing and Accounts) | £149.99 | £134.99 |
| Super Combo (Accounts, Invoicing and Payroll) | £199.99 | £179.99 |
| M. A. P. SOFTWARE | | |
| *Sales Ledger, Purchase Ledger, Nominal Ledger, Stock Control, Payroll (EACH) | £49.00 | £44.90 |
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EXTRA SPECIAL OFFERS (While Stocks Last)!!!

(8256/8512 Peripherals/Games)

| | | |
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| Bridge Player | £49.95 | £14.95 |
| 3D Cyrus Chess | £15.95 | £11.95 |
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*PC 1512 VERSIONS AVAILABLE AT THESE PRICES

Send S.A.E. For Full List of Amstrad 8256.8512, and PC 1512
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 Leeds LS1 4BJ. Telephone 0532 438111

(OVERSEAS CONTACTS WELCOMED)

LOGICOM

THE NEW RANGE OF LOGICOM PRODUCTS FOR THE AMSTRAD 8256/8512

QMAIL RRP 29.95 Available now

A mailmerge program that works with Locoscript files! Each name and address stored in the special database can have 5 extra User-defined fields for additional information. And, an attribute field allows each name and address to be coded for accurate mailshots.

ROTATE RRP 24.95 — It turns printing problems around.

If you have ever wished that the Amstrad 8256/8512 printer was 132 columns wide, because your print-outs won't fit across the page. Rotate prints files sideways down the page. So, all those wide spreadsheet models can now be printed in one go. Rotate prints any ASCII file, so it will work with Spreadsheets, Wordprocessors, Databases and some Accounts packages on the Amstrad. Rotate also has additional fonts to choose from. Files can be printed out in the normal way as well.

PRINTER STAND RRP 14.95 — specially designed for 8256/8512

The printer stand is 3.5" / 7.5 cm high. You can store fanfold paper neatly under the printer. It's business-like and made of strong light metal with 'non-slip' rubber feet. The colour matches the Amstrad printer flap.

Proteus are exclusive distributors for Logicom products, as well as distributors for several other publishers of 8256/8512 software. Our range includes: Amsoft, Arnor, Caxton, Compact, CP Software, Digital Research, Hisoft, MicroPro, Microcal, Sage and Tasman.

For further information telephone John Fontana, on 748-2302. Telex: 957485 ROBINCG. Trade & Export enquiries are welcome.

Post to John Fontana, Proteus Computing Ltd.,
 2 Iffley Road, London, W6 0PA.

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- I am an End User, please send me the address of my nearest dealer.
- I am a Dealer.
- Please send information on LOGICOM products.
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Name (Mr/Mrs/Miss/Ms)

Company Name

Address

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Please use BLOCK CAPITALS.

CGP

HARDWARE

As you become more ambitious, the basic PCW is likely to fall short of your needs.

Expanding your Amstrad

What 8256 owner hasn't wanted a second disc drive? And did you ever wish that you had a real letter quality printer for important correspondence?

A flourishing peripherals industry has grown up around the Amstrad, and if you take advantage of these additional pieces of hardware, you'll be well on your way to owning a powerful business system, for a fraction of the cost you'd expect to pay.

Interfaces

An interface is almost always vital before you start connecting peripherals to your Amstrad. You'll need it for electronic communications, as well as many alternative printers.

Fitted to the expansion port at the rear of the machine, it should provide an RS232 link and a Centronics port.

The RS232 is the industry standard communications protocol, and lets you send and receive information via the telephone, with a modem, or transfer data to other machines, via their RS232s, as well as using RS232, or 'serial' printers.

The Centronics port allows you to use Centronics, or 'parallel', printers.

Printers

The printer supplied with the PCW is a good little machine, but for particularly heavy work, or top quality print, you'll need an alternative.

Both common communications protocols are supported by most interfaces, so your choice is open, between dot-matrix or daisy wheel printers.

A daisy wheel can be thought of as a typewriter mechanism which is controlled by the computer. A dot-matrix forms the letters by a striking the ribbon with a series of tiny pins. The PCW's own printer is of this type.

The advantage of a dot-matrix is that it is fast and versatile, whereas a daisy wheel is relatively slow, although the print quality matches that of a good typewriter. Most people will want to expand to the higher quality alternative.

Hard Discs

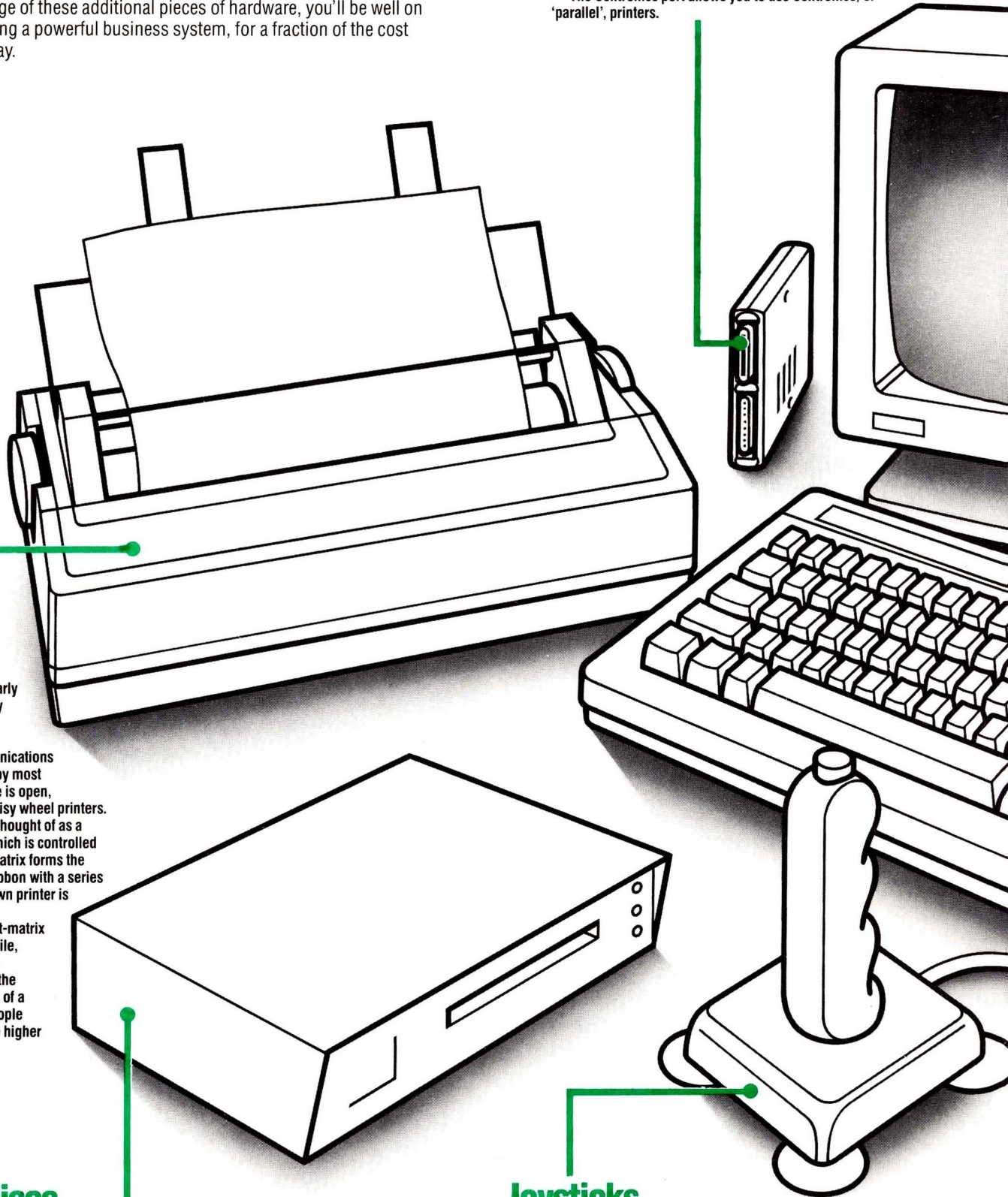
A hard disc, sometimes known as a Winchester, contains a rigid storage medium, protected from dust and dirt. It spins much faster than a normal floppy disc and can store considerably more data. Usually this would be 10 or 20 MBytes, which is around 60 normal CF2 discs! Not only can the Hard Disc store more data, but the storage and retrieval time is faster.

Once you've added a Hard Disc to your system, you'll wonder how you ever managed without it — but unless you really need its storage capacity, you may find the cost prohibitive, as they don't come cheap.

Joysticks

If you ever play arcade games on your Amstrad, you could save yourself a repair bill if you get a joystick. The PCW's keyboard was never designed for the pounding that some programs require.

You'll need a special interface to let you connect a standard joystick to your Joyce but games are already appearing which offer an option for this traditional arcade control. It's possible that other, more serious packages will use a joystick as an alternative to the cursor keys.



Internal Drive

Installing a second drive is probably the first major upgrade for an 8256 owner. The second drive, fitted below the first, is a double sided, double density drive. This means that both sides of the disc are read at once, and the information is very tightly packed, with around 700K storage space on a single disc.

As well as the extra space, a second drive also lets you copy files and programs from one disc to the other far more easily. And if you're using your machine for an application which accesses large files, such as a database, that second drive may become almost vital.

External Discs

An external drive is most easily fitted to an 8256. It is commonly connected where the second 3" drive would go and has all the advantages of an internal drive.

A striking advantage of these drives is that they can use different sized disc drives. The 5 1/4" floppy, considered to be the industry standard for most business machines, costs around half the price of the CF2 disc and there is also a 3 1/2" format.

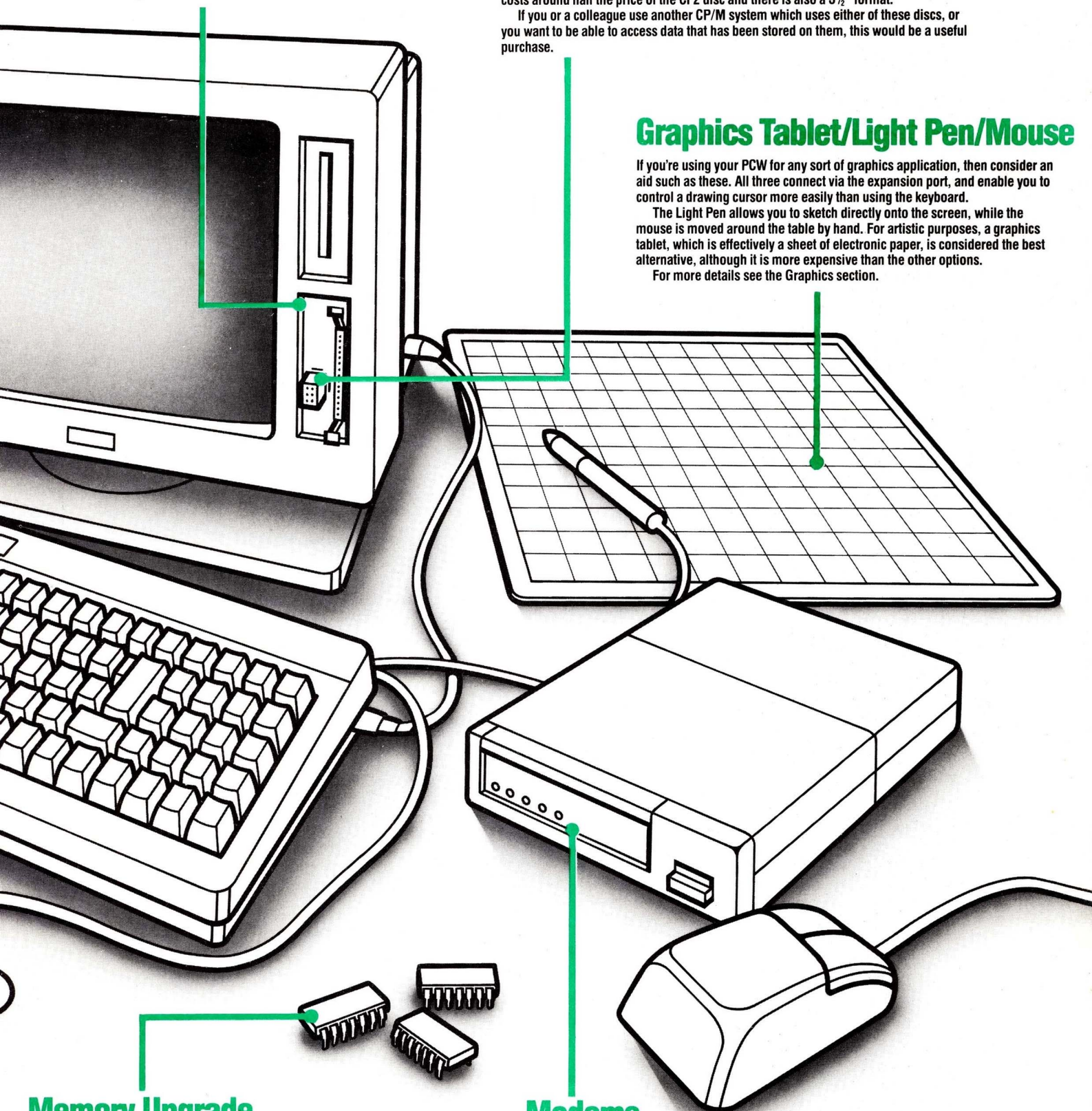
If you or a colleague use another CP/M system which uses either of these discs, or you want to be able to access data that has been stored on them, this would be a useful purchase.

Graphics Tablet/Light Pen/Mouse

If you're using your PCW for any sort of graphics application, then consider an aid such as these. All three connect via the expansion port, and enable you to control a drawing cursor more easily than using the keyboard.

The Light Pen allows you to sketch directly onto the screen, while the mouse is moved around the table by hand. For artistic purposes, a graphics tablet, which is effectively a sheet of electronic paper, is considered the best alternative, although it is more expensive than the other options.

For more details see the Graphics section.



Memory Upgrade

You might think that 256K of memory is more than enough, but as you use your machine for more ambitious applications, especially if you have a second drive, you'll find an upgrade to 512K useful.

Installation is simple enough. Just slot a few memory chips into the board, though beware — opening the machine may invalidate the guarantee.

The extra memory will provide you with a large RAM disc, so some applications programs will run faster and if you have a Print Spooler utility, you'll be able to stack up more jobs than ever.

Modems

A modem is simply a device that enables you, via an RS232 port, to send and receive information down a telephone line. It opens up a wealth of information systems and databases, such as Prestel and The Source, as well as offering electronic mail and telex services. You can spend as little or as much as you want, depending on how many extras you desire.

For further details see the Communications section.

HARDWARE

If you use an 8256, it won't be long before you wish you'd bought an 8512, with its second disc and improved memory. Luckily there are many ways to expand your Amstrad, and you may find that some of them even have advantages over the standard upgrade.

Expanders

and 368K to play with on Drive M. If you don't fancy doing it yourself, though, many dealers will fit the chips for you.

MEMORY UPGRADES

Analytical Engines

£26.80

Citadel

£39.95

Dictaphone

£74.18 (including fitting)

DK Tronics

£39.95

Expert Systems

£34.95

£39.95 (including fitting)

Nabitchi

£29.90

Screens Microcomputers

£26.05

Silicon City

£25.95

Soli-Comms

£22

£32.00 (including fitting)

Technology Research

£59

£69.00 (including fitting)

Timatic Systems

£49

Fattening up Joyce

While a memory expansion is one step up the ladder, for the true equivalent of an 8512 you need to add a second drive. Some programs, particularly ones that have to handle large amounts of data, actually require the additional storage space of the second drive. You'll also save yourself time when you're making copies of discs.

Installing an internal drive is rather more difficult than inserting eight chips, but it's well worth the effort. The PCW was designed with upgrade in mind, and you can take advantage of features that were intended to make life easier for service engineers.

You'll need a screwdriver and hacksaw blade, to break through the bulkhead below Drive A, but there's no soldering involved as everything plugs in. Inside, the wires are neatly bundled together, so there shouldn't be any real problems, beyond getting it all to fit back together again. A word of warning though; problems have been reported with certain, non-SD2 drives.

If this does sound a little daunting, you might prefer to have Dictaphone, which handles the official Amstrad upgrades, or a local dealer do the work.

8512 UPGRADES

Citadel

£189.95

Dictaphone

£182.85 (drive only)

£257.03 (full upgrade)

Expert Systems

£179.95

£184.95 (including fitting)

Nabitchi Computing

£149.50 (drive only)

£179.40 (full upgrade)

Silicon City

£139.00 (drive only)

Soli-Comms

£140.00 (drive only)

External expansion

Though 3" discs have the distinct advantage of being fairly damage-proof, they are almost unique to Amstrad. This has made them expensive, and double density ones can be difficult to find.

An alternative to a second 3" drive, for 8256 owners, is an external 5¼" or 3½" drive, which becomes Drive B on the **Locoscript** base screen or for CP/M. This may be fitted directly to the internal connector or via a special interface socket.

Gemini Marketing's **InterGem** enables you to connect any BBC compatible drive to your Amstrad. No soldering is required, so installation can be carried out at home.

Having removed the back of the monitor, you slice through the lugs holding the plate which covers the hole for the second drive, then slot the small circuit board in from the front.

Two sockets, for the drive's ribbon cable connector and power output, are the only evidence of the alteration, until you connect the drive. This should be 80 track, since **Locoscript** won't work with a 40 track model. Expect to pay £150.

The expansion is the same as adding an internal drive, and that extra 720K is enough to store vast amounts of data. But there's more. **InterGem** also lets you use CP/M programs on 5¼" disc, directly from your second drive.

The **InterGem** utilities disc, supplied with the hardware, allows you to format the drive to accept CP/M software for nearly 80 machines. It also lets you read from and write to machines using MS-DOS and PC-DOS, including IBM PC clones, and the BBC. In fact, your PCW can

interact with a world of systems.

From Technology Research comes the **Gamma Disk Interface**, which is available from the company complete with a selection of Mitsubishi drives, including a twin 3½" for £299, which really gives you storage power.

Timatic takes a different approach with their 5¼" drive. You connect this internally and thread the cable out through the back of the case. Though it doesn't come with software to access other CP/M formats, a program called **Chameleon** is available for this purpose from Timatic. What it does come with is an MS-DOS file transfer utility, allowing use of PC discs.

Peartree's drive comes in a box large enough to contain a modem, interface, or even a third drive. This forms a base for the monitor unit, raising it to a more comfortable viewing height. The company has an MS-DOS file transfer program available for an extra £27, and a further £21 brings the memory upgrade chips.

Box produces two drives which include format software. Their MS-DOS utility, which is read only with their 80 track drive, but read and write with the 40 track, costs £23.50.

DRIVE INTERFACES

Gemini Marketing

£99.95 (includes software)

Technology Research

£49

EXTERNAL DRIVES

Box Ltd

£177.50 (40 track)

£207.25 (80 track)

Peartree Computers

£139

Soli-Comms

£100 (3½" drive)

£110 (5¼" drive)

Timatic

£209

Internal Alterations

Though internal alterations to the PCW are not generally difficult, opening it up invalidates any remaining guarantee, unless it is done by an Amstrad authorised engineer.

If you decide to do it yourself, make sure that the machine is unplugged, and has been allowed to stand for several minutes, to let power drain from the circuits. Avoid touching the end of the monitor tube as this can contain high voltages.

Improving your memory

By far the cheapest way to upgrade an 8256 is to forget the second drive and concentrate on its memory. This is made relatively simple, providing you don't own one of the very first PCWs, because the machine is just waiting for you to insert those extra memory chips.

Provided you take your time and follow instructions, it's not a hard task. Open up your machine and you'll find eight sockets, which is where the chips go. Though fitting these can be a bit fiddly, it is by no means difficult.

You then have to let the micro know that it's now operating at as an 8512. This is where vintage PCWs cause problems, as you'll have to do a little re-wiring. Most people will just have to flick four switches.

And that's all there is to it. You now have 512K of memory

Upgrading to a daisy wheel printer will interest anybody who needs truly letter quality copy. But before you can connect anything to your Amstrad, you'll require an interface.

Printers and Interfaces

Making connections

What's in an interface? In theory one will do as well as another, but some contain extra features beyond the serial and parallel ports, or you may not need these standards at all.

Amstrad's **CPS 8256** is the official interface for either machine. It isn't one hundred per cent standard as it uses an eight bit Centronics port instead of the usual seven bit. This will cause problems with certain printers, unless you can alter or obtain software to correct it.

The only other possible problem with the **CPS 8256** is that **Locoscript** files have to be converted to ASCII first. Apart from that it's well documented and serves its purpose well.

Somewhat cheaper, and solving the bit problem check, is Peartree's interface, which fits rather obtrusively on the side, rather than the back of the micro.

SCA Systems' is slightly cheaper than the official offering, and contains a real time clock, which uses battery back-up. This means that you can add date and time to files, from the operating system. RS232 communications can be set at 300 to 19200 baud, and an additional three wire duplex port

is included for direct file transfer.

Soli-Comms interface contains two additional ports. An Atari-style mouse can be plugged in, to control an on-screen arrow cursor, or modem users can view Teletext frames in colour with an RGB monitor.

Though the interface doesn't include a clock, one is available separately from Soli-Comms, and it includes a facility to store security codes and machine options.

Finally, those special applications. If you've been tempted to play arcade games on the Amstrad, you'll know that the keyboard can take quite a hammering. A joystick interface is the answer, and two are available, from Cascade and DK Tronics. Many future games are certain to offer these control options.

RS232/CENTRONICS INTERFACES

Amstrad

£49.95

Peartree Computers

£39

SCA Systems Ltd

£55

Soli-Comms

£30

£55 (with RGB)

+£5 (with mouse port)

+£10 (TV modulator)

JOYSTICK INTERFACES

Cascade

£24.95

DK Tronics

£ TBA

Perfect printing

Though the Amstrad PCW printer is amazing value, considering the total price of the package, and its results are good enough for many purposes, you could want an

alternative for a variety of reasons.

You could choose another dot matrix. Though you can get better print quality, and at a higher speed than the PCW's rather sluggish pace, the price that you'll pay makes this an unlikely move.

Instead, most people will want a daisy wheel, with its electric typewriter quality printout. For important business correspondence, or typing reports and theses, this is the natural choice.

The third option will set you back more money than even the highest quality daisy wheel. Laser printers produce copy that is good enough for typesetting, with all the versatility of type-faces and font sizes associated with dot matrix. For instance Qume's standard **LaserTEN** costs £2,880, excluding VAT!

Other considerations when buying a printer are primarily speed, paper size and noise. A dot-matrix can howl like a banshee, while a daisy wheel will rattle like a hailstorm, so take this into account unless you're prepared to buy an acoustic hood as well. Speed is measured in cps (characters per second), though this is variable depending on the document. Some manufacturers are rather optimistic in their estimates.

Finally there are compatibility questions. Most printers are unable to handle **Locoscript** files, and you have to establish certain parameters concerning carriage returns, line spacing and the like, before you can use them with CP/M. Thankfully, many programs include options for the most popular brands. You will also find printing effects limited with some daisy wheels.

There are far too many

printers to list them all in a publication of this sort, but as an example, the Qume **Sprint** range is priced between £549 and £2768. Speeds range from 22 to 90 cps, they all offer bold and proportional spacing printing effects and two line and three character pitches. Various types of paper feed are available, including cut sheet feeders, which are invaluable when you have a large job which can't be printed on perforated fan-fold.

Other tried and trusted names are Epson, Canon, Olivetti, Toshiba, Ricoh, Silver Reed and Brother. But whatever sort of printer you're looking for, ask questions, see it in action, and get a specimen of its printout.

Dedicated Daisy Wheels

If you bought your PCW primarily because it was a one plug system that avoids compatibility problems, don't despair. It is possible to upgrade to a letter quality printer that will work with **Locoscript**.

ATT Systems produces a complete package of printer, interface, cables and software. At an equivalent print speed of 35cps, the ATT is moderately fast and remarkable quiet for a daisy wheel. It can cope with paper up to 17" wide, with a print width of 13.7".

The software runs under CP/M and is menu driven, so all you have to do is load its **Locop** disc, then your **Locoscript** file disc. You choose the document with the cursor bar and press Return to print. The PCW printer remains connected all the time, so it can still be used for draft quality, before ATT produces high quality finished copy.

Wilding Office Supplies has put together two bundles, based around either the **Brother HR10** or **Silver Reed XP500** daisy wheel printer. Normally these cost £199.95 each, but for a further £149.50 they will supply a complete package including cables, interface and **NewWord**, including mailmerge and spell check, to provide a complete word processing upgrade.

DEDICATED PCW PRINTERS

ATT Systems Ltd
£573.85

PCW PRINTER PACKAGE

Wilding Office Supplies
£349.45



The ATT Printer is a fast, quiet running daisy wheel which has the distinct advantage of being fully **Locoscript** compatible.

HARDWARE

A second drive adds considerable power to your PCW. But if your needs are really ambitious you can turn a humble Amstrad into a system to take on all competitors.

Advanced systems

Multi-users and megabytes

Imagine having 100 times the storage space of a standard 3" disc. You could have your word processor, database, spreadsheet and accounts software always ready to run — with plenty of memory left over for data!

A hard disc, commonly called a Winchester, allows you to do just that. One of these sealed units should be considered by every business where there is need for bulk storage and a variety of programs.

ACC Computer Services'

drive is 10Mb capacity (that's 10,000Kb) and comes complete with the **Tasword 8000** word processor disc controller, host adapter for use with the PCW and power supply.

Soli-Comms' Winchester offers 20 Mb capacity and comes complete with an SCSI controller, a separate power supply, software and an interface for a parallel printer. It plugs directly into the expansion port.

A hard disc can still be worthwhile on a single user system, but it really comes into its own when it's used to network a series of PCWs, or even a mixture of micros, which then become separate workstations.

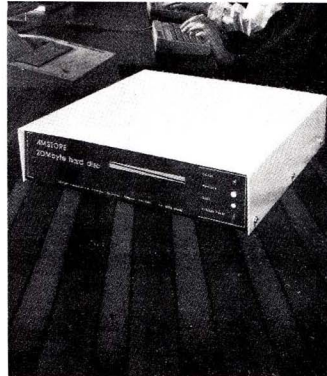
All are able to access the disc simultaneously thanks to its speed, which is many times faster than a floppy disc drive. Information can be exchanged between users, so that you can call up information on an invoice from the accounts department for a letter that you're writing.

Meanwhile, each micro on the network retains its integrity, which means that if one suffers a failure, the others can continue as if nothing had happened.

Northern Computers' **Amstore** provides just such a system. If you're feeling really ambitious you can couple 120 Amstrads, or other computers, to the one network. This allows you to add more or less sophisticated micros, according to usage.

At **Amstore's** centre is a 20Mb Winchester, which connects up to a ring circuit, with sockets for each micro, printer, extra drive or whatever. These are known as nodes, and **Amstore** allows you to change and expand the system at will.

Amstore is also intelligent. Communicating such large amounts of information around a network calls for some clever



Northern Computers Amstore provides Winchester and networking facilities.

programming to ensure that everything reaches its correct destination. The demands made on the user by **Amstore** are very few. A little care may have to be taken with security though, to ensure that files are only accessed by authorised users, and that certain uses are prioritised.

Expansion holds vast potential, from a shared, quality printer to communications. In this last respect, Northern Computers is producing a telex node. And if the thought of trusting all that information to

one disc doesn't seem wise, they are currently developing a streamer, to let you back up files on tape.

The system is cheap and easy to install, with its neat junction boxes. Obviously to realise its potential to the full, and to justify its cost, it's best suited to larger businesses, for whom it could be a godsend.

HM Systems' answer to **Amstore** is the **Amstrel**, a version of their **Minstrel**, which was actually used by Amstrad itself. Much of what has already been said about networking holds true. **Amstrel** also features discs, both 20Mb hard and soft, including a 3", and a tape back up.

It runs an operating system called TurboDOS, which allows you to combine CP/M and PC-DOS programs on the same network. Its basic system is for two users, but it can be extended to 16. With a 16 bit master controller, you can run advanced 16 bit software, with 8 bit PCWs as terminals.

HARD DISCS ONLY

ACC

£686.55

Soli-Comms

£600

HARD DISC PLUS NETWORKS

(Basic unit cost)

HM Systems Ltd

£6,195

+£1,390 (per extra pair of workstations)

Northern Computers Ltd

£1,400

Contacts

ACC Computer Services

8 Water Street
Abergele
Clwyd LL22 7SH
0745-826235

ATT Systems Ltd

16 Park Road
Kenilworth
Warwickshire CV8 2GF
0926-55914

Amstrad Consumer Electronics plc

PO Box 462
Brentwood
Essex CM14 4EE
0277-230222

Analytical Engines

PO Box 35
Eastleigh
Hampshire SO5 5WU

Box Ltd

22 Hendred Street
Oxford OX4 2ED
0865-717968

Cascade Games Ltd

Harrogate HG1 5BG
0423-504663

Citadel Products Ltd

50 High Street
Edgware Middlesex HA8 7EP
01-951 1848

Dictaphone Company Ltd

Regent Square House
The Parade
Leamington Spa CV32 4NL
0926-38311

DK Tronics Ltd

Englands Lane
Gorleston-on-Sea
Great Yarmouth
Norfolk NR31 6BE
0493-602926

Expert Systems

Freepost
Northampton NN1 1BR
0604-24463

Gemini Marketing Ltd

Gemini House
Concorde Road
Exmouth EX8 4RS
0395-265165

HM Systems Ltd

220 The Vale
London
NW11 8HZ
01-209 0911

Nabitchi

Merseywide Innovation Centre
131 Mount Pleasant
Liverpool L3 5TF
051-708 0123

Northern Computers Ltd

Churchfield Road
Frodsham
Cheshire WA6 6RD
0928-35700

Peartree Computers Ltd

St George's House
14 George Street
Huntingdon
Cambs PE18 6BD
0480-50595

SCA Systems Ltd

61 Ferringham Lane
Ferring
Worthing
W Sussex BN12 5LW
0903-504444

Screens Microcomputers & Electronics

Main Avenue
Moor Park Northwood
Middlesex
09274-20527

Silicon City

Mithian
St Agnes
Cornwall TR5 0QE
087255-2112

Soli-Comms Ltd

17 Swayne Avenue
Southend-on-Sea
Essex SS2 6JQ
0702-335511

Technology Research Ltd

Unit 18
Central Trading Estate
Staines
Middlesex TW18 4XE
0784-63547

Timatic Systems Ltd

Fareham Market
Fareham
Hants PO16 0LB
0329-236727/239953

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AnsibleCheck will give an accurate word count of any LocoScript document . . . quickly and easily. Here are the main features:

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- Up to 1,500 entries, 40 page references each
- Automatic alphabetization
- Exact page numbers
- Lists words, phrases and *inverted* phrases
- No special commands to learn . . . if you use LocoScript, you can compile an index
- Full page proof compatibility: optional dummy format, plus reorganization to match printed book
- **AnsibleCheck** included
- **Price: £49.50**

Both packages include a special free "extra": the dreaded **GREASE**, scourge of writers everywhere . . .

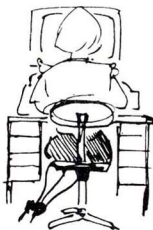
PLEASE NOTE: no hidden costs. Our prices include VAT and postage. A comprehensive, plain-language manual comes with both packages. Write or telephone for our detailed brochure. Or order direct, payment enclosed, from:

ANSIBLE INFORMATION (Dept. DG)
94 London Road, Reading,
Berkshire RG1 5AU Tel: 0672 62576

PS

WORD PROCESSING

PCW
8256



PCW
8512

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- * We have designed our courses to ensure that you receive the highest degree of personal attention.
- * We offer you full telephone support after training.

Our **Introductory Course** covers the basics for total newcomers to word processing and our **Advanced Course** is customised to your special requirements.

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 Kent TN13 1AS
 Tel: (0732) 460003

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 London WC2H 8NA
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THE MINERVA "LEARNER FRIENDLY" RANGE



AMSTRAD
PCW

AMSTRAD
PC

The easy to use computer software written for People not Programmers, bringing simplicity of operation to the Amstrad PCW and PC.

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If you have just purchased your Amstrad or you are finding the manual too complex, then this tutorial is just what you need. A LocoScript tutorial which teaches every function FROM WITHIN LOCOSCRIPT. You will become so confident that you even produce your own personalised manual! Only £16.95

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The courses run from Friday evening to Sunday afternoon with all meals included. A maximum of six places are available on each course.

Software for other computers also available.



MINERVA SYSTEMS,
69 SIDWELL STREET, EXETER,
DEVON, EX4 6PH. Tel: 0392 37756

PCW 8256

£382.57 EX VAT
 £439.95 INC VAT

256k Memory Expansion

PCW 8512

£469.52 EX VAT
 £539.95 INC VAT

£35.95 Inc VAT

Upgrade the internal 8256 memory to 512k and increase the RAM disc to 368k

NOTE: All Prices include VAT & Carriage - No extras to pay

DOT MATRIX PRINTERS

| | | |
|--|--------|--------------------|
| Canon PW 1080A (nlq) | 259.95 | Inc VAT & Carriage |
| Canon PW 1156 | 384.95 | |
| Epson LX86 (new model) 120cps/25cps NLQ | 274.95 | |
| Epson LX86 Tractor Attachment | 21.75 | |
| Epson LX86 Sheet Feeder | 55.95 | |
| Epson FX80 (160cps) | 399.95 | |
| Epson LQ1500 (200cps, professional) | 899.70 | |
| DMP 2000 | 154.95 | |
| Juki 5510 180cps/NLQ (optional colour - fantastic value) | 289.95 | |



SPECIAL OFFERS

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| Quen Data Daisywheel Printer | 149.95 |
| National Panasonic KX-P1080U superb value | 189.95 |
| MP165 160 cps/40 cps NLQ | 219.95 |

AMSTRAD COMPUTERS & DISC DRIVES

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| 6128 Green | 284.95 | DDI Drive | 152.95 |
| 6128 Colour | 369.95 | FDI Drive (No interface) | 95.95 |

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| Daisytype 2000 | 229.95 |
| Juki 6100 | 289.95 |
| Juki 2200 Daisywheel Printer/Typewriter | 279.25 |

SOFTWARE

| | |
|-------------------------------|-------|
| Basic Tutorial PT1 | 19.95 |
| Basic Tutorial PT2 | 19.95 |
| Pitman Typing Tutor | 9.95 |
| DFM Database | 14.95 |
| Supercalc II | 49.95 |
| Devpac Assembler/Disassembler | 24.95 |

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| Cashbook Accounts | 33.00 |
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24 HOUR TELEPHONE ORDERS

Dept. CGA1.86
 46 Middle Street, Blackhall,
 Hartlepool, Cleveland TS27 4EA.
 Tel: 0783 872430.

Microdis

SERVICES

A computer is only an aid to efficiency if it is used efficiently itself. One of the main causes of confusion is a disorganised workspace, and yet it is an area that is often overlooked.

From cables to tables

Hold the front page

A source of annoyance when copying a document is that your attention is constantly shifting between the screen and the text. A copy holder keeps your document in a comfortable viewing position.

Thingi is an unlikely name for an ingenious solution to the problem. A plastic bar, with a clip at one end and a strip of velcro at the other, it holds the copy so that it hangs down by the side of the screen.

If you prefer a more conventional copy holder that sits on the table, or even clamps to its edge, RSC produces one of each type. Both use clips and a magnetic ruler to hold the copy steady.

THINGI

Overbase Ltd.

£6.99

FREE STANDING/CLAMP COPY HOLDERS

RSC Ltd.

£12.95/£29.95

Filing your floppies

Is your desk awash in a sea of 3" floppy discs, some of them without covers? Then

you're inviting trouble. As well as wasting time searching for the disc you want, they are susceptible to damage. You risk losing valuable data, and all because of a stray dust particle. The solution is to file away your discs much as you would any other office documents, in a specially designed filing cabinet. Several companies produce such boxes. Micro Interface's hold up to ten discs, which are fanned out for easy selection when you open the lid. Rexel's box is lockable and includes three dividers as does RSC's.

3" FILING CABINET

Micro Interface

£5.95

Rexel

£16.50

RSC Ltd

£10.50/£13.50

Position your printer

One of the few features of the PCW guaranteed to cause irritation is the length of the printer cable. It is almost impossible to position it anywhere other than to the right hand side of the monitor.

But if you'd prefer it to the left, or on a shelf above your desk, so that continuous

paper can feed up from below, help is at hand. Extension cables, specifically designed for the PCW are available from several suppliers, the standard length is around 1m, though this may vary. Lightwave sells a 2m set. Many also sell cables to connect serial printers to an interface.

PRINTER EXTENSION LEADS

RSD Connections Ltd.

£10.93

Analytical Engines.

£10.99

RSC Ltd.

£12.50

Lightwave

£18.45

CENTRONICS PRINTER LEADS

RSD Connections Ltd.

£17.48

RSC Ltd.

£12.50

Lightwave

£13.65

Portable Joyce

If you can't bear to be parted from your Joyce, Vidix produces a carrying case that lets you carry it by hand or over your shoulder, as well as keeping it safe during car journeys.

With room for all the hardware plus discs, manuals and even a modem, the **Amstrad Transporter** measures 17" x 16½" x 14". Of tough design, it contains protective boards and features an adjustable nylon webbing strap which can be used over the shoulder or as a handle.

AMSTRAD TRANSPORTER

Vidix Case Company Ltd.

£19.75

Keep it clean

Just as it's important to keep your discs free from dust, you need to protect your Amstrad as well. Ordinary household and office dirt will soon find its way into vulnerable parts of the micro, in particular the disc drives.

Dust covers are available from a variety of sources, including some suppliers. They are one of the cheapest accessories that you can find. . . but they could save you a lot of expense repairing damage caused by dirt!

DUST COVERS

BBD Computer Dust Covers

£11.95

TMEC Trading

£9.50

RSC Ltd.

£9.50

Lightwave

£19.95

Don't be dazzled

The best way of avoiding reflections on the screen is not to place your machine facing a light source, and to keep it clean. But even then you may find that glare makes prolonged viewing uncomfortable.

An anti-glare filter clips in front of the monitor and cuts down reflections.

Lightwave sells one specifically for the PCW



Thingi copyholder

at a cost of £19.95, which is a small price to pay for all the eye strain it saves.

SCREEN FILTER

Lightwave.

£19.95

Four legs to stand on

There are definite reasons for buying specialist computer furniture. It should be solid enough to bear the weight of the monitor and printer, and take the constant vibrations of your typing. And it may also contain a variety of features, such as channels for cables.

While the occasional user may be satisfied with a cheaper unit, which blends in with their home decor, the small business person will want a more robust piece of office furniture. In the end it is a question of balancing cost against usage.

Make sure that you have enough storage space for all your discs, manuals and other

equipment. Also ask yourself if you need a platform to raise up either the monitor or the printer. If your desk lacks such a facility, TMEC produces a range of metal monitor and printer stands, starting at £13.50.

At the bargain end of the market, MFI furniture warehouses frequently offer computer tables at less than £20. These are quite functional, but many are intended more for the games playing fraternity, so be careful to ensure that the model is rugged enough for the PCW.

Stepping up to £59.95 brings the **Opus Organiser**. A shelf takes the monitor and printer, with storage space underneath, and the whole unit is mounted on castors and finished in teak. The unit is 31" high, 40 $\frac{1}{4}$ " wide and 26" deep.

Prototype Development Systems desks are aimed at the small office and start at £74.45. Their units have steel frames with teak finish or London grey laminated surfaces. Sizes range from 2' by 2' to 4' by

2', to heights of either 26" or 30". A selection of shelves, paper feed trays, wire channels and concealed four plug extension sockets make for a comprehensive system.

Opus's **Business Desk Range** starts at £129, rising to £239 for a full feature desk, which includes slots for paper feed through the desk and cables, a shelf and a drawer. The dimensions are 27 $\frac{1}{2}$ " high, 46" wide and 30" deep.

Their basic Model 1 (27 $\frac{1}{2}$ " high, 46" wide, 30" deep) is easily augmented with a shelf for £49. Model 2 measures the same but adds a 5 $\frac{1}{4}$ " high drawer, and costs only £159. If you want to create a unified office, Opus also produce triangular units to link its desks.

MONITOR/PRINTER STANDS

TMEC Trading

COMPUTER FURNITURE

MFI

Opus Supplies Ltd.

Prototype Development Systems Ltd.

Since it was introduced, the PCW has attracted services of every kind. From electronic typesetting to maintenance agreements, we reveal the miscellany of support for the machine.

Support your PCW

Join the club

The official **Amstrad Professional User Club** brings you discounts on software, peripherals, discs, ribbons and stationery, which can be ordered by phone; a support hotline for programs sold by the group, a monthly newsletter and free copies of **Amstrad Professional Computing** magazine. **Amstrad Professional Computer User Club Lazahold Ltd.**

£49.95 pa

Backing small businesses

The success of the PCW has led to a dramatic fall in the cost of CP/M business software. But while manufacturers have not cut corners in software quality, the level of support offered has been an inevitable casualty. Obviously when a program is sold for £250, the manufacturer is expected to provide a telephone helpline. But what about the £50 version for the PCW?

The **Small Business Support Group** provides a neat answer to this problem. For an annual subscription of £40, you have the right to phone the **SBSG Hotline**, which covers a wide range of CP/M software, and is available during office hours, Monday to Friday.

Less urgent problems are dealt with by post or electronic mail, and your membership includes a free subscription to the One-to-One service (see the

Communications pages), and access to **SBSG's** own notice board.

Other benefits include a bi-monthly magazine, a disc copying service for the conversion of public domain software or data between disc formats and sizes, and a 10 per cent discount on **SBSG** training courses.

The courses are based in Worcestershire and the standard charge is £100 a day. Subjects covered include the PCW hardware and operating systems, word processing, data processing and spreadsheet programs, telecommunications and networking. Weekend courses are also available.

Small Business Support Group Microcomputer User Publication Ltd.

£40.00pa

Get set with your Amstrad

While desk top publishing packages have brought the preparation of pages for printing within the reach of every PCW owner, for that really professional appearance you still need proper typesetting.

Even this process can be computerised. Whether you're producing a business card, a small display ad or a full blown magazine, professional typesetting is available.

Wordstream offers the cheapest service, though you'll have to enter the codes that control the setting yourself. These are illustrated in an easy to follow manual.

Fonts, faces, boxes, border rules, distortion and reverse setting are available.

You insert the setting codes directly into your text, but this is far less daunting than it sounds, providing you take your time and follow the instructions. Then post off your disc to Type City Graphics, or for almost immediate turnover, use the One-to-One E-mail service, and send the copy down the telephone line.

Type City Graphics sets the type directly from your data. It is important to check for typographical errors, and that all the codes are as you wish, because you are in total control of the final result.

Turn around is extremely quick, thanks to this high level of computerisation. Your setting will usually be returned the same day. It is also cheap, the minimum charge being £2.60, for 12" of type.

Wordstream works with ASCII files, so you'll need a recent version of Locoscript with this conversion facility if you're using the standard word processor.

Typeshare's setting is more expensive because it depends on software which you buy from the company. This costs £199.98, plus VAT, for a basic package, with additional units to allow more elaborate printing effects available at £199 each.

The software provides full preview facilities, letting you see where lines and pages will end, and includes error checking, to warn you of mistakes in your codes.

Setting costs £3.60 for each linear 300mm, though if you send the copy by modem (Typeshare has one available for £398), this is reduced to £2.40. Twenty fonts are available, from 4 $\frac{1}{2}$ to 72 point.

Typesetting

Type City Graphics Ltd.

Typeshare

SERVICES

Amstrad ailments

There appears to be an unwritten law that however reliable a piece of equipment is, it will go wrong at the most inconvenient moment. Now that you're dependent on your Amstrad, can you imagine the problems if it suddenly died on you?

No business can afford the time spent sending a vital piece of equipment back to the manufacturer. This is where Dictaphone steps in. Having been responsible for the installation of second disc drives since the 8256 first appeared, it is now offering a maintenance contract.

For a first year payment of £41.40, you get twelve months of cover. This allows you an unlimited number of on-site emergency calls, during normal working hours. A request for service will normally be met within two working days.

An alternative is provided by Expert Systems, which requires you to return your machine by Securicor courier, though this expense is carried by the company. Furthermore, the company guarantees to return your machine within three working days. The cost of the annual contract is £29.95 for an 8256, £39.95 for an 8512.

Service Agreement
Dictaphone
Expert Systems

Contacts

Analytical Engineers

PO Box 35, Eastleigh
Hampshire SO5 5WV

BBD Computer Dust Covers

The Standish Centre
Cross Street
Standish, Wigan
0257-422968

Dictaphone Company Ltd

Regent Square House
The Parade
Leamington Spa CV32 4NL
0926-38311

Expert Systems

Freeport
Northampton NN1 1BR
0604-24463

Gateway Video Tutorials

68a Dornton Road
London SW12 9NE
01-675 4019

Head-Line Communications

Friar House, 9 Friar Street
Hereford HR4 0AS
0432-275132

Lazahold Ltd

Victoria House, PO Box 10
Sunderland SR1 3RY

Lightwave Leisure Ltd

Unit 31, Wirral Business
Centre Dock Road
Birkenhead L41 1JW
051-639 5050

Micro Interface

84 Talbot Road
London N6 4RA
01-340 0310

Micro Learning Centre

13a The Bull Ring
Wakefield WF1 1HB
0924-383312

Microcomputer User Publications Ltd

Bank Buildings
Kennel Lane, Broadway
Worcs WR12 7DP
0386-852641

Minerva Systems

69 Sidwell Street
Exeter, Devon EX4 6PH
0392-37756

Office International

247-257 Euston Road
London NW1 2HY
01-388 9344

Opus Supplies Ltd

55 Ormside Way
Holmethorpe Industrial Estate
Redhill, Surrey RH1 2LW
0737-65080

Overbase Ltd

176a Conway Street
Birkenhead, Wirral L41 3JB
051-647 8981

Prototype — Development Systems Ltd

Survey House
Pool Close, West Molesey

Surrey KT8 0RN
01-941 2225/3909

RSC Ltd

75 Queens Road
Watford WD1 2QN
0923-43301

RSD Connections Ltd

PO Box 1, Ware
Herts
0920-5285/66284

RT Computer Training

15 Victoria Street
Wetherby
W Yorkshire LS22 4RE
0937-63032

TMEC Trading

68 New Road, Clifton
Bedfordshire SG17 5JL
0462-676253

Type City Graphics Ltd

Victoria Chambers
Fir Vale Road
Bournemouth BH1 2JN
0202-294347

Typeshare

Alan House
55-59 Saffron Hill
Hatton Garden
London EC1N 8QX
01-405 7937

Vidix Case Company Ltd

Tech West Centre
10 Warple Way
London W3 0RQ
01-749 9692

Capitol Computer Products

SAGESOFT

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| ACCOUNTS | £89.00 |
| PAYROLL | £59.00 |
| MAGIC FILLER | £59.00 |
| INVOICING | £59.00 |
| COMBO PACK | £129.00 |
| SAGE DATABASE | £59.00 |
| ACCOUNTS PLUS | £129.00 |
| SUPER COMBO | £169.00 |
| CHIT-CHAT, E-MAIL | £59.00 |
| CHIT-CHAT, VIEWDATA | £59.00 |
| CHIT-CHAT, COMBO | £89.00 |

Available complete with Modem

| | |
|---------------------------|---------|
| CHIT-CHAT, E-MAIL PACK | £189.00 |
| CHIT-CHAT, VIEW DATA PACK | £189.00 |
| CHIT-CHAT, COMBO PACK | £229.00 |

HISOFT

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|-------------------|--------|
| PASCAL 80 | £35.00 |
| THE TORCH | £10.00 |
| THE KNIFE | £10.00 |
| DEVPAC 80 | £35.00 |
| HISOFT C COMPILER | £35.00 |

CAXTON

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| BRAIN STORM | £43.00 |
| SMART KEY | £43.00 |
| TOUCH 'N' GO | £21.00 |
| CARDBOX | £89.00 |
| SCRATCH PAD | £59.00 |

COMPACT

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|------------------|---------|
| DAYBOOK | £45.00 |
| COMPACT ACCOUNTS | £189.00 |
| SALES LEDGER | £59.00 |
| SALES INVOICING | £59.00 |
| PURCHASE LEDGER | £59.00 |
| NOMINAL LEDGER | £59.00 |
| STOCK CONTROL | £59.00 |
| PAYROLL | £89.00 |
| NUCLEUS | £89.00 |
| INTERFACER | £59.00 |

AMSOFT

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|---------------------------|--------|
| SUPERCALC II | £43.00 |
| NOMINAL LEDGER | £30.00 |
| PURCHASE LEDGER | £30.00 |
| COMBINED BUSINESS PACKAGE | £89.00 |
| <i>NEW FROM AMSOFT!</i> | |
| MICROFILE/MICROWORD | £45.00 |

DIGITAL RESEARCH

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| CBASIC | £45.00 |
| DR. GRAPH | £45.00 |
| DR. DRAW | £45.00 |

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| CASH TRADER | £99.00 |
| With option Analyser | £149.00 |
| TIME RECORDER | £69.00 |
| SHOEBOX | £149.00 |
| MATCHBOX | £29.00 |

MICROPRO

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|-----------------|--------|
| POCKET WORDSTAR | £45.00 |
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PACE

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| RS232 INTERFACE | £65.00 |
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DISCS

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|----------------------------|--------|
| AMSOFT 3" CF2 (BOX OF TEN) | £36.95 |
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UPGRADES

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|-----------------|--------|
| DK TRONICS 8256 | |
| UPGRADE TO 8512 | £36.00 |

GAMES

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|------------------|--------|
| CP SOFTWARE | |
| BRIDGE | £19.95 |
| 3D CLOCK CHESS | £19.95 |
| COLOSSUS 4 CHESS | £15.95 |

DUST COVERS

| | |
|--------------------|-------|
| KUSTOM COVERS | |
| 6128 DUSTCOVER SET | £6.95 |
| 8256 DUSTCOVER SET | £8.95 |
| 6128 DUSTCOVER | |
| (Keyboard Only) | £4.95 |

Please make all Cheques/Postal Orders payable to:

CAPITOL COMPUTER PRODUCTS, Unit F3, Railway Triangle, Farlington, Hants PO6 1TG

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Please supply the following

Name _____

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Post Code _____ Tel: _____

Dealer Enquiries Welcome

If applicable

All prices include VAT and postage

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- ★ A simple to operate program specifically for storing names and printing labels on the PCW.
- ★ Requires no expertise.
- ★ Any number of names on different disks which may be changed from within program.
- ★ Five categories of selection codes plus alphabetic selection.
- ★ Names quickly retrieved from an index file in alphabetical order.
- ★ Date stamping for expiry.
- ★ Full screen editing (amendments are easy).
- ★ Flexible label spacing (1-9 across).
- ★ Restart print run from part way through.
- ★ Uses memory drive and either disk drive.

EASyLABEL £23.95 (inc. VAT p&p)

MULTILINK NETWORK SYSTEMS

**Monksilver House, Rose Mount,
Oxton, Birkenhead L43 5SW
Tel: 051 652 5371**

DEALER ENQUIRIES WELCOME

PCW 8256/8512 EDUCATION

Give your kids that extra edge with the world's leading educational software now on your PCW. Don't settle for less than the best.



ONLY £14.95 — mail order

BETTER SPELLING (age 9-adult)

A superb training course with 16 menu options to choose from. Deals with all the major aspects of spelling in a structured and imaginative manner. Already available on BBC, Commodore, and other Amstrad machines. This is an entertaining and educationally sound way to gain the confidence of those with a good command of spelling whether you are a schoolgoer, secretary or in business.

BIOLOGY

This program has already been acclaimed in its Commodore, Amstrad and BBC versions. The course is well structured, written by an educational author like all our programs and as usual programmed by a professional to give you top standards. The menu options contain notes and exercises which should give a good understanding of the basics of biology. Ideally suited to ages 12-16.

CHEMISTRY

For a nominal price this course gives many hours of work in the basic areas of chemistry. Learning is reinforced with well designed assignments which develop understanding. Educationally superb and professionally programmed to give PCW users the very best. Ideal for ages 12-16.

BETTER MATHS 1 (age 12-16)

Rated in reviews as the best maths course on the market and now for your PCW. Book your order now. Ten courses on popular areas of maths.

MAGIC MATHS (age 4-8)

"Here at last is a program which really deserves the title 'educational game'," said one review. Easily the best educational game available for any machine.

MATHS MANIA (8-12)

This outstanding program now available for our PCW makes multiplication and division addictive fun.

Only available mail order £14.95 each

VISA HOTLINE ring 010/353/61/27994 (UK) for immediate delivery or send cheque/PO/VISA No.

£1.00 p&p (Amstrad PC soon)



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SOFTWARE LTD.**

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AMSTRAD TRAINING NATIONWIDE

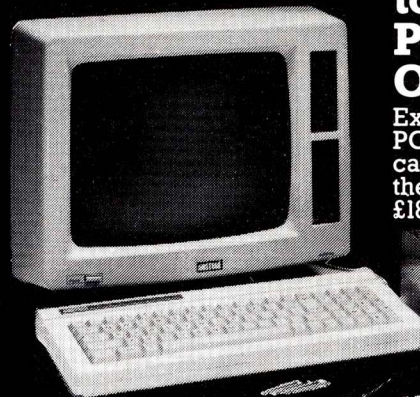
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For further details phone
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Training (UK) Ltd.**

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Existing owners of
PCW8256 machines
can now upgrade to
the PCW8512 for only
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- Easy to follow instructions.
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Export enquiries to:
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84 Talbot Road, London N6
Telephone: 01-340 0310
Telex: 295441 Busy B G

UPDATE

Few industries move faster than computing. Ever since we started writing the Guide, details of new products have been flooding in. Here's a selection of the ones that didn't quite make the deadline. . .

Hold the back page!

PCW vs PC

The biggest event on the Amstrad computing scene has been the launch of its PC clone. With prices starting at just £399 plus VAT and an amazing specification, it's an undeniable bargain. So does the advent of the PC change what we said about the PCW in the introduction? Should you trade-in your Joyce, before it's only fit for the scrap heap?

The answer is categorically — no! Good though the PC 1512 is, it serves a different purpose. It gives you more computing power, a faster processor, and access to state of the art programs. But do you need all of this?

Though the 8256 can be limited at times, the 8512 is a powerful twin drive machine. Ask yourself how often you've found the PCW slow — and that doesn't include **Locoscript's** scrolling, which is the program's failing, not the machine's.

And how many times does state of the art merely mean status symbol? Though Amstrad is going to promote the word processing side of the Joyce, if you've read this guide, you'll realise that there's not a lot you can't do with it.

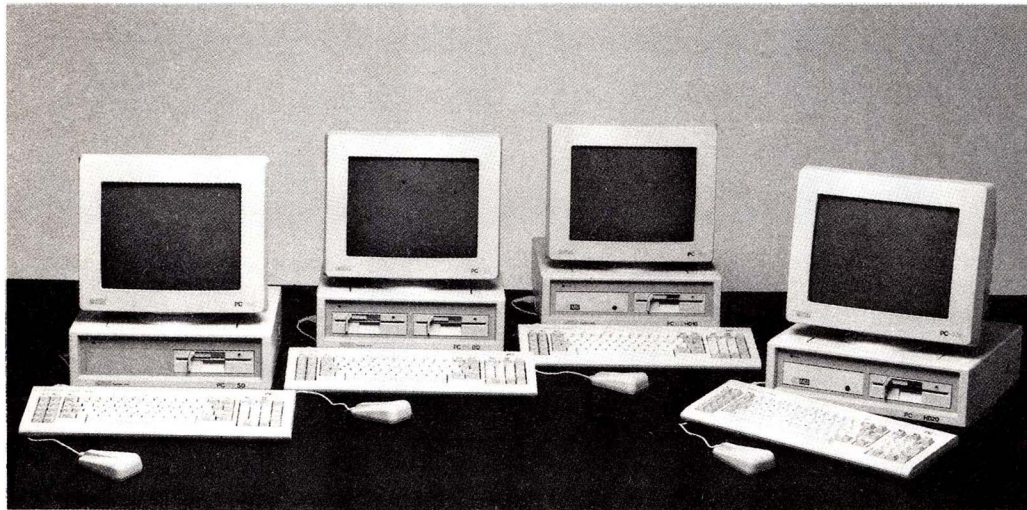
Finally, there's the question of price. For a twin disc PC you'll have to pay £499, but on top of that you'll need a printer — perhaps another

£200 — and even if you're just word processing with it, you'll need a program, costing at least another £70. So you're paying £270 more than a PCW just to get your system up and running. Bear in mind that software prices are likely to be more expensive as well.

The PC 1512 is a very good machine. But don't get hooked on hardware. Think whether it's worth the extra cost for what you want to do with it.

AMSTRAD PC 1512 £399+VAT upwards

Amstrad Consumer Electronics, Brentwood House, 169 Kings Road, Brentwood, Essex CM14 4EF. 0277-230222



The Amstrad family of PC Clones — but will they make the Joyce redundant?

Star suite

Though there's a lot to be said for mixing and matching products, a suite of programs has its own attractions, particularly when the programs are of the quality of the **Pocket ProStar** series.

This is centred on **Pocket WordStar**, a classic word processor. To this is added **CalcStar**, the spreadsheet, and **InfoStar**, a complete database and reporting package.

Buying the programs en suite saves money, and, of course, you can also transfer data between them. Another advantage is that DRA has configured all the programs to take full advantage of the PCW keyboard, with its special keys. And you'll be buying from one of the most knowledgeable, helpful distributors in the country.

POCKET PROSTAR SUITE £149.00

Davis Rubin Associates Ltd, 1 Canonbourne, Weston Sub Edge, Chipping Campden, Glos GL55 6QH. 0386-841181

Mailshots — Locoscript style

At last a new version of **Locoscript**, complete with mailmerge, has appeared. But this particular upgrade is going to cost you £49.95.

For that you get an extremely powerful program, with one distinct advantage over all its competitors — it runs inside **Locoscript**. This means that you select it from the disc management screen, just as

you would Print or Edit.

There are two kinds of merge, to let you type in the details, or use a **Locoscript** document as its database. You have a lot of choice about the kind of information that goes into each letter, so insertions can be dependent on other conditions. You can even have different paragraphs sent to

different people.

A clever program, which adds a much needed feature to the resident word processor. And if that wasn't enough, **Locomotive** is working on a Spelling Checker too.

LOCOMAIL £49.95

Amsoft, Victoria House, PO Box 10, Sunderland SR13PY. 0783-673395

Ribbon repair

The shortage of Amstrad discs is finally over, but it seems to have been replaced by a printer ribbon famine. This makes a ribbon re-inking seem like a good idea. Such a service is offered by Aladdink, who charge £1.90 to press that ribbon back into service when it's grown old and grey.

Aladdink, 4 Hurkur Crescent, Eyemouth, Berwickshire TD14 5AP. 0390-50965

Praise the Vicar

If your program, it doesn't matter what language you use — eventually your code will develop a bug. Often it can arise from something as simple as a variable: a letter or letters that stand for a number. It should be easy to trace, but only if you can keep track of your variables.

Vicar stands for Variables In Context Analyst and Reporter, and provides full cross-referencing

which can cope with multiple source files. Its friendliness is reflected in its provision of full context for each variable and not just a line reference. Versions are available for **dBase II, Basic, C-Basic, Pascal, Turbo Pascal and C. THE VICAR**

£29.95 each version

Iansyst Ltd, Omnibus Building, 41 North Road, London N7 9DP. 01-607 5844

Beware of the Monster!



Tales abound of a land called Murdac — but no adventurer has ever returned from beyond its borders. The prize for a successful mission is rumoured to be great wealth. But the price of failure is always death.

Monsters of Murdac is an unusual quest into a land of improbable creatures and alternative universes, which should keep you tied in knots for weeks on end. It's a sophisticated adventure, and **Locomotive's** coding means it can understand multiple commands. And with its unique sense of humour, it's unlikely that you'll have seen anything like it before!

MONSTERS OF MURDAC £19.95

Global Software, PO Box 67, London SW11 1BS

Counting the costs

Cornix has announced two new packages for the small business which has to cost a product or provide estimates for a service. Both are menu driven and aim for simplicity of use.

Product Costing keeps track of raw materials and labour costs to provide a report on the latest cost of each product. You choose whatever mark ups apply. **Job Estimating** is suitable to situations where work is contracted, such as in the building or printing trade. It has both management and customer modes, so you can use it in front of a client with only the selling price terms on display.

PRODUCT COSTING/JOB ESTIMATING
£49.95 each

Cornix Software Ltd, Spirella Building, Bridge Road, Letchworth, Herts SG6 4ET.
0462-682989

Shock waves

There's a topical note to **Aftershock**, an adventure set after a major nuclear accident. An earthquake has damaged a reactor and it's up to you to repair it. But to reach it you have to make your way through the shattered city.

If you find the verb/noun input of traditional adventures frustrating, you'll be pleased to learn that this one won't communicate with you unless you talk proper English!

AFTERSHOCK
£17.95

Interceptor Micros, Mercury House, Calleva Park, Aldermaston, Berks.

Space age workstation

If you're in the market for hi-tech computer furniture, **IQ-161** is a purpose designed desk with 21st century styling.

It takes the ergonomics of keyboard work into account, with

full adjustment for height, viewing angles and seating position. It also has a steel base for stability and front lockable heavy duty castors. Height adjustments are controlled by a pneumatic spring in the central column. The standard workstation comes with desks for the monitor, keyboard and printer, which has its own stand, but optional extras include a side table and a drawer.

IQ-161 WORKSTATION
£112.70

Intelligence Quotient Ltd,
45 Epping Close,
Romford,
Essex RM7 8BH

The IQ-161 computer table adds a touch of Star Trek chic to your working environment.



Miditrack wasn't quite ready as we went to press, but it has a successful track record with the Amstrad CPC games machines.

MIDI Music

The idea of using your PCW for musical purposes may sound unlikely, but you're not dependent on its keyboard and humble beep.

Midi is a standard for communications between electronic musical instruments and micros. It allows you to connect an instrument, such as a keyboard, to your computer and use it to drive or be driven by software which can store sequences of notes, data for

synthesised sounds, or provide a composition aid.

Midi opens up a wide range of musical possibilities, including the opportunity to multi-track recordings, which consists of laying down a number of tracks so that you can play along to your own accompaniment. You can also connect other Midi instruments, such as a drum machine, and the system ensures that they keep

perfect synchronisation.

Miditrack Performer is a tried and tested system, which includes the interface and driving software. EMR can also make a suitable Yamaha or Casio keyboard available. Though the price isn't fixed yet, the system should be available before Christmas.

MIDITRACK PERFORMER

Electromusic Research Ltd, 14 Mount Close, Wickford, Essex SS11 8HG. 0702-335747

All at C

Another version of the C language is available from Advantage. It's a full Kernighan-Ritchie implementation, supporting floats, doubles, bit fields, structures and unions and is Unix C compatible.

As well as 150 library functions and optimisation tools, it includes a step-by-step tutorial, so even if the above means nothing to you at the moment, it could do soon.

For those lighter moments, Advantage also has four comic adventures, the Arnold Blackwood saga.

ADVANTAGE-C

£39.50

THE ARNOLD BLACKWOOD ADVENTURES

£15.95

Advantage, 33 Malyns Close, Chinnor, Oxfordshire OX9 4EW

Interface Extra

Another company has entered the interface fray. RAM's Centronics and RS232 interface comes complete with a printer cable, but it's still cheaper than Amstrad's own. The casing is especially slim and it's colour matches the Amstrad's case.

RAM INTERFACE

Ram Electronics (Fleet) Ltd, Unit 16, Redfields Industrial Park, Church Crookham, Aldershot, Hants GU13 0RE. 0252-850031

Read on

If you want further information on the Amstrad, there's no shortage of reading material. In fact there's far too much to mention it all. A brief word for a handful of books though.

Pitman publishes and distributes several titles, including two from Sunshine Publications on **Locoscript** and the PCW in general, plus an audio typing course. Mike Gerrard's introduction to word processing on the machine, **Using the PCW 8256**, from First Software, is extremely friendly.

The best way to keep up-to-date on a monthly basis is probably one of the magazines dedicated to the machine. There's been a spate of them recently, but the longest established is **Amstrad Computer User**, with its more recent break-away title, **Amstrad Professional Computing**.

If you're getting into communications, there's a bi-monthly title dedicated to the subject and packed with all sorts of information on this fascinating, but at times complex, area. It's called **TeleLink** and subscription details are available from 68 Chester Road, Hazel Grove, Stockport SK7 5NY, or phone 061-480 0171.

Technical drawing

If you want to use your PCW for technical drawing and none of the packages in our Graphics section is precise enough, Timatic has the answer with **Microdraft**. The accuracy is such that the cursor position is given in hundredths of a millimetre!

To cope with this detail it uses a zoom facility, holding the whole picture in memory, and only the small part that the screen resolution can handle actually appears. You can also pan across the surface of the drawing.

Drawing uses a menu system, and includes techniques specially suited to draughtsmen, such as cartesian and polar cursor positioning. There are also Get and Move commands to manipulate individual elements. If you want to build up a library of picture elements on disc and then introduce them into drawings, there's the Macro option.

A technical product, and one which requires a plotter to get the best from it, but it's an exciting expansion of the machine into a new field.

MICRODRAFT £79.99

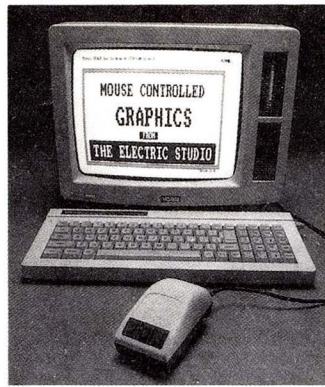
Timatic Systems Ltd, Fareham Market,
Fareham, Hants PO16 0LB. 0329-236727/
239953

Mice everywhere

If you read our demonstration of Electric Studio's **Light Pen**, you'll realise that we had a lot of fun with it. However, for accurate drawing it's rather too imprecise.

Now the company has a mouse, which comes with the enhanced version of the graphics software. This adds the ability to save and reload parts of a screen; expansion and contraction of windows; a lock facility to aid straight line drawing; and a co-ordinate display option for extra accuracy. The mouse interface also includes a joystick port.

Meanwhile the company is set to move into another area of graphics with a video digitiser. This allows you to take a video image and turn it into a picture on your PCW, which could be useful for all sorts of display purposes. On the software front, Electric Studio is developing a font module, for use with the graphics program.



Electric Studio's Mouse — the first rodent controller for the PCW.

The **AMX Mouse**, complete with Desk Top program, should also be available soon, and Advanced Memory Systems also has a pagemaker program for desk top publishers.

THE ELECTRIC STUDIO MOUSE £123.95

The Electric Studio, Unit 13, The Business Centre, Avenue One, Letchworth, Herts SG6 2BH. 0462-895720

Keeping it under control

Amstand could help you maximise desk space and keep your PCW wiring under control. It's a simple two shelf, box unit, with room for the printer on top and the monitor inside. The screen is raised to a more comfortable viewing height,

and the keyboard can be hidden underneath when you're not using it.

AMSTAND £20.64

HYTEK Mouldings Ltd, Hallcroft Industrial Estate, Retford, Notts DN22 7SS

More Modems

Mektronic Consultants is selling three modems from GEC for use with the PCW. All operate at 1200/75 (V23), have front panel controls and indicators, and are BABT approved.

The **1223** is the basic unit and doesn't require a separate power supply as it's line-powered. The **1223A** adds auto answer and auto-disconnect, either on command or loss of signal and the **1223B** has

auto call as well.

The two line-powered modems could be useful where power sockets are limited, or if you also have a portable micro. Mektronics can also provide a complete modem package, including interface, cables and software.

Mektronic also operates a communications service of its own, offering a variety of services, such as confidential or public messages,

technical enquiries, advertising and information. All services are free and the number is 061-733 7739. The standard used is Teletype, which means 8 data bits, no parity, at speeds of 300/300 and 1200/75.

MODEMS 1223/1223A/1223B/ **MODEM PACKAGE** £89.99/£143.40/£195.50/£170.20

Mektronic Consultants, Linden House, 116 Rectory Lane, Prestwich, Manchester M25 5DB. 061-798 0803

Alphabetical order

One feature that's missing from most word processing packages is an indexer. Ansible has come to the rescue of all frustrated authors.

Working with **Locoscript** Ansible **Index** allows full text marking, with a maximum of 1,500 phrases. It can cope with single words, phrases and their inversions, and it places selections in alphabetical order as it goes, listing page numbers in numerical order. If you need dummy numbers for typesetting purposes, these can be listed as zeros. A separate program can be used to verify the indexing and there's even a word count!

ANSIBLE INDEX £49.50

Ansible Information, 94 London Road, Reading, Berks RG1 5AU. 0672-62576



Keeping your contacts on file

If you have long lists of business or social contacts, **Teleadd** is a dedicated database which allows you to keep a record of names, addresses, phone numbers and important dates, such as anniversaries or details of meetings.

The program can be used to produce lists or labels.

TELEADD £21.95

Load & Run, PO Box 123, Dartford DA1 5AA. 0322-72116/73128

Secrets from St

Brides

Rural Ireland may seem an odd source of computer games, but it's from there that St Brides School has been producing witty, original adventures for some time now. Two of these are about to appear on the Amstrad, from different sources.

The **Secret of St Brides** sets you as Trixie Trinian, waking in the mysterious surroundings of an old school building, where everybody seems to think that it's still the 1930s. It's a rip-roaring yarn, atmospherically written, capturing the tone of all those old school stories.

The **Very Big Cave Adventure** is a hilarious satire on the original mainframe adventure game. It features hazards like the bull in the gully, who will only go away if you tell him you're not there, because he's a gully-bull!

THE SECRET OF ST BRIDES £TBA

Audiogenic Software Ltd, 12 Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 4AA. 0734-303663

THE VERY BIG CAVE ADVENTURE £14.95

CRL, CRL House, 9 Kings Yard, Carpenters Road, London E15 2HD. 01-985 2391

Under its spell

When we wrote the Word Processing section there was only one spelling checker available for use with **Locoscript**. Now there's competition from Computer One.

The new arrival contains a dictionary of over 60,000 words, and these can be cleverly broken down, so that you can have separate sub-dictionaries. It caters for a wide range of wildcards, letting you search for close matches and includes a lot of other special commands. If this leaves you lost in a sea of words, it also contains a free hangman game.

SPELLING CHECKER £34.95

Computer One, Science Park, Milton Road, Cambridge CB4 4BH 0223-862616

Give me joy

Another joystick interface has appeared for the games playing Joyce owner. This one has the distinction of coming from Kempston, whose joystick protocol has become a standard for the Sinclair Spectrum. We'll have to wait and see if PCW games producers support it too.

JOYSTICK INTERFACE/+ JOYSTICK £14.95/£29.95

Kempston Micro Electronics Ltd, Unit 4, Manton Lane, Bedford MK41 7HY. 0234-327544

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Now Digital Research, creators of the CP/M operating systems that make this graphics capability possible, offer you two professional graphics software packages which exploit it to the full: DR GRAPH and DR DRAW.

Data comes alive with DR GRAPH £49.95.

DR GRAPH lets you use data entered manually or created with popular spreadsheet programs such as SuperCalc to design vividly effective and professional line, bar, scatter and stick graphs, and pie and text-only charts, quickly and effortlessly.

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Annotation can be incorporated, modified, and moved anywhere you want. Different graph types can be combined within one chart, and as many as four different charts or graphs can be combined on a single page.

Ideas become art with DR DRAW £49.95.

DR DRAW lets you create organization charts. Flowcharts. Business logos. Technical diagrams. Maps. Or just about any shape or line drawing imaginable.

And each element can be enhanced or highlighted with a variety of colours and patterns.

Easy-to-follow menus let you select pre-programmed shapes – circles, bars, arcs, rectangles, polygons, and lines – or create your own pictures by modifying these shapes via mouse or keyboard. Add text anywhere you wish, selecting between a wide variety of type font styles.

Revise with the stroke of a key. Fill a shape with colour or patterns.

Enlarge or reduce it. Move it to a new location, or copy it.

Change type fonts, size, colour, and location with just a few simple keystrokes.

Zoom in for detailed work, then zoom back out

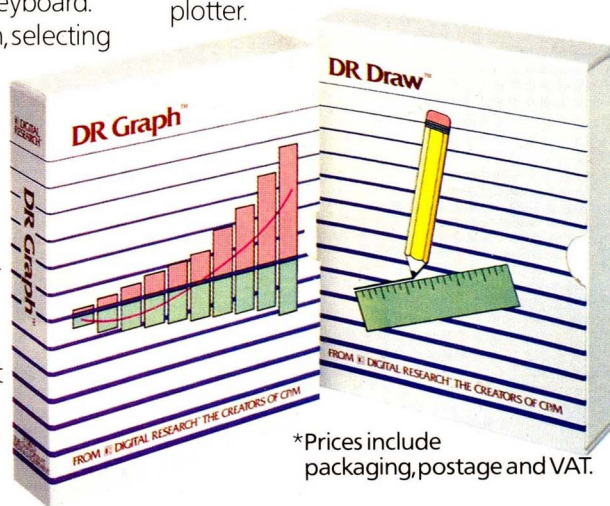
to view the entire picture. Or zoom out to fit your picture neatly in a 8½" x 11" or 11" x 8½" page layout. On extra-large drawings, you can pan the screen back and forth over each section.

See, store, print, present!

DR GRAPH and DR DRAW let you see exactly what you've designed on screen. Then store it on disk for recall or update later. Or print or plot on paper or overhead transparency film.

Either way, you've got a totally professional presentation.

Both packages run on Amstrad CPC 6128 or PCW 8256 computers with one or two disk drives. Hard copy can be produced on any GSX-driveable printer or plotter, such as Amstrad, Epson or Shinwa printers and the HP 7470A plotter.



*Prices include packaging, postage and VAT.

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