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The Complete Guide to the Amstrad PCW

8256 & 8512

An Independent Amstrad PCW Publication

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The Complete Guide to the Amstrad PCW 8256 & 8512

Using the Guide

Welcome to the update of the most comprehensive Amstrad PCW buyer's guide ever published. Inside these pages you'll find full details of products which have appeared since our first edition, plus all the old favourites (a few pages, giving information on the basics, remain the same). We've added in-depth reviews of newcomers to our survey of tried and tested top-sellers — and a special supplement on Power Software, programs which push the PCW past its limits. But whether you're a veteran or a novice user, the following points will help you get the most from the guide.

- No one program can suit every situation. Where we've looked at a product at length, 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.
- Prices shown include VAT unless otherwise stated.
- We've tried to keep all information accurate, but this is a fast-moving industry and details can change, so check with suppliers before buying.

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Designed for Amstrad PC1512, IBM PC and true IBM compatibles, Apricot PC, Amstrad CPC 6128, PCW 8256 and 8512 (Memory disk can be used) and will work with most Epson Compatible Parrallel Printers.

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There are now two kinds of Amstrad business computer, but which one is for you? We cut through the jargon to help you arrive at the right decision.

PC or PCW? Calculating Your Purchase...

Amstrad has done it again. Just as the first edition of this guide went to press, Alan Sugar announced plans to enter the PC-compatible market, undercutting almost all of his competitors. The PC1512 series has been a phenomenal success, but to many people the difference between a PC and a PCW remains unclear.

PC stands for Personal Computer, the name chosen by IBM for its revolutionary business micro. Other manufacturers began to get in on the act, and today PC is freely used as a general term, though to be accurate these machines should be called PC-compatibles or clones.

A PC differs from a PCW in its chips. While the Joyce uses the rather old-fashioned 8-bit, Z80 microprocessor, PCs are based on the more powerful 16-bit 8086 family. Put simply, this means that the heart of the machine beats at a faster pace, speeding up operations.

PC software is therefore generally more powerful than the PCW's. Spreadsheets can be larger; calculations can be carried out even faster. In addition, PC programs are often of a more recent design, taking advantage of friendly user-interfaces, such as Gem's mouse-and-icons environment which accompanies the PC1512.

PCs are also well supported on the hardware and peripherals front. All machines contain slots — for extra circuitry; to provide colour; an on-board modem or the like. 10-and 20-megabyte hard disks are available as standard on the top-of-the-line 1512s. PCs are more often used in complex networks, perhaps sharing a laser printer.

DON'T THROW JOYCE IN THE BIN YET!

By now you may be ready to throw your Joyce into the bin and rush out to purchase a PC, but wait! Though the PC1512 is incredible value, it's still more expensive than an 8256 or 8512. So you have to weigh up that extra cost and ask yourself how much you need the additional power.

For a start you'll need to buy a printer, which adds another £200 to the price for a near letter quality dot matrix model. Will you want a hard disk for additional storage and fast retrieval? If so, compare the additional cost with the price of buying a similar unit for your PCW — you'll find the details in our hardware section .

Then there's the question of software. In theory, the PC is a standard so all PC software should run on the 1512. Unfortunately certain programs require a colour monitor; other may be designed for a different clock speed (the Amstrad's processor is different from the IBM's); still others may need special chips, such as those designed to handle mathematical functions.

If your head's not already in a whirl, start doing some sums. Though Amstrad's entry into the market has brought down the price of programs, this is still a fairly prosperous area, and if you want true state-of-the-art packages, you'll pay for them, perhaps many hundreds of pounds. You'll even have to start with a word processor, which will set you back at least another £70.

The PCW awakened a dormant market for CP/M software and even before the big companies realised what was happening, small publishers were selling some excellent packages. This has resulted in prices staying low, a wide range of products and, because the 8256 and 8512 have no real competition, programs that tend to be dedicated to the machines.

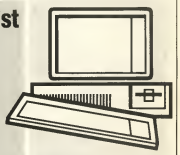
There's no problem with the type of software available either. Whether you're considering a change to an industry standard word processor, like WordStar, or just want to take time off playing games, you'll be spoilt for choice. And if you're worried that the software doesn't contain all the trendiest features, take a look at our Power Software section .

Of course, a 1512 may still be worth the extra, and if you're undecided we suggest you take a look at our sister publication, *The Buyer's Guide to the Amstrad PC*. But don't let anybody tell you that Joyce is extinct. It continues to serve its purpose extremely well, and the already wide peripherals and software base just continues to expand in every direction.

Shopping lists

In order to compare costs, we've drawn up two shopping lists, using comparable software packages wherever possible. The sub-total is for the bare essentials, but we've also considered more ambitious set-ups. As you'll see, the difference evens out as you go up-market. A first-time buyer requiring a hard disk would probably do better with a PC, but a PCW user can still expand an existing system for less than the cost of replacing all their hardware. However if you only want to run a word processor and a few standard packages, why pay the extra?

Shopping List



PCW		PC
£459	**Basic model**	£516
Included	**NLQ printer**	+£180
Included	**Word processor**	+£70
+£70	**Database**	+£99
+£50	**Spreadsheet**	+£70
£579	SUB-TOTAL	**£935**
+£115	**Second disc drive**	+£125
+£600	**20mb hard disk**	+£518
+£350 (1)	**Daisy wheel printer**	+£300
£1644	← TOTAL →	**£1878**

(1) Based on a package containing software and interface.

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.

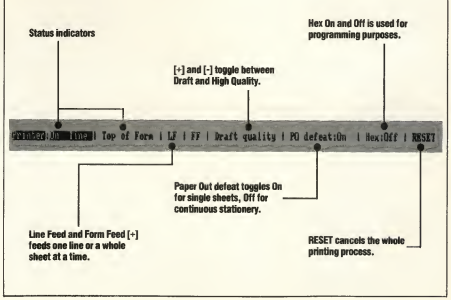
File Management

The PCW CP/M discs contain a number or 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

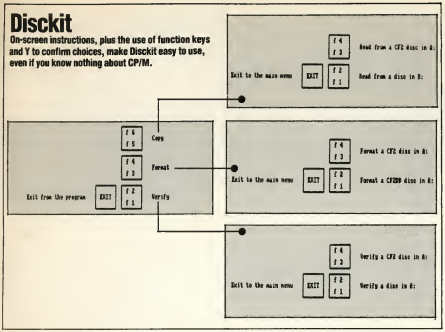
Printer control

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.



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 may 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 Rubin 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 Rubin 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.

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.

Do's and Dont's of Disc care

The 3" discs used by Amstrad are far sturdier than the traditional 5¼" 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 you 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.

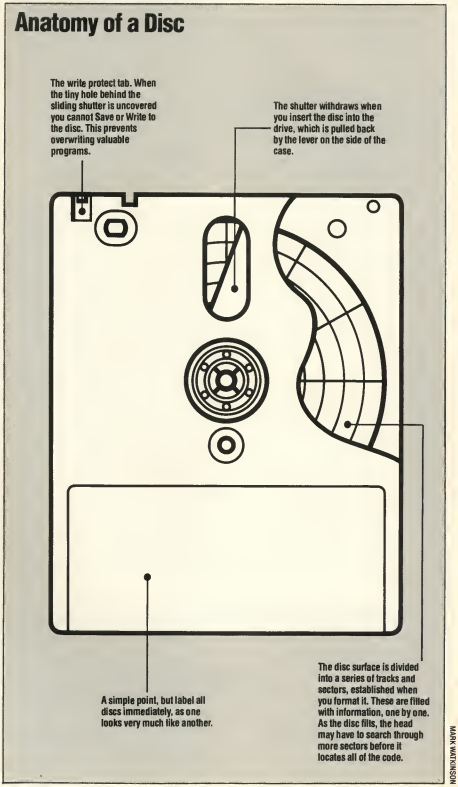
DO back up all files and keep these 'insurance' discs in a separate room if possible.

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.

Anatomy of a Disc



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Amstrad RS232/Cent. Interface	£56.50
Amstrad FD2 Second drive	£144.50
8256 Memory Upgrade 8512	£27.50

RSC SPECIAL OFFER

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RSC PCW Printer Extension £12.50
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What every work station ought to have. No more looking down — or finding important drafts. Takes very small amount of space and can be postitioned at almost any angle

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Caxton Cardbox	£45.00
Caxton Condor 1	£79.50
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Sage Retrieve	£52.50
Sage Magic Filer	£52.50
Amsoft Microword/Microfile	£39.95
*Ashton Tate — d base II	£88.50*
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Supertype (Digital)	£19.95
Database Manager (At last)	£23.50

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Micro Pro Pocket Wordstar Deluxe	£62.50
Tasman Tasword 8000*	£19.50
Tasman Tasprint 8000*	£12.50
Tasman Taspell 8000*	£14.50
Newstar Neword II	£59.50
Amor Ltd Protext	£69.50
Amor Ltd Prospell	£23.50

*All three Tasman programs together £42.50

SPREADSHEETS — PCW

Amsoft Supercalc 2	£39.95
Newstar Cracker II	£41.50
Multiplan	£57.50
Scratchpad Plus	£48.50

PCW GRAPHICS

DR Draw	*£38.95
DR Graph	*£38.95
*Both programs together	£75.00
Electric Studio Lightpen	£64.50
Electric Studio Mouse Set	£114.50
Electric Studio Video Digitiser	£92.50
AMX Mouse package	£72.50

PCW DESKTOP PUBLISHING

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Dk' Tronics £29.95
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ACCOUNTS PCW

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Sage Popular	£75.00
Sage Popular Plus	£114.00
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Camsoft Sales	£43.95
Camsoft Purchase	£43.95
Camsoft Nominal	£43.95
Camsoft Invoicing	£43.95
Camsoft Payroll	£43.95
Camsoft Account SIS	£82.50
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Map Integrated	£115.00

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Locomail	£36.50
Digital Pascal/MT +	£39.95
Digital C Basic Compiler	£39.95
Mass Easy Labeller	£32.50
Caxton Brainstorm	£38.50
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Rotate	£23.50
Planit	£21.50
Companion	£18.50

LOCOSCRIPT 2 £18.50

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WS4000	£189.00
Sage E Mail	£59.95
Sage V Data	£59.95
Sage Combo (E and V)	£89.95
Sage Chit Chat (E or V) (includes modem)	£175.00
Sage Chit Chat (E and V) (includes modem)	£209.00

DISC BOXES For CF2 Discs

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RSC 60 Lockable £14.95

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PCW Ribbons		
QT2	QT5	QT10 (or more)
£4.95 (each)	£4.50 (each)	£4.00 (each)
PCW Multistrike Ribbons		£6.95
PCW Colour Ribbons		
Blue, Brown, Red, Green		£6.95
Ribbons for other printers		

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CF2 double sided/single density	£28.50
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Very attractive set. Keep your PCW dust free. VDU KEYBOARD & PRINTER £9.95

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Graham Taylor Test Cricket	£17.50
Head & Heels	£14.95
Stargilder	£21.50

HARD DRIVE FOR YOUR PCW

10 MHD Kit	£499
20 MHD Kit	£575

PRINTERS

AMSTRAD DMP3000 £189

AMSTRAD DMP4000 *£385*

PANASONIC

Best Seller '88
KX-P1080 (80 col)

- 100 cps in Draft mode, 20 cps in NLQ
- Full character pitch feature
- Word processing commands
- Friction feed and variable tractor are standard
- Operator accessible print mode switch.

(std./Pgm., NLQ, Comp)
Special price for Readers £169.00

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Epson LQ1000 180 CPS/60NLQ/132 COL	£699.00
Epson EX800 300 CPS/50NLQ/80 COL	£449.00
Epson EX1000 300 CPS/50NLQ/136 COL	£549.00
Epson FX800 160 CPS/32NLQ/80 COL	£350.00
Epson FX1000 160 CPS/32NLQ/132 COL	£450.00
Epson LQ2500 136 COL/270CPS/90 NLQ	£845.00

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MP-200 Fast 200 CPS 132 COL	£299.00
MP-201 Fast 200 CPS 132 COL	£355.00

DAISYWHEEL PRINTERS

Juki 6100 20 CPS	£295.00
PANASONIC KX-3131 120 COL — 17 CPS — Super Printer	£275.00

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PCW Printer Cable	£9.50
Epson LX86 Tractor Feeder	£23.00
Epson LX86 Sheet Feeder	£63.00
Juki 6100 Tractor Feeder	£149.00
Juki 6100 Sheet Feeder	£269.00
Panasonic P3131 Sheet Feeder	£225.00
Panasonic P3131 Tractor Feeder	£100.00
Epson LQ800 Tractor Feeder	£45.00
Epson LQ1000 Tractor Feeder	£57.00
LQ800 Sheet Feeder	£155.00
LQ1000 Sheet Feeder	£185.00
Espon Ex-Series Colour Upgrade	£62.00

K.D. PRINTER STAND

£34.95

TPS-25: K.D. Printer stand for 80 column printers. Paper feeds from underneath and the dial adjustable paper feed plate guides the paper onto the collection rack for neat stacking. Sturdy steel and plastic construction with space saving design.

PRINTER PAPER

2000 Sheets 11"x9.5" (fan fold)	£16.50
Exact A4 size — 2000	£24.50
1000 Adhesive Labels 1 across	£6.95
2000 Adhesive 2 across	£9.95
132 col. Paper (1000)	£24.50

MAY/JUNE 1988

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 work station

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.

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'.

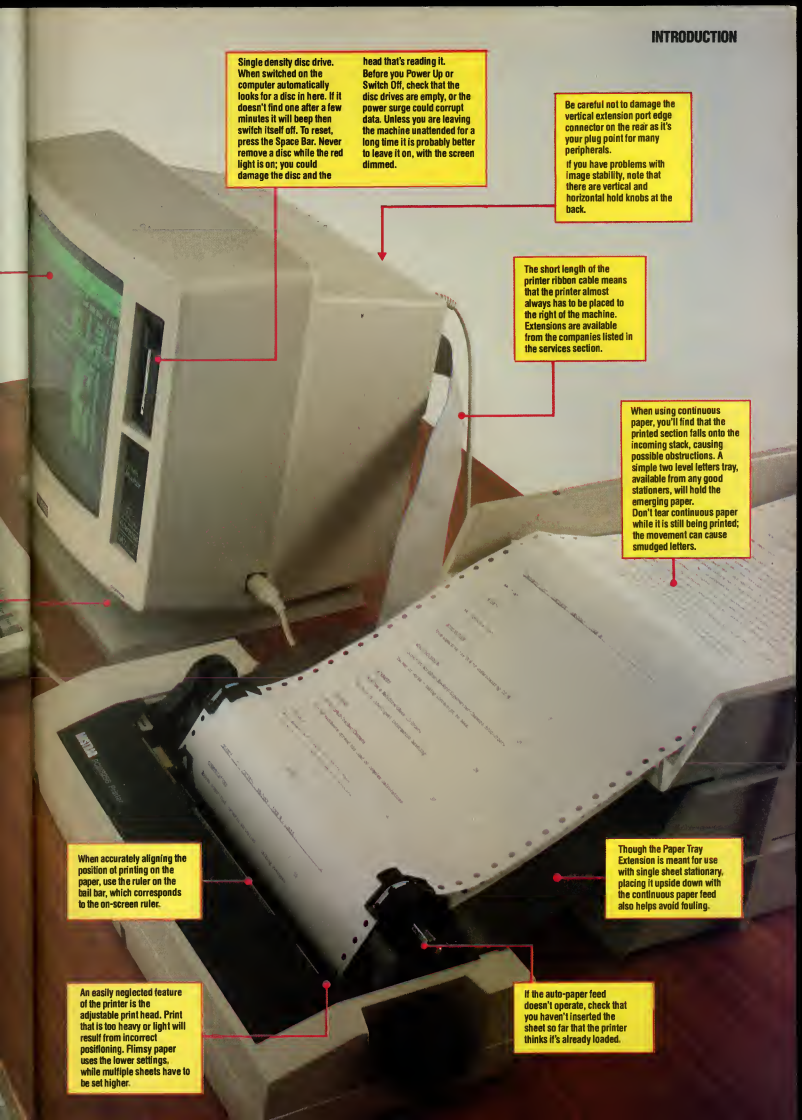
Do take time setting up your Amstrad, because a little thought at the start can save an awful lot of inconvenience later. Even before you unpack, clear your workspace or vital components will vanish into a pile of polystyrene. Also note that Amstrad advises you to keep the packaging in case you have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

CHRIS STEVENS



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.

Sue Townsend

THE GROWING PAINS OF ADRIAN MOLE

PROGRAM BY **LEVEL 9**

Virgin Games presents the computer version of **"The Growing Pains of Adrian Mole".** Based on Sue Townsend's best-selling book, and the popular TV series, the game allows you to help Adrian with day-to-day decisions. It's a text-based game with beautiful illustrations and your aim is to make Adrian as popular as possible through your answers to multiple-choice questions. This four part game covers 18 months in the life of aspiring intellectual, Adrian, and is available for 7 different computers.

'BBC B version is not illustrated.

Produced by Mosaic Publishing Ltd.

The Growing Pains of Adrian Mole is available from all good software stockists. If you have trouble finding it you can buy directly from Virgin Games. **Please encircle the software you require** and send this tear-off to **Virgin Games Mail Order, 2-4 Vernon Yard, Portobello Road, London W11 2DX.** Make cheques or crossed postal orders payable to Virgin Games Ltd. Please do not post notes or coins.

COMPUTER FORMAT	PRICE	RELEASE DATE
Spectrum 48/128 CASS	£9.95	10 February 1987
Commodore 64/128 CASS	£9.95	10 February 1987
Amstrad CPC CASS	£9.95	10 February 1987
BBC B CASS	£9.95	17 February 1987
MSX 64k CASS	£9.95	17 February 1987
Atari 400/800XL/XE CASS	£9.95	17 February 1987
Amstrad CPC 6128 DISC & PCW 8256/8512 DISC	£14.95	17 February 1987

Name

Address

Money Enclosed

Locoscript may be free but it has its limitations. We consider why more and more PCW owners are paying to upgrade their software. And we initiate you into the mysteries of WYSIWYG.

The price of processing

Word processing used to be a complex, expensive affair. You had to buy a computer, select software to suit your requirements, find a printer which was compatible with everything else, and hope that you'd made the right decision.

Then along came Amstrad with an all-in, unified package which included free word processing software at an attractive price tag. But that didn't stop companies such as Micro Pro, New Star and Arnor from producing word processing of their own.

If you've ever used a word processor other than **Locoscript**, their thinking becomes obvious. The PCW's own program aims to be accessible to the total newcomer to word processors, and it succeeds. It's a WYSIWYG (What You See Is What You Get) system, which displays every change and effect on screen immediately. You don't have to wait until the text is printed to see how it looks.

OUT FOR A SLOW SCROLL

But though this approach is ideal for the novice, it eats into the PCW's memory, and because the computers constantly updating the screen as well as manipulating text, **Locoscript** can be slow to use.

All that scrolling may reassure beginners that their letter is actually 'somewhere in there', but when you have to wait for the cursor to move to the fifth chapter of your novel before you can start typing you begin to look for an alternative.

Also, because it has to be easy to use, the original **Locoscript** omits certain important features. Every function is only one or two key presses away, which is fine at first, but if you want to use a word processor in a business environment, you're likely to want mail-merging facilities and so on.

Locomotive Software itself recognises **Locoscript**'s limitations and has produced a mail-merge program and a spelling checker. Its latest release is the completely upgraded **Locoscript 2**. But if you are considering an alternative, you need to balance your familiarity with **Locoscript**'s commands against other possible problem areas, which will depend on how you want to use the program.

Locoscript doesn't run under CP/M and it stores documents in a unique form. That means it's often not file-compatible with other programs, unless they've been written specifically to work with it, like **Locomail** or **Prospell**. The only way round this is to produce an ASCII file. Other word processors avoid this problem.

A document written with **Pocket Word** **Star** on one computer can be edited on many different systems if they also run this standard package. Compatibility also extends to other types of programs. For example, financial grids can be produced on the **SuperCalc** spreadsheet then printed out as part of a **SuperWriter** document.

Alternative printers also pose a problem for original **Locoscript** users; you can only use Amstrad's. **Locoscript 2** contains a printer driver package though, which will allow you to use Epsons, Seikoshas, Brothers and so on.

People who only use their PCW to write short documents already have an excellent, dedicated program for free. But if you need something more ambitious, you must be prepared to pay for it, whether it's **Locoscript 2** or one of the other packages in the pages that follow. As with everything in life, you get what you pay for, even if it's from Amstrad.

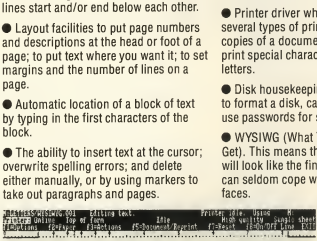
Word perfect

The bare essentials of a word processor allow you to enter text, format it in as you want, store and retrieve it, and finally to print out an error-free document. Other useful features are:

- Quick access to any part of a current document.
- Tabulation, to fix the position of columns.
- Left and right Justification, so that all lines start and/or end below each other.
- Layout facilities to put page numbers and descriptions at the head or foot of a page; to put text where you want it; to set margins and the number of lines on a page.
- Automatic location of a block of text by typing in the first characters of the block.
- The ability to insert text at the cursor; overwrite spelling errors; and delete either manually, or by using markers to take out paragraphs and pages.
- Paste, to take a block of text from one document and insert it at a specified position in the same or another document.

Textual effects such as bold, italic, double height and proportional spacing, so that the space allowed for a letter depends on its width.

- Spelling Checker and word count.
- Mail merge, to make individualised copies of a general letter by inserting a name and address from a mailing list.
- Printer driver which allows the use of several types of printer; to make several copies of a document at once; and to print special characters such as accented letters.
- Disk housekeeping, which allows you to format a disk, categorise files, and to use passwords for security purposes.
- WYSIWG (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.



The power of WYSIWYG. Left, what you get on your screen; below, the finished text reproducing exactly the on-screen format.

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 dislay the printing codes that indicate where such effects are being used.

Locoscript was a free ticket to word processing but will trainspotters express favourable opinions about Locomotive's new, speedier version?

Locoscript 2

Many people reading this will already be acquainted with the PCW's dedicated word processor. It's a good, menu-driven program, only fet down by a few annoying characteristics, such as the apparently endless scrolling whenever a document becomes longer than a handful of pages.

Set against that, **Locoscript** is easy to learn; makes full use of the PCW's special keys, such as Cut, Copy and Paste; has an excellent system of templates for standard types of document; offers a wide range of foreign characters; and with the addition of **LocoSpell** and **LocoMail** offers most of the features that you could ever ask of such a program.

In fact, because it comes free with the machine, it's easy to ignore **Locoscript**'s strengths and to feel cheated when you're required to pay for its enhancements. **Locoscript 2** will cost yet another twenty pounds, but don't think that what you're buying is simply a new version. This is a complete reworking of the system, smoothing out many of those irritating quirks.

You don't have to learn a new piece of software though. An experienced **Locoscript** user will have to get accustomed to the reorganised menus, but all changes are in the interests of clarity.

The function-key commands now have a more logical layout and friendlier prompts, so that instead of the rather cryptic 'Keep lines together above ??' you're asked 'Keep current line with: ?? lines above' if you want to avoid a page break in the middle of an address, say. It's a small point, but this general spring clean should make word processing even easier for the novice and old hand alike.

There are more obvious changes in the creation of base layouts for templates. Even experienced users, with the manual open by their sides, can find this powerful feature difficult to exploit to the full. In the new **Locoscript** there's no more of those endless nested menus. Every change to a layout can be made with the minimum number of keystrokes, never moving more than one step from the editing screen.

Another major bugbear of the original **Locoscript** was that the only way to move round a document was by scrolling through the text. This tedious process was compounded by the fact that the Save and Continue command returned you to the head of the file. There could be few greater disincentives to adopting the vital practice of saving your copy at regular intervals than the knowledge that you'd have time to make a cup of tea while you did so.

But Locomotive has listened to users' complaints and Save and Continue now returns you to the point you left off working. You can also move to any page within a document, simply by typing in a page number, or automatically go to its end by entering a high number. Though there's still a short wait for disc accessing, it's nowhere near so bad as it used to be.

Another feature that could catch you out with **Locoscript 1**, though this also applies to many other programs, is that once you start work, disc management is extremely limited. **Locoscript 2** has added a clever feature that allows you to format or copy discs from within the program, saving the day the one time you suddenly run out of space and haven't got a floppy prepared.

There are a lot of other embellishments too, including the extended character set which, Locomotive claims, includes every foreign letter they could find, including Greek and Cyrillic alphabets, plus scientific symbols.

Though **Locoscript 2** takes up rather more memory than the original, you can now create documents as separate files which are then linked together at the printing stage, complete with the correct pagination. If you've ever lost a document that you've written on drive M: because you forgot to transfer it to disc, you'll be relieved to hear that there's a new warning prompt for this situation.

Add to this a new, clearer manual, complete with an excellent Quick Reference guide to various tasks, and it's fair to say that a last **Locoscript** has fully realised its potential. The only people who will have problems are 8256 owners who want to use **LocoSpell** and **LocoMail** too; they won't fit into the unexpanded memory. Apart from that, £19.95 is a small price to ask for an incredible upgrade.

FACTS BOX

TITLE
LOCOSCRIPT 2

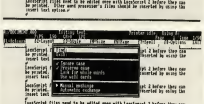
SUPPLIER
Locomotive

PRICE
£19.95

Locoscript in motion

Modifications to the Disc Management screen mean that Disc Change moves to f7, to allow the consistent use of f1 for Action throughout the program. Here it's been used to access a useful new feature which lets you look at what your blocks and phrases are. Saving and loading them is now much smoother too.

Locoscript 2's layout editing is incredibly easy. The cursor appears on the ruler and tabs and margins can be dragged around as well as being set with the function keys. The Clear All Tabs option will be useful when you make radical changes to a layout.



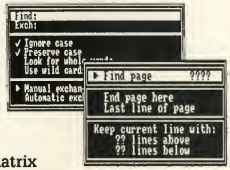
In the Editing mode, one of the important changes is to Find and Exchange. The procedures are now much more sophisticated and can locate words in upper or lower case, or you can use 'wildcards' to stand in for letters when you're unsure of the exact word that you're seeking. Note also that LocoSpell has been given its own function key.

Once you're ready to print there's no need to go into Printer mode to change from draft to high quality. In fact you can even give names to the templates for your paper sizes, so that you can simply select A4. Locoscript 2 also allows you to make multiple copies of a document.

LocoScript 2

Locomotive Software's faster, more flexible word processor for the Amstrad PCW8256 and 8512

LocoScript 2 gives you:

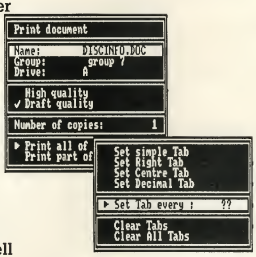


Quicker Use

- Faster movement around documents
- Jump direct to a page
- Save and Continue from last position

Better Results

- Choice of printers – built in/daisywheel/matrix
- New characters – including modern Greek/Cyrillic
- Extra Scientific and other symbols
- Accents can be used with any character



Easier Operation

- Multiple printed copies
- Disc copying direct from LocoScript
- Completely rewritten handbook – with feature checklist and glossary
- New improved Find and Exchange

Compatibility

- The familiar feel of LocoScript menus
- Reads existing LocoScript documents
- Free upgrade of LocoMail and LocoSpell

At just £19.95 can you afford not to have LocoScript 2?

LocoScript 2 is available by mail order direct from Locomotive Systems Limited. It costs £19.95 including VAT and postage within the UK. LocoScript 2 comes as a complete package including disc with software and examples plus a full user guide. For details and full ordering information contact :

LOCOMOTIVE SYSTEMS

Allen Court, Dorking, Surrey RH4 1YL
(0306) 887902

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.

FACTS BOX

TITLE
POCKET WORDSTAR

PRICE
£49.99

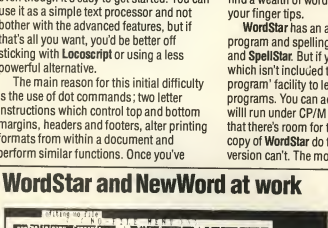
PUBLISHER
MicroPro

TITLE
NEWWORD II

PRICE
£69.00

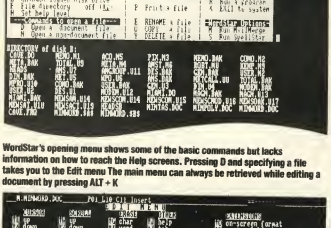
PUBLISHER
New Star

WordStar and NewWord at work

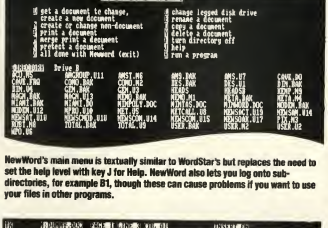


WordStar's opening menu shows some of the basic commands but lacks information on how to reach the Help screens. Pressing D and specifying a file takes you to the Edit menu. The main menu can always be retrieved while editing a document by pressing ALT + K

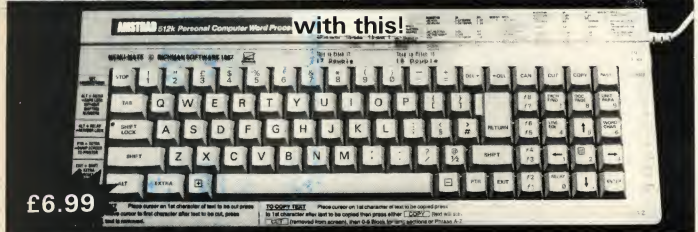
NewWord's main menu is textually similar to WordStar's but replaces the need to set the help level with key J for help. NewWord also lets you log onto sub-directories, for example B1, though these can cause problems if you want to use your files in other programs.



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'.



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.



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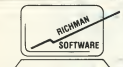

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Arnor claims its complete word-processing system is the most comprehensive package you can buy. We put it to the pro test!

Protext

Following the success of the **Prospell** spelling checker, Arnor has converted its complete word-processing suite, **Protext**, for the PCW, after achieving success on the other Amstrad computers.

Protext is a professional-standard text-editing and manipulation tool with a built-in word-count and spelling-checker.

There's also a range of useful disk utilities, accessible from within the program. This breadth of coverage makes **Protext** one of the main contenders for the title of best alternative to **Locoscript**.

Running under CP/M, **Protext** comes on the 3" disc with programs on one side, **Prospell** dictionary on the other. There's also a very comprehensive manual in an A5 ring binder.

Installation couldn't be easier. There's no need to use Pip; just put the master disk in your drive, type 'protext> make-pcm', and a bootable copy is automatically produced, containing the program, plus the requisite CP/M files.

Word processing is quite unlike **Locoscript** in basic design philosophy. Whereas the latter might be more suitable for the true beginner, **Protext** is closer to **Wordstar**, accessing commands through to multiple key presses. Although initially harder to use, once you become familiar with it, it's much faster in everyday use.

To help out, there's a short tutor-instruction document on the disk, and the program itself has extensive help facilities. Whether you feel confident enough to use a system such as this will probably be the deciding factor when thinking about upgrading to **Protext**.

Rather than using a disk-manager-style screen, all loading, saving and printing functions are accessed via **Protext**'s Command Mode. A disadvantage of this is that you don't get the constant disk directory of **Locoscript**, but most people shouldn't find this a major handicap.

Text manipulation has all the features you'd expect from a professional word processor: full headers and footers are supported, there's block manipulaton, search and replace, etc, and all are relatively easy to use. You'll also find a significant increase in speed over **Locoscript** when working with text on screen.

For those of us who admit to occasional orthographic fallibility, the spelling checker is a real life saver. It's called up from the Command Mode by typing 'SM' (for Spelling Menu). The menu now appears and single keys make selections.

But for the simple checks, just type 'Spell' in Command Mode.

Like all good spelling checkers, **Protext** allows you to create your own dictionaries of specialist words that you yourself use quite often, but which do not appear in the standard dictionary.

Mail merging with **Protext** requires nothing more than a half hour reading the relevant section of the manual. Facilities range from the simple kind of work that might be used to run a club or the like, to the use of conditional logic feature for complex mailshots.

Protext can import text from any ASCII file — as long as the data is stored in a suitable format — and again, the manual is very helpful in this area. There's also a conversion program to help if some systems, such as **Wordstar**, prove troublesome.

For a newcomer to the PCW, or an existing user who has grown dissatisfied with **Locoscript**, **Protext** offers a more than viable alternative, with its comprehensive range of features representing great value for money.

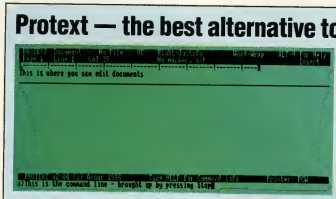
FACTS BOX

TITLE
PROTEXT

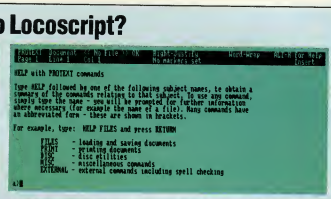
PUBLISHER
Arnor

PRICE
£79.95

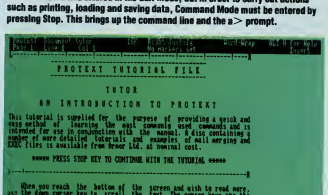
Protext — the best alternative to Locoscript?



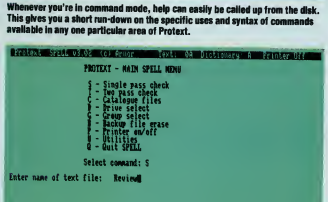
Text is entered and altered in the Edit Mode, but in order to carry out actions such as printing, loading and saving data, Command Mode must be entered by pressing Stop. This brings up the command line and the a> prompt.



Whenever you're in command mode, help can easily be called up from the disk. This gives you a short run-down on the specific uses and syntax of commands available in any one particular area of Protext.



As well as more than comprehensive documentation, Protext has a short tutorial file on the disk, so you can work out what's going on in the early stages.



Spelling checkers are essential for the fallible. Prospell is more versatile than many. It supports multiple dictionaries and can even help you out with your crossword! Don't worry if this main spell menu looks daunting; all is comprehensively explained in the manual.

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SuperWriter has developed an enthusiastic following, and not just because it's compatible with the **SuperCalc** spreadsheet.

SuperWriter

All of **SuperWriter**'s facilities are accessed via hierarchical menus and their logical structure allows even a total novice to start work immediately. In the event of a problem, help is available at the press of a key.

The package is both powerful and comprehensive. Selections are made from the main menus with the Space Bar and Return. Exit serves as an Escape key which always returns to the previous menu level, so a wrong selection is never disastrous.

Editing a document, which may be stored on the M:, A: or B: drive, uses **SuperWriter**'s workspace. For a new document, you enter its name and possibly drive identification, then your name and the date — a useful feature for keeping a close record of the text. The history of the document's creation can be amended or viewed via the main menu's Utility option.

Pressing Exit during editing produces a line of single-lettter options. They access a standard selection of word-processor facilities, including find, replace, block mark, block move, block delete and copy. This menu also lets you save **SuperWriter**'s workspace to disk or discard it, much in the same way that Locosript provides an Abandon Edit choice.

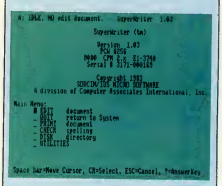
Documents which have been saved to disk may be printed while other files are edited. The Utility sub-menu also allows files to be displayed to look at their contents, included in other documents, deleted or renamed.

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.

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.

Writing super



The opening menu. 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 actually editing them. Utilities accesses file-handling routines, allows alterations to dictionaries and document histories and lets you use Supercalc directly.

FACTS BOX

TITLE
SUPERWRITER

PRICE
Software City

PUBLISHER
£49.95

Simplicity of operation combined with several original features mark out **Tasword 8000**, but is it a real alternative to **Locoscript**?

Tasword 8000

If you want a program which is pleasant to use and supports justification, text centering, character, word and block deletion, **Tasword** could be ideal. It features a comprehensive Help screen which is cluttered but has the advantage of providing everything you need to know at one go, making it easier to use the program's full facilities.

It's also supported by a number of print and display utilities which allow you to print parts of your text in different typefaces. While the program comes with two fonts, **Tasprint** (£14.90) provides eight further alternatives. The various typefaces can't be mixed with normal print on the same line though.

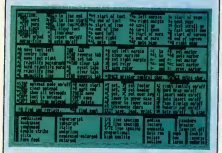
There's also a simple but effective data-merge facility allowing you to insert information from a database to produce mailing lists and so on. It must be seen as one of the main attractions of **Tasword**. You indicate variables, and names are inserted automatically, or you can enter them by hand. This facility can be used with the high-powered database, **dBase II**.

Tasword also 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 unique enhancements.

Tasword's notepads can be used for reminders unconnected with the current document; or if you want to work on something which will be inserted towards the end of the document, you can use a notepad and plug it in later.

Tasword is inexpensive and has found a niche in the market. It's missing certain functions, like Search and Replace, but Tasman is constantly expanding the system; the latest addition is the **Tas-spell** spelling checker. Whether you use **Tasword** as an addition to or instead of **Locoscript** is down to personal taste, but there's no denying its attractions.

Tas-ty wording



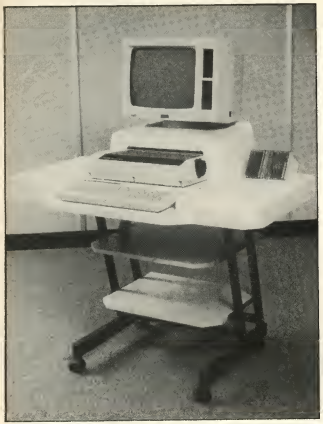
Pressing stop during editing gives you the full Tasword Help screen, which is cluttered but highly informative. During normal editing a window onto the Help screen appears at the top of the screen. You scroll through it with the plus and minus keys.

FACTS BOX

TITLE
TASWORD 8000

PRICE
Tasman

PUBLISHER
£24.95



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The **Microword** word processor comes complete with its own database, **Microfile** and the **Flexilabel** label printer, making it a possible system for anybody primarily needing mailmerge.

While **Microword** is rather basic, it's simple to use, and balances **WordStar**-style dot commands with dedicated function keys. Features include instant cursor movement; automatic text indentation; multiple-copy printing; and automatic sorting of columns of figures in ascending or descending order. It produces a number of typefaces, including Italic, Pica and Elite and can be used with a variety of printers.

Microfile is a single-file-handling system which uses cursor-selected menus. You can have up to 20 fields of 80 characters with up to 4 key fields of 20 characters each. Field types are text, numeric, calculated and date in UK and US formats. Selection includes the useful 'equal to' and 'less than/greater than' facility. File import and export is in ASCII, and files can also be exported in **NewWord** format. The **Lock-It** encryption program means that all information can be protected.

Though simple label printing is available directly from **Microfile**, more sophisticated effects such as multiple copies of the same label or different print styles are available with **Flexilabel**. Lines can be centred and blank lines are removed to produce clear, attractive results.

Microspread, the system's dedicated spreadsheet, completes the package, allowing you to combine text and figures on the same printout. If these are the facilities that you need, the **Micro Collection** is an easy-to-use, highly competent package at a budget price.

WordStar variations

POCKET PROSTAR SUITE

Davis Rubin Associates
£149

We've already covered **Pocket WordStar** in detail, and if you've decided that this industry standard is for you, you might like to know that it's also available en suite with the other Pocket products.

These are the **CalcStar** spreadsheet and **InfoStar** database. All data can be moved between these units. Davis Rubin Associates has configured all the software to take advantage of the PCW keyboard and provides full support for the system, including the excellent book, *Dynamics of ProStar* by Jane Davis.

POCKET WORDSTAR DE LUXE

Micro Pro
£69.95

As **Pocket WordStar**, but with the addition of a spelling checker.

POLYPROGRAMS

NewStar
£59.90

Polyword, **Polyprint**, **Polymail**'s names give a fair indication of their uses and while none of them is outstandingly original, they could be useful for a very small business, perhaps to complement **Locoscript** itself.

Polyword, the word processor, uses **Locoscript**'s control keys and a series of small menus. **Locoscript** users will have few problems. It's not earth shattering, but it forms a stable base for the suite.

Polyprint is menu driven and can produce 25 alternative faces on a dot matrix printer. Nine fonts are supplied with the package, and the others are available.

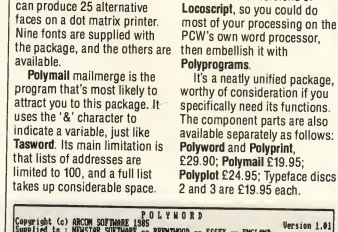
Polymail mailmerge is the program that's most likely to attract you to this package. It uses the '&' character to indicate a variable, just like **Tasword**. Its main limitation is that lists of addresses are limited to 100, and a full list takes up considerable space.

But it's well suited to smallish tasks.

Finally, **Polyplot** is a business-graph program, capable of producing bar, line and pie charts with four sets of data on the same sets of axes, with up to 20 points for each set. You'll have to enter data manually and not import it from a spreadsheet, but results can be used to illustrate **Polyword** documents, so it's suitable for simple reports.

The great plus for **Polyprograms** is its use of ASCII files. It can manipulate data from later versions of **Locoscript**, so you could do most of your processing on the PCW's own word processor, then embellish it with **Polyprograms**.

It's a neatly unified package, worthy of consideration if you specifically need its functions. The component parts are also available separately as follows: **Polyword** and **Polyprint**, £29.90; **Polymail** £19.95; **Polyplot** £24.95; Typeface discs 2 and 3 are £19.95 each.



Spelling checkers

LOCOSPELL

Amsoft/Locomotive
£39.95

The official **Locoscript** spelling checker is more costly than its rivals, but it's also extremely convenient as it operates from inside the program, via the Modes menu on f7.

Locospell comes with two dictionaries, both compiled by Longman; the 32,000-word standard is loaded with the Start-of-Day disc but the B side of the disc contains a 78,000-word version.

The only problems with **Locospell** are that it's rather slow and 8256 owners will find it rather heavy on memory.

SPELLING CHECKER

Computer One
£34.95

Though the Computer One program runs under CP/M, it can analyse a **Locoscript** document directly from the file disc, without the need to convert it into ASCII.

It comes with a 64,000-word dictionary and can handle multiple dictionaries. Sophisticated use of 'wildcards', for unknown letters, means that it can be used to suggest spellings, though crossword addicts will find this feature useful too.

PROSPELL

Arnor
£29.95

Arnor's **Prospell** was the first **Locoscript**-compatible spelling checker and though it's now available as part of the **Protext** word-processor package, you should still consider it.

Documents must be in ASCII format for **Prospell** to compare with its 32,000 word dictionary.

TAX-SPELL 8000

Tasman
£16.50

For use with the **Tasword 8000** word processor.

MEDSPELL

Medstat
£19.95

These specialist dictionaries add 10,900 and 16,500 specialist medical, scientific and anatomical vocabularies to **Locospell**, and are available with the spelling checker itself for £54.95.

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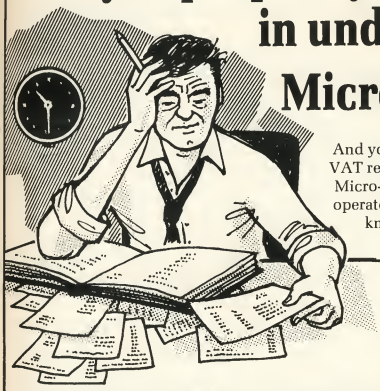

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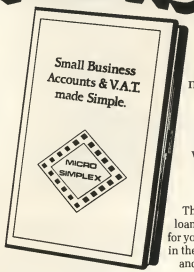

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Amsoft/Locomotive
£39.95
As with **Locospell**, this integrates with the standard **Locoscript** menus. You create a new start-of-day disc containing the additional software, then create the letter with a new enable command, +Mail.

Insertions can be typed during editing or merged from a data file, created with the **Locoscript** editor, from the disc-management screen. **Locomail** also includes a label-printing facility.

QMAIL
Logicom
£29.95
This **Locoscript**-compatible mailmerge can cope with the name, address and five extra fields in its database, to allow for any additional details.

MULTILINK MAILING LISTS
Multilink
£19.95
A budget-priced mailmerge program allowing up to 900 entries per single-density disc and five user-defined selection codes. It also includes a label-printing facility.

MULTI-MAIL PLUS
Tiger
£19.95
As well as containing mailmerge and label-printing programs, **Multi-Mail Plus** adds a straight facility to produce multiple copies of a document, and a line-and-word-count facility.

DATAFLOW III AND MAILFLOW III
Micro Power
£49.95
See Database section (pages 14-16).

NEWMAIL
NewStar
£29.95
For use with **NewWord** or compatible program, this is used directly from the main menu, and provides comprehensive mailmerge, for everything from creating a mailing list of up to 18 fields, through keeping it in shape.

Labellers

EASY LABELLER
MASS
£34.44
A command-driven label printer which aims for speed and ease of use. Sorting is automatic over 99 categories of information and date-stamping, serial numbering and message-coding are all available. Any size of label can be created and various typefaces are available. Up to 1,000 labels can be stored.

LABELWRITER
Wight
£17.25
For users of Epson-compatible printers, **Labelwriter** provides a variety of facilities including logos, typing effects and serial numbers. You enter data in reply to a number of prompts and the program will then generate as many copies as you wish.

Printing effects

TASPRINT 8000
Tasman
£14.95
These extra **Tasword** 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, they could be better suited to producing headlines than general text.

SUPERTYPE
Digita
£24.95
Formerly **FontGem**, this easy-to-use, upgraded typeface utility is fully compatible with **Locoscript** and its peripheral programs. It provides eight fonts including four Business faces, or if you're feeling more extravagant, you could try Outline or Olde English. All are available in NLQ, bold, italic and enlarged forms.

SIGNWRITER
Wight
£49.95
A package dedicated to producing high-quality, large-scale effects with the PCW printer, **Signwriter** contains a sans-serif font and includes capabilities for most foreign characters.

General utilities

ANSIBLECHECK
Ansible
£19.50
Working directly with **Locoscript** files, this single-command program claims total accuracy in its word count.

LSPRINT
Bradway
£19.95
If you use an alternative printer with **Locoscript** you probably find yourself wasting time converting files to ASCII. **Lsprint** eliminates that step and supports all printing effects, subject to your printer's daisywheels. It also includes a word count.

EPSTAR
Wight
£17.25
Epstar allows **Wordstar** users to use the full range of Epson dot matrix printer facilities.

NEWWORD
NewStar
£29.95 and £14.95
These programs are intended for **NewWord** users, but can be used with any other **NewWord**-style files. **NewTag**, **NewKey** (£14.95 each) and **NewFile** (£29.95) are primarily file managers, allowing you to add identity text to **NewWord** files, search them for keyboards and produce handle files, producing a comprehensive directory. **Spool** (£14.95) allows you to continue using **NewWord** while printing.

CONTACTS

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Victoria House
PO Box 10
Sunderland SR1 3PY
091-567 3395

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94 London Road
Reading
Berkshire RG1 5AV
0672-62576

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Croydon CR0 2JF
01-684 8069

Bradway Software
33 Conalan Avenue
Sheffield S17 4PG

Computer One
Science Park
Milton Road
Cambridge CB4 4BH
0223-862616

Davis Rubin Associates
1 Canonbourne
Weston Sub Edge
Chipping Campden
Glos GL55 6DH
0386-841181

Digita International
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Barns Road
Budleigh Salterton
Devon EX9 6HJ
03954-5059

Locomotive Software
Allen Court
Dorking
Surrey RH4 1YL
0306-887902

MASS Business Systems
43 Wymer Street
Norwich NR2 4BR
0603-630768

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Maid Marian Way
Nottingham NG1 6BH
0602-411120

MicroPro International
Haygarth House
28/31 High Street
Wimbledon Village
London SW19 5BY
01-879 1122

Micro Power
Northwood House
North Street
Leeds LS7 2AA
0532-458800

Multilink Network Systems
Monkilver House
Rose Mount
Oxton
Birkenhead L43 5SW
051-652 5371

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

Logicom
Proteus Computing
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

Tiger Software
66 St Michael's Lane
St Michael's Trading Estate
Bridport
Dorset DT6 3R8
0308-27691

Trinity Business Systems
52 Queens Road
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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.

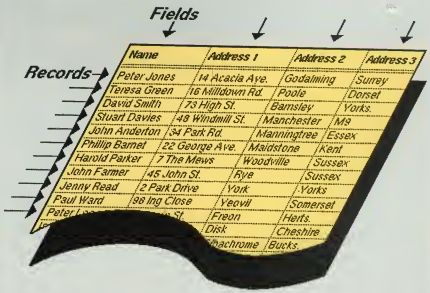
They are fine for many tasks, where the computer is simply used for storing and manipulating a list of similar items. But more sophisticated applications require a program that can access several separate but related files at once. These are called relational databases.

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?



IAN McDONELL

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**.

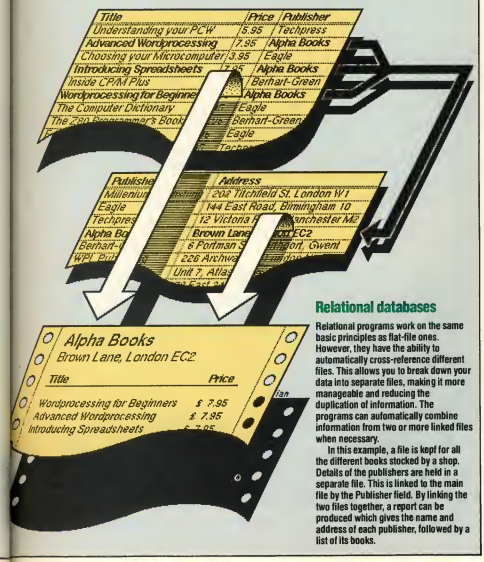
On the whole, databases are best suited to filing information which is regular and predictable though. Fortunately, with a little thought, it's possible to organise most of your files this way.

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

Cardbox is billed by Caxton as an Electronic Card Index. But though this veteran is versatile in terms of size it lacks some friendly features.

Playing with Cardbox

If there's one thing that can't be questioned about **Cardbox**, it's its size. It can create and manipulate a file containing up to 65,500 records, spanning up to 16Mb — and that's a lot of data! Each record may contain up to 1,404 characters and 26 separate fields, and any words within these can be indexed, or specifically designated as words which the program will search and sort if asked.

The sheer magnitude of the package betrays its background: **Cardbox** is a tried and tested CP/M business program, vintage 1982. This has its good and bad points. **Cardbox** has already been through the mill and is pretty much guaranteed bug-free by now. But it hasn't been tailored specifically to the PCW and it's missed out on five years of program-design technique and philosophy.

First of all, flicking through the 40-page manual, you find that only two of its pages, right at the very beginning, apply specifically to Amstrad users. They deal with how to back-up the master disk. From then on you only get generalities.

There are annoying features, like reference to Control and Escape keys which are designated Alt and Exit on the PCW. There's nothing inaccurate, naturally, but it hardly fosters the idea that the author has written to exploit the strengths of your particular machine.

JUMPING THE HURDLES

After making the backup disk, your session starts by loading CP/M and simply typing '**Cardbox**'. Once it's up and running there are three pages in the manual that you'll have to ignore. These refer to setting up a file which will pass the parameters of your terminal to the program.

Actually, Caxton has already provided you with one, set up for the PCW, but doesn't mention it in the documentation. In fact, the Generator program referred to in the text doesn't even appear on the disk directory. This could be very confusing for an inexperienced user.

After that hurdle, the first five chapters of the manual take you through fairly comprehensive, worked examples of **Cardbox**'s functions, using sample format and data files which are already stored on the disk.

All the functions you would expect are included. You start by designing and creating your own 'cards'. When you're satisfied, you can search through a file, using specified search criteria. However, it lacks the ability to use the 'less than', 'greater than' or 'equal' signs which can be very inconvenient.

Files can be printed to hard copy, with a choice between fan fold, tractor feed, continuous stationery or single sheet, which is a good feature. Or you can print to disk in ASCII format, 'Wordstar' – type format or **Cardbox**'s own internal format, used for transferring data between files. The ability to create ASCII and Wordstar files means that your database can be used for mail-merge purposes, but you'll need a separate program to handle the job.

Two notable features of the package are the ability to analyse your files for efficiency of storage, and the comprehensive data-recovery section that allows you to 'repair' files if your disk becomes slightly corrupted. But for a program with such a strong business background, I'd have expected some form of data protection, to keep precious data from prying eyes: no password facilities are included in the system though.

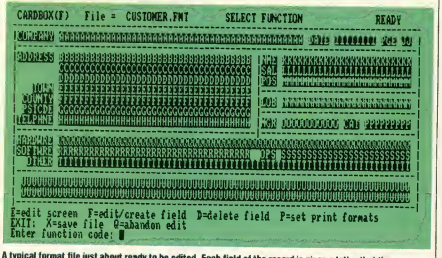
Cardbox isn't a bad program. It's tried and tested, and registered users can get full technical back-up from **Caxton**, which should sort out the problems with the mildly obtuse manual. But it does show its age, even in something as straightforward as screen presentation. Certainly, for domestic use, users would be well advised to look at more contemporary offerings, before making any decisions.

FACTS BOX

TITLE	**CARDBOX**
PUBLISHER	**Caxton**
PRICE	**£59.99**

Boxing clever

The main menu is controlled by scrolling through the options, then typing in the file name or the record or format file to be manipulated. The presentation may look a little old-fashioned, but bear in mind, five years is a long time in the micro industry! The ability to create long fields containing varying amounts of text will be useful if your data tends to be irregular.



A typical format file just about ready to be edited. Each field of the record is given a letter that the computer recognises as belonging to that field. The style and shape of the record card can also be altered, if desired. The package includes a demo file, which is a useful demonstration of how to create a card.

dBase II is a powerful database management program offering facilities not available from any other PCW package. But it has a reputation for being difficult to learn and use.

dBASE II

dBase uses the standard records and fields format. You can have up to 32 fields with 255 characters in each. It caters for three different types of information; text, numeric and logical. Logical holds a single character to indicate Yes or No, conserving disc space. Other field types, such as money or date, are easily simulated with **dBase** commands.

The program is relational, and allows two files to be used together simultaneously, linking their values in particular fields and automatically cross-referencing them. An invoicing system, with one database for client addresses and details and another for orders, would link the two via a common field containing a client code. **dBase** could read the address from one and sale details from the other, to produce a complete invoice.

Unlike most database programs, which work with on-screen menus, **dBase** is normally operated with individual commands, much the same as a language like **Basic**. Around eight commands are necessary to start using the program in a simple way and many more are needed to use its advanced facilities.

Although the command system may put you off, it's the route to **dBase's** power and flexibility. New users soon pick up the simple commands, while experienced users can quickly perform quite complex operations on their data.

The command system has another advantage. Commands can be combined to form programs, letting you produce tailor-made database systems. Programming a custom-built database is much easier than starting from scratch with a conventional language.

Although there's no need to go this far, many users learn to do so because it allows them to produce easy-to-use, menu-based systems. These are useful for other people, who aren't familiar with **dBase**, so that they can use a program produced with it. One technically knowledgeable employee can create a system for use by untrained staff.

Almost any facility you can think of is available in **dBase**. The program contains a special ability to speed up file access, which creates an index of any particular field. **dBase** is then able to locate a particular record almost instantly. The index also allows you to view your records in sorted order, though you can also perform a physical sort with a specific command.

Data manipulation functions are wide ranging, so that **dBase** can match a conventional programming language. It can perform complex data analysis, as well as producing perfectly formatted and arranged reports.

One area where **dBase** is traditionally hard going is on-screen form design, for data amendment screens and report layouts. These normally require a long sequence of commands and can be difficult. But the package is supplied with a separate program called ZIP, specifically for this purpose. It works much like a standard designer, then produces the relevant **dBase** commands for you automatically.

dBase for the PCW also comes with a program called **dBase Menu**, itself written in **dBase**. This simple, menu-driven program lets you perform simple filing tasks without using **dBase** directly. It only supports a limited number of **dBase** facilities, but will prove useful for newcomers who want to use the package without having to spend a long time learning it. There are also many books available on **dBase**, containing programs to use and adapt yourself.

Many computer professionals are familiar with **dBase**, and some use it to produce complete packages for specific applications. If you're planning to set up a sophisticated system for a well-known application, it might be worth checking that you can't already buy one, written with **dBase**, from a consultant or dealer.

dBase more than deserves its long-standing position as a best-seller. It's power, flexibility and proven reliability commend it to anyone who wants to set up a database on their PCW. But it is difficult to get started with and you could spend more time than you'd like learning to use it.

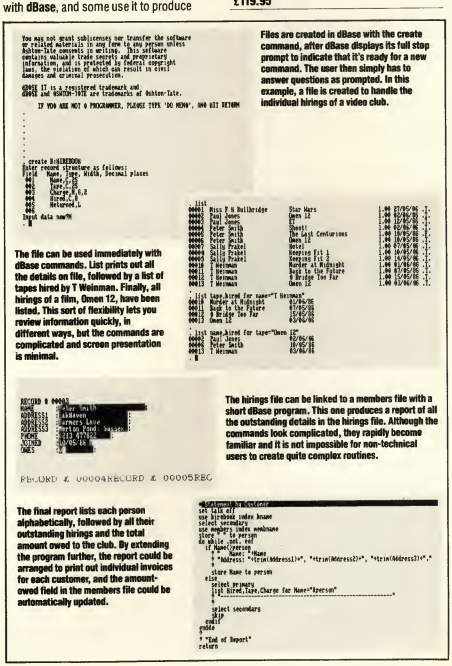
So if you only need a program for straightforward filing, you may be better off with a less sophisticated, friendlier program. But if you want to get the most from the PCW's database abilities, there's really no alternative.

FACTS BOX

PRODUCT
dBASE II

SUPPLIER
First Software

PRICE
£119.95



If you need a database for mailmerge, **Dataflow** provides a unified system, compatible with Locoscript.

Dataflow III/Mailflow III

When you first create a **Dataflow** file you define the format, specifying the name of each field and the type of data it'll hold: text, numerical, money, a date or a value calculated from the contents of other fields.

A calculated field may only be based on 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 field can be totalled.

Dataflow allows up to 20 fields per record, 255 characters to a field. The number of records depends on the number and length of fields but should be more than adequate for the sort of task **Dataflow** is suited to.

The program cannot cross-reference information from several files, which limits it to simple applications such as lists; it's not suitable for tasks such as order processing and invoicing.

There's a basic report facility, which produces tabulated summaries of data, including totals and sub-totals. A more extensive record search is provided too. Up to three fields can be tested at once and their values compared. You could produce a report for everybody called Smith who lives in Manchester.

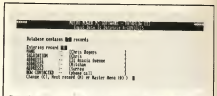
You can't make comparisons on date fields, which could be a drawback if you need a program to print out all the people who joined your club after a certain date for example.

But **Dataflow** is greatly enhanced by its ability to read data into a file if it's been stored in 'comma-and-quote-delimited' format and it can convert records into this format for use in other programs, including **Mailflow**.

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**.

The facility isn't as quick as some mailmerge programs because the **Locoscript** document must first be converted to ASCII, along with the **Dataflow** records. But both programs are fairly easy to use, with extensive prompting and menus but no Help screens.

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



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. A variety of reports can be generated, depending on the fields you choose.

Data is transferred to Mailflow with the Extract option. The mailshot itself is written with Locoscript. Data insertion points are indicated by the field number inside '/ characters. The standard letter must then be converted to ASCII format using Locoscript's Modes option.

FACTS BOX

TITLE
DATAFLOW III/MAILFLOW III

PUBLISHER
Micro Power

PRICE
£49.95

Campbell Systems has a good reputation for getting the most out of small micros. **Masterfile** is the culmination of six years experience.

Masterfile 8000

Specifically written for the PCW, unlike many 'standard' packages, **Masterfile 8000** exploits the machine's resources to the full, notably making use of the large Ram disk and the high-resolution screen.

Put simply, **Masterfile** is like every other database on the PCW, but succeeds in being more flexible and efficient than most of its competition.

Reading the manual, and the copious examples and extra documentation on disk, it becomes obvious that Campbell are database enthusiasts; and that enthusiasm is so infectious, you'll find it difficult not to get carried away in a frenzy of organisation!

The program is easy to use, utilising friendly drop-down menus and an on-screen cursor wherever possible. To load a file from disk, for example, just one key selects disk mode, one brings up a directory, from which you select the file using cursor keys, then you just press one key to load.

Files are only limited in size by the Ram disk (110K on the 8256) and you can pack in up to 80 data fields per record. Searches can be conducted using logical operators and numeric data within files can be manipulated.

Files may have more than one format file, and output can be sent to the screen, printer or disk for export. Export files can be configured for mail merge with almost every major PCW software format, while **Masterfile** itself can accept data from a wide variety of systems.

While it's not quite as idiot-proof as the authors might think, consulting the documentation always seems to get you out of any potential problem, and, if all else fails, Campbell runs an excellent expert back-up service.

For state-of-the-art filing on the PCW, **Masterfile 8000** is rather a strong contender.

The Masterfile main menu may appear unprepossessing, but all other functions can be accessed from it with a single keystroke, including the abilities to calculate, maintain format and check Ram disk usage.

It's typical of Masterfile's approach that once you have the disk directory up on screen, it's only a matter of moving the cursor around and a single key press to load up a file.

FACTS BOX

TITLE
MASTERFILE 8000

PUBLISHER
Campbell Systems

PRICE
£49.95

Finding a database to suit your needs means balancing power against complexity. From novice systems to special applications, we indicate what's available.

Facts on files

File systems

CARD INDEX V2.2
Cornix
£34.95
A simple base in an upgraded version, this comes with the same 600-records maximum for a single-disc system but has added a dual-drive operation; 15 fields-per-record maximum and up to 40 characters per field. An auto-repeat facility takes the strain of repeating details across records and extended search routines include wild cards and negative search. An easy-to-use, good value card-index system.

CARD INDEX FILE
CCS
£19.95
A menu-driven card-indexing system including conditional searches, listing and printing facilities. Full prompts and messages are available.

DATAFILE ONE
Datarun
£30.00
A system aimed at the mailmerge end of the market and designed for use with **Locoscript.** Quite complex searches are possible and the system is easy to use.

DATASTORE
Digita
£39.95
Formerly **Data Gem**, **Datastore** offers keyed access to index records, thus speeding searches. There are also printer templates to produce consistent hard copy, and file layouts can be changed once the base is in use.

Up to two files can be open at one time and 32,000 records can be handled, of up to 32 fields or 1,498 characters in total; key fields are limited to 31 characters, others to 88. There are four field types available and eight key fields can be established. Calculation and 32 search criteria make this a versatile system.

FILE MANAGER
Sandpiper
£99.95
A relational system allowing 4000 characters per record, 255 per field, **File Manager** can also create interactive programs, so that data from one file can call up data from elsewhere, to be inserted or verified. It also has a data compaction routine, to help use disc space more efficiently; 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, and it is suitable for single drive systems.

FIRST BASE
Minerva
£29.95
A database for novices, **First Base** probably won't be the only program you'll ever need, but it's a good introduction, and as files can be converted to ASCII, you won't need to retype everything when you upgrade. It allows up to 255 fields, with a key field to speed searches. Your record cards can have text wherever you want. The report generator's facilities include totalling numerical fields. **First Base** also supports mailmerge, with **Locoscript** or ASCII word processors.

MAILEX
Professional Data Services
£34.95
A card index and mailshot program which is compatible with **Locoscript.**

MATCHBOX
Quest
£29.95
A low-priced database, **Matchbox** could provide a beginner's system without too much trouble. The maximum fields per record is 30, and their size is defined by the user, within the limit of 255 characters. This allows up to 32,000 records per file, though memory restrictions will probably reduce this. Only two data types are used. Searches are available on full or partial fields. The program can also produce labels.

MICROFILE
Saxon
£49.95
Microfile, with capacity for up to 6,500 records of 20 fields or 1,600 characters, plus calculation and logical sort, four 20-character key fields (others are 80 characters), two level access and a pre-defined template service from Saxon, is a useful and good-value element of the **Micro Collection** (see Word Processing section).

POCKET INFOSTAR
Davis Rubin Associates
£69.50
Part of Micro Pro's **Pocket** system, this complete pack includes **DataStar** (£49.95) and **ReportStar** (£39.95). You can have up to 245 fields per record and 245 characters per field with infinite field types and variable field lengths. The system is hierarchical and includes a calculation facility. Powerful but difficult to use.

RETRIEVE
Sage
£69.99
Retrieve uses plain language commands, which can be in English (or are easily

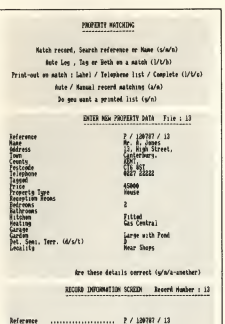
Dedicated data

FEAD PLUS/CONVEYANCING/WINDOW
Microtronics
£159.00/£99.00/£99.00
Though there's no shortage of financial packages tailored to the professions, this is the first such database that we've found. **FEAD Plus** stands for First complete Estate Agent Database, which sums its purpose up quite succinctly.

Obviously estate agents have to handle vast amounts of data and a database can really help out when it comes to matching up properties with client. The primary packages are for use with residential and commercial properties.

Various factors are included, such as variants in price, and telephones of relevant customers are produced automatically, along with label printing for mailing. Searches are on area and town bases.

Microtronics is also producing a **Conveyancing** program, to handle local searches and legal details, and a **Window** package, which can be used to display details of properties in an interactive display.



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. Maximum characters per record is 1,020 and you can have up to 20 conditions, for a sort. There's also auto mailmerge. An audio tutorial is included.

SMARTCARD
Focus
£59.95
Card index with sorted reports and label facility.

Database managers

CAMBASE
Camsoft
£49.95
As well as 39 fields per record, with up to 127 60-character text lines per field, 15,000 records per base and calculation facilities, **Cambase** has some useful extras. Fields can be conditional on other fields; field details can be altered at a later date; and selections can use more than one field, to produce detailed reports. The report generator produces ASCII files which can be enhanced with a word processor.

CONDOR
Caxton
£99.99
This relational database manager lets you add to or alter the structure of its fields, produce your own screen designs, and so establish systems for use by other people.

It can handle one or two records simultaneously and the maximum record size is a kilobyte. You can have up to 127 fields or 1024 characters per record, 65,500 records maximum. There are six field types, and it supports calculations.

The near-English command language means that while **Condor** may not be quite so versatile as **dBase II**, it's more friendly. The manual runs to over 300 pages and it comes with free and unlimited telephone support for registered users.

DATABASE MANAGER (AT LAST)
Advance
£29.95
Formerly known as **At Last**, **Database Manager** is now one of the cheapest relational bases around, with the ability to handle up to 10 files. It uses menu prompts and single keys for ease of use. Features 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; 20 fields or 2000 characters per record; 79 characters per field. Sophisticated sorts and calculations are possible and structures are redefinable without data loss. Unfriendly manuals though.

DELTA
Compsoft
£99.99
This twin-drive system offers a maximum of 90 fields per record.

Others

Here are four programs which meet special needs. A hierarchical data-storage system manages information in a form which is more easily accessed by inexperienced users.

Free-format databases don't force you to establish a standard card format. Instead you mark sections of continuous text, from which the program selects the indexed words. It's a system with obvious appeal for writers, who need to refer to blocks of text, rather than individual records.

CHIBASE
Cwmbran
£49.95
A free-format database which includes its own editor, so you don't need a word processor, though it can be used with one. **Chibase** uses single key commands, though the latest version has dedicated certain functions to the PCW's keys. Text format is up to 23 lines of 80 characters and indexed words are highlighted. A fast, efficient program.

FT=DB
Encyclasoft
£24.95
You create your files with an existing word processor in this free-format program, and it can cope with **Locoscript**, **NewWord**, **Protext** or **Tasword**. Key phrases are marked at this stage and **FT=DB** can place them in two locations during the search. Choosing from the chosen references lets you enter the file for reading only. Its ability to handle unlimited free text makes it a versatile, economy-priced package.

MAGIC FILER
Sage
£69.99
Unlike other databases, this structured filing system creates catalogues of information which can be easily scanned; or pages can be instantly selected; or the program can search for information. Organisation is hierarchical, so that you progress from main categories to the most detailed information in a series of steps. **Magic Filer** is versatile in the way you can classify information, but cannot be seen as a replacement for a traditional database; however it serves its own unique purpose well.

PAPERBASE DE LUXE
Wight
£90
A specialist database, aimed at scientists, medical researchers, students and the like, **Paperbase de Luxe** enables you to establish a bibliographical database, so it can prepare reference lists of manuscripts as well as performing standard storage and retrieval. It uses sequential files, which can be slow but has its own advantages in terms of field size, storage capacity and easy editing.

CONTACTS

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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 budgetting. 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 accomodated 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.

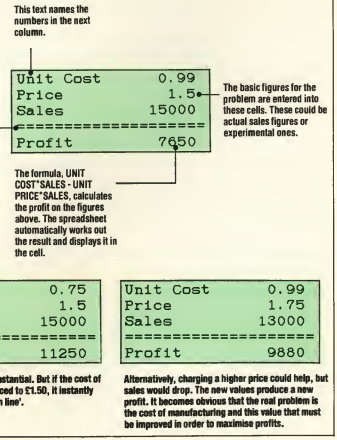
At first the spreadsheet is blank and has no particular function. The finished spreadsheet's operation is purely the result of the information the user enters into it.

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.



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 is 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

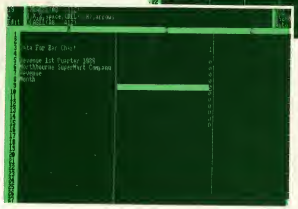
PRICE
£49.95

PUBLISHER
NewStar

Cracking Cracker

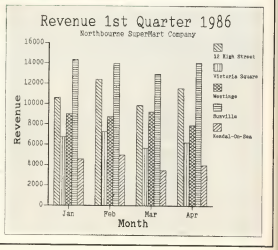
Unlike most spreadsheets, Cracker does not automatically extend the work area as you use it. When you first load it, you have to insert some lines and columns before you can start work.

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.



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.

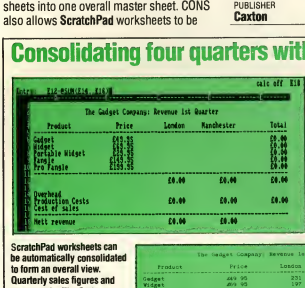
FACTS BOX

TITLE
ScratchPad Plus

PRICE
£69.99

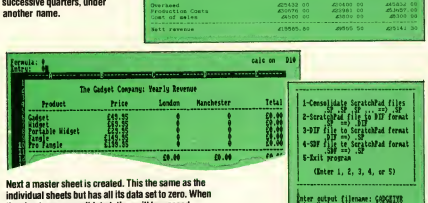
PUBLISHER
Caxton

Consolidating four quarters with Scratchpad



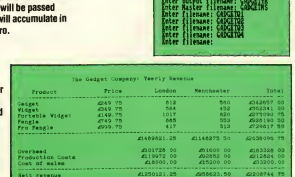
Creating a ScratchPad Plus worksheet is much the same as with other spreadsheets. You enter figures, formulae and text labels appropriate to the job, then format them so that the on-screen image, and printout, is as clear as possible. ScratchPad is limited in that all its columns must be the same width 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.



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.



FIGURES

Whether it's a spreadsheet or a specialist statistical package that you need, you can count on this round up of what's available.

Sum total

Spreadsheets

MULTIPLAN

If you need a program that can relate separate worksheets, including updating related sheets while you work on the main one — and yet remains friendly, providing on-screen prompts in plain English and accepting menu or initial commands — **Multiplan** could be for you. It offers statistics, sorting, logical operations, trigonometric functions, and up to eight windows to take full advantage of the PCW's large screen.
MULTIPLAN
Newstar
£69.99

PLANNERCALC

Instead of moving your cursor around the screen, you do all your work on an information line, which adds to the time spent typing, but the pseudo-English commands are easy to understand and remember. The maximum sheet size is a good 65,536 cells, and **Plannercalc** offers: statistics; logical operations; limited maths and windows. An advanced version, **Master Planner** (£69.95), offers a larger worksheet and better formatting.
PLANNERCALC
NewStar
£39.99

POCKET CALCSTAR

Part of the **Pocket** series, this is good value if you need a standard spreadsheet. The maximum number of active cells is 1,400, so it's not suitable for very big applications and it could make better use of the screen for its 3 to 63 character column width. But it's well documented. Templates of cells can be created, a useful feature for form filling. Results can be exported to other **Pocket** products.
POCKET CALCSTAR
Davis Rubin Associates
£39.95

SUPERCALC 2

If there's a standard PCW spreadsheet, **Supercalc 2** is probably it, providing all the basic facilities such as sorting, logical operations, trigonometric functions, windows, macros and help screens. it supports Boolean operations and date calculations and blocks may be labelled. Sequences of commands can be stored. The manual is sensibly divided into beginners and experts sections but printing can cause problems.
SUPERCALC 2
Amsoft/Software City
£49.95

Statistics

AMSTAT 1, 2, 3 and 4

This series of four programs comes from a specialist statistical software house and is available en suite for £99.95. Offering such advanced features as nonparametric tests and complete Siegel, these are probably best suited to experienced statisticians in need of analysis and forecasting tools.
AMSTAT 1, 2, 3 and 4
SC Coleman
£27.95 - £39.95

FORECASTING

This package offers linear and polynomial regression analysis. It allows for trend and seasonal variation, multiple regression analysis, transformations, exponential smoothing and adaptive filtering. The manual is quite good.
FORECASTING
SC Coleman
£27.95

OXSTAT

Oxstat offers one- and two-way variance analysis, ci-square test, Fisher Exact test, Yates correlation, linear correlation, ten-way multiple linear regression, paired t-test, Spearman ranked correlation test, unpaired Students t-test and matched-pairs signed-rank test. Data entry is simple and calculations can be further manipulated.
OXSTAT
Medstat/Wight Scientific
£113.85

QUASAR

Goode's **Quasar** includes a full screen editor and hi-res graphics for histograms, scatter grams, bar charts and frequency tables. It offers regression analysis, matrix arithmetic, a series of mathematical utilities, percentage change over and cross tabulation,descriptive statistics, percentiles, correlation and covariance matrices.
QUASAR
Goode
£22.95

RESOURCE MANAGEMENT

This package is dedicated to solving sequencing, scheduling, blending and allocation problems.
RESOURCE MANAGEMENT
SC Coleman
£27.95

STATS

A general-purpose statistical package for the scientific, educational and business user, **Stats** provides interactive working, data preparation and manipulation, descriptive statistics, graphs and charts, tabulation, multivariate analysis, significance tests and non-parametric methods. It's written in Basic and all facilities are reached via a main menu. The manual is well presented, with extremely clear explanations of the various tests.
STATS
Nairana
£19.95

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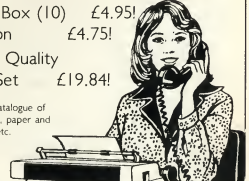

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SAME DAY DESPATCH

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.

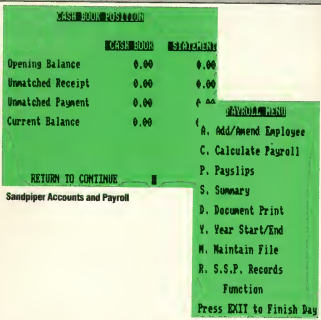
There has been such growth in accounting software for the PCW that the newcomer will most likely be bewildered by the choice. But this proliferation does mean that somewhere there should be the right accounting package for you, if you know where to look and what you want.

ON A BUDGET

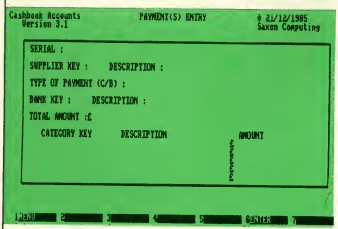
If you're looking for a simple program for home use, or you're in business as a sole trader, with no more than one or two staff, then you'll probably just want to keep track of your cash and bank records and VAT. In that case, you should be looking at one of the systems under about £40. In this range 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 towards your 200 trans-actions, 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.



Sandpiper Accounts and Payroll



Saxon Cashbook Accounts

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.

Camsoft 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 computer-isation 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 norminal ledgers. Buying a single package for an independent part of your business records, like payroll or stock control, is one way to familiarise yourself computer-isation 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 accoounts. For accountants preparing client information from incomplete records, their **Shoebox** 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 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 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.

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.

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 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.

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.

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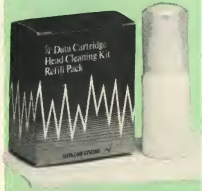

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AMSOFT

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

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.

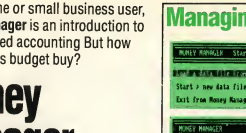
FACTS BOX

TITLE
Money Manager

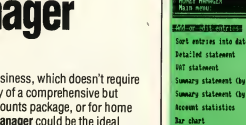
PRICE
£29.95

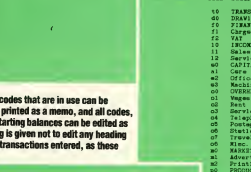
PUBLISHER
Advance

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.





Business date sample

ACCOUNT CODES:	A/c	Description	Starting balance
	1	Nat West	2,543.69
	2	Cash	-57.87
	3	Visa	-142.30
	4	VAT	-743.26
	5	Acme Sup.Co.	0.00

CLASS CODES:	Code	Description
	t0	TRANSFERS
	d0	DRAWINGS
	f0	FINANCIAL
	f1	Charge & Int
	f2	VAT
	i0	INCOME
	l0	Loans
	l2	Services
	m0	CAPITAL EQUIP
	n1	Cars
	n2	Office equip
	n3	Machinery
	o0	OVERHEADS
	o1	Wages
	o2	Rent
	o3	Services
	o4	Telephone
	o5	Postage
	o6	Stationery
	o7	Travel
	o8	Misc.
	s0	MARKETING
	s1	Advertising
	s2	Printing
	s3	Research
	p1	Manufacturing
	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 date sample

Standing orders

Day	A/c	Ref	Cl	Description	Rk	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	t0	Arthur & Co			150.00	1,860.00-
15	1	so	o1	Wages		500.00-		2,160.00-

Standing orders are listed under a heading for a fictitious 13th month in each year, on top of the twelve the program caters for. The relevant standing orders are then called up when you make each month's entries. This allows for payments at monthly, quarterly, and annual intervals, or, as happens with rates bills, ten times a year.

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 date 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
e = exempt

LEFT VAT:

Day	A/c	Ref	Cl	Description	Rk	Receipt/O-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	pl	Raw materials			191.71-	s	28.76-	220.47-
13	1	so	d0	DRAWINGS		1,500.00-				1,500.00-
							17.39-	s	2.61-	20.00-
							4.74-	s	0.71-	5.45-
							18.94-	s	2.84-	21.78-
							323.91-	s	48.59-	372.50-
							5.96-	s	0.89-	6.85-
						900.00-				900.00-
							208.43-	s	44.77-	343.20-
							19.65-	s	2.77-	22.42-
						60.54-				56.54-
							15.97-	s	2.39-	18.36-
							39.59-	s	5.94-	45.54-
						415.06-				415.06-
						940.66-			142.96-	3,883.04-

Personal date sample

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

Day	A/c	Ref	Cl	Description	Rk	Debit	Credit	Balance
1	1	smo	h1	Mortgage		132.50-		132.50-
1	1	smo	h2	Gas		55.00-		187.50-
5	1	115	m2	Petrol	h	23.45-		210.95-
5	1	116	l1	Food	h	42.50-		253.45-
9	1	117	m0	Allen	h	55.50-		308.95-
10	1	118	m0	MICHELLAE	h	5.40-		314.35-
14	1			Fuse 6			270.27	44.08-
15	1	119	l1	Food	h	66.09-		110.17-
15	1	14	l4	Cash (card)	h	50.00-		160.17-
18	1	127	t0	to 3 %		100.00-		260.17-
18	1	120	h4	Electricity		90.15-		350.32-
19							442.96	92.64

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 date 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-	314.16-	665.14-	559.36-	466.62-	1298.83-	1719.63-	566.27-	317.47-	1223.23-	243.96-	773.21-	743.26-
Ending	314.16-	665.14-	559.36-	466.62-	1298.83-	1719.63-	566.27-	317.47-	1223.23-	243.96-	773.21-	1136.21-	1136.21-
Change	429.10	348.98-	270.21-	470.72	744.21-	420.80	1153.36	248.80	905.76	979.27	529.25-	363.00-	392.95-
Maximum		314.16-	665.14-	0.00	466.62-	1298.83-	0.00	566.27-	317.47-	1.66	243.96-	773.21-	
Minimum	743.26-	665.14-	559.36-	559.36-	1298.83-	1719.63-	1719.63-	317.47-	1223.23-	1223.23-	773.21-	1136.21-	1719.63-
Difference	743.26	348.98	270.21	559.36	744.21	420.80	1719.63	413.80	437.76	1223.22	436.27	418.96	1719.63
Average	227.27-	339.65-	666.53-	274.14-	437.81-	1206.83-	952.13-	491.53-	517.47-	568.90-	342.94-	761.37-	686.98-
Total in	743.26			932.36			1719.63			1223.22			4727.90
Total out	314.16	348.98	270.21	464.62	744.21	420.80	566.27	413.80	437.76	1979.49	436.27	418.96	6178.97
Cash flow	427.10	348.98-	270.21-	470.72	744.21-	420.80	1153.36	248.80	905.76	979.27	529.25-	363.00-	451.07-
Cumulative C/F	316.16-	665.14-	559.36-	466.62-	1298.83-	1719.63-	566.27-	317.47-	1223.23-	243.96-	773.21-	1136.21-	451.07-

A personal-accounts package and more, **Plan It** claims to be the complete personal organiser.

Plan It — helping you to stay on the planet

If you need a personal-accounts package, a simple card index, a financial diary and a loan calculator, **Plan It** could come to your aid, but you'll have to be meticulous enough to keep them up to date.

On booting up, you're presented with a main menu that allows you to choose which program you wish to run. Personal accounts is a comprehensive financial utility to help you to keep a tight rein on your money. Bank account and credit card details are entered, along with the full details of every financial transaction you make during the month, and pigeon-holed under one of 24 individual headings.

Standing orders can be programmed in, as well as credit limits, and you're warned if you exceed these. A bank statement, or full breakdown of income vs expenditure can be produced. If you have the discipline to use it properly, it'll certainly give you a much better picture of where your money goes.

You can enter both text and fiscal information into the financial diary. It supports 200 entries, or 8000 characters.

Plan It's card index is a simple database for keeping names and addresses. You'll get around 600 on a drive A disc, 2000 on drive B, and you can sort them in alphabetical order on any field, search through them for a particular word or print out lists or labels.

Multiple-search criteria are not supported, but you can design your own formats. Each file, no matter how small, has exclusive use of one disc. But be warned: knocking the keyboard accidentally while changing discs drops the program back into Basic.

Plan It's primary appeal will be to the semi-organised. To get any worth out of it, you have to sit down each night and enter the data. But if you're disciplined enough for the data entry, **Plan It** provides an easy-to-use system, aimed at the beginner, which can deliver the goods.

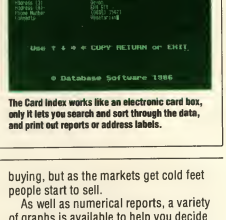
FACTS BOX

TITLE
PLAN IT

SUPPLIER
Database

PRICE
£24.95

Expenditure is broken down into 24 different sub-headings which are definable if necessary, allowing you to keep a tight rein on your monthly budget.



The Card Index works like an electronic card box, only it lets you search and sort through the data, and print out reports or address labels.

As share-ownership swells, we get bullish about a package to follow the fortunes of the flotations

Keeping afloat with the Share Master

Whether you're a small investor tempted by privatisations or a more dedicated dabbler in the stock market, you need a way of keeping track of your portfolio's profitability and of gaining insight into market movements. **Share Master** offers both facilities in a well-documented, menu-driven package.

As with all financial software, to use **Share Master** to full effectiveness, you'll have to be diligent about entering price information. The program comes complete with sample files though, including the FT 30 Index, and as its capacity is 50 files of 500 entries, you'd be advised to retain some at least for reference purposes.

Data entry can be a trifle laborious at first, though the program is content to start work with only two prices. But the process is well prompted, and when it comes to updating, on a daily or weekly basis, there's a time-saving short cut.

The reporting aspect of **Share Master** keep track of all your share transitions and profits, and is able to produce results in a variety of forms

The really intriguing part of the package is its share-analysis side though. This works on a statistical basis, using the theory that price movements are primarily emotional, so that greed will lead to buying, but as the markets get cold feet people start to sell.

As well as numerical reports, a variety of graphs is available to help you decide just when the buyers will start to bail out.

While the value of this final analysis will depend on your ability to read the signs, the manual contains an introduction to the subject. There's no reason why **Share Master** shouldn't grace the portfolio of every interested investor.

FACTS BOX

TITLE
SHARE MASTER

SUPPLIER
Synergy

PRICE
£99.95

You wouldn't necessarily have all this information on-screen at one time, but the facility to label lines makes hard copy clear for analysis.

The powerful overlay facility allows you to compare share performances against each other or, as here, the FT30 Index.

You'll need to find a financial package to match the scale and complexity of your business if you're to balance the books

The money programs

Single programs

SIMPLE ACCOUNTS
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A friendly basic package for small businesses featuring reports and generation of VAT information. Version **EXT** adds payment report and advice, and up to 300 entries per folio. Upgrades cost £17.25.

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£14.95
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Sandhurst Business Systems
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Following the style of Vyners' **Simplex D Cashbook**, information from the program is entered directly into your ledgers. Cash and bank balances are displayed at all times. A free 20-minute demonstration video of **Micro Simplex** is available.

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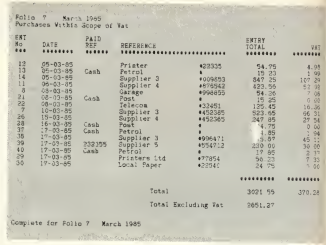
Specialist software

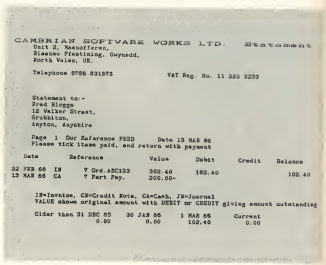


Folio 7 March 1985
Purchases Within Scope of Vat

ENT No	DATE	PAID REF	REFERENCE		ENTRY TOTAL	VAT
12	05-03-85		Printer	*28335	54.75	8.05
13	05-03-85	Cash	Petrol	*	15.23	1.99
14	05-03-85		Supplier 3	*009653	547.35	107.29
11	06-03-85		Supplier 4	*678542	623.56	93.38
8	08-03-85		Garage	*998655	54.26	7.08
26	08-03-85	Cash	Post	*	15.25	0.00
7	08-03-85		Telecom	*53451	125.45	16.36
25	15-03-85		Supplier 3	*452585	523.65	66.31
28	16-03-85	Cash	Supplier 4	*452565	247.85	27.54
27	17-03-85	Cash	Post	*	4.75	0.00
35	17-03-85	Cash	Petrol	*	1.89	0.24
36	17-03-85		Supplier 3	*996471	365.85	45.72
39	17-03-85	323305	Supplier 5	*554712	239.90	30.00
40	17-03-85	Cash	Petrol	*	15.95	2.11
29	17-03-85		Printers Ltd	*77954	56.25	7.50
30	17-03-85		Local Paper	*23542	24.75	3.30
				Total	3021.55	370.28
				Total Excluding Vat	2651.27	

Complete for Folio 7 March 1985

Cornix Simple Accounts



CAMBRIAN SOFTWARE WORKS LTD. Statement
Unit 2, Wenoferren,
Blaenau Ffestiniog, Gwynedd,
North Wales, UK.

Telephone 0766 831875 VAT Reg. No. 11 222 3333

Statement to-
Fred Bloggs
12 Water Street,
Grubbition,
Aeyton, Aysshire

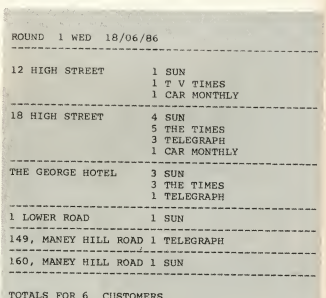
Page 1 Our Reference FRED Date 13 MAR 86
Please tick items paid, and return with payment

Date	Reference	Value	Debit	Credit	Balance
22 FEB 86	IN 9	Ord.ABC1825	302.40		
13 MAR 86	CA 9	Part Pay.	200.00-		102.40

IN=Invoice, CR=Credit Note, CA=Cash, JN=Journal
VALUE shows original amount with DEBIT or CREDIT giving amount outstanding

Older than 31 DEC 85	30 JAN 86	1 MAR 86	Current
0.00	0.00	102.40	0.00

Camsoft Invoicing



ROUND 1 WED 18/06/86

12 HIGH STREET
1 SUN
1 T V TIMES
1 CAR MONTHLY

18 HIGH STREET
4 SUN
5 THE TIMES
3 TELEGRAPH
1 CAR MONTHLY

THE GEORGE HOTEL
3 SUN
3 THE TIMES
1 TELEGRAPH

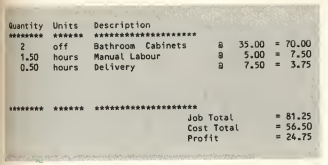
1 LOWER ROAD
1 SUN

149, MANEY HILL ROAD 1 TELEGRAPH

160, MANEY HILL ROAD 1 SUN

TOTALS FOR 6 CUSTOMERS
10 SUN
8 THE TIMES
5 TELEGRAPH
1 T V TIMES
2 CAR MONTHLY

Bubble Bus Supernews



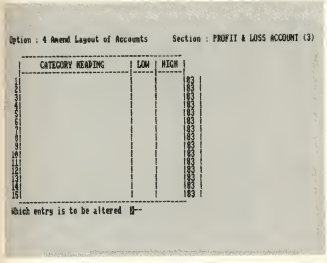
```
Quantity  Units   Description
********  ******  ********************
   2      off     Bathroom  Cabinets      @   35.00  = 70.00
   1.50   hours   Manual Labour           @    5.00  =  7.50
   0.50   hours   Delivery                @    7.50  =  3.75


********  ******  ********************
                                Job Total          = 81.25
                                Cost Total         = 56.50
                                Profit             = 24.75
```

Cornix Job Estimating

```
Option :  1  Allocate Purchase Accounts

A/C  Existing Account Name      New Account Name        Credit Limit
---  ------------------------   ---------------------   ------------
0--
```

```
Option :  2  Allocate Sales Accounts

             Account No.  :    0--
```

```
Option :  3  Allocate Nominal Accounts

A/C  Existing Account Name      New Account Name        Budget
---  ------------------------   ---------------------   ------------
0--
```



```
Option : 4 Amend Layout of Accounts      Section : PROFIT & LOSS ACCOUNT (3)

 ------------------------------------------------
|    CATEGORY HEADING          | LOW | HIGH |
|------------------------------|-----|------|
| 1|                           |     |  83  |
| 2|                           |     |  83  |
| 3|                           |     |  83  |
| 4|                           |     |  83  |
| 5|                           |     |  83  |
| 6|                           |     |  83  |
| 7|                           |     |  83  |
| 8|                           |     |  83  |
| 9|                           |     |  83  |
|10|                           |     |  83  |
|11|                           |     |  83  |
|12|                           |     |  83  |
|13|                           |     |  83  |
|14|                           |     |  83  |
|15|                           |     |  83  |
 ------------------------------------------------
Which entry is to be altered  0--
```

```
Option 6 :    OPENING BALANCE ENTRIES
                        BATCH TOTAL :

A/C  ACCOUNT NAME                    DEBIT          CREDIT
---  ------------------------        ------------   ------------
0--
```

Sage Popular Accounts

Modular and complete packages

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Camsoft
£49.95-£149.95
Modules are available separately (£49.95 each) or in various configurations up to £149.95 for a fully-integrated system of Sales, Purchase and Nominal Ledgers plus Stock Control and Invoicing. A versatile yet inexpensive and friendly system.

The Invoicing module includes a day book and profit analysis, and 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's cash flow.

CAVALIER INTEGRATED ACCOUNTED
Load & Run
£21.95-£99.95
Stand alone or integrated modules provide a comprehensive business package that even includes a database. **Intact** (£59.95) is the well error-trapped accounts package. **Instock** (£59.95 or £99.95 with **Intact** as **Install**) stock control and order processing provides comprehensive information, including stock danger levels and the ability to suggest orders of units based on average demand.

Contract (£59.95) is an additional module for professionals and tradespeople while **Teleadd** (£21.95) has universal appeal as a dedicated address database which can be called from inside the system.

COMPACT ACCOUNTS
Compact
£49.45-£199.99
The complete **Accounts** package costs £199.99 and output can be used with most major word processors and spreadsheets. For the smaller business the **Daybook** (£49.45) offers 32,000 accounts and transactions in sales and purchase daybooks plus a nominal ledger for financial reports.

The **Purchase Ledger** and **Nominal Ledger** can handle 32,000 transactions. The **Sales Ledger** is best used with the **Invoicing** package. Each costs £69.99. **Payroll** (£99.99) incorporates the latest SSP and NI requirements and can calculate hourly, weekly or monthly pay. **Stock Control** (£69.99) provides instant access to stock situations.

Special stationery packs are available and distributor Rowtall provides training and support.

POPULAR ACCOUNTS SYSTEM
Sage
£69.99-£149.99
Single-disc system Sage **Popular Accounts** (£99.99) is suited to cash traders and credit businesses. Sales, purchase and nominal ledgers have full reporting facilities, automatic data posting and a full audit trail.

Popular Invoicing is available separately for £69.99, but can be bought with a stock-control program as **Popular Accounts Plus** (£149.99). The **Popular Payroll** package is designed with the occasional user from the small company in mind and allows you to mix hourly, weekly and monthly pay and handles up to eight pay adjustments.

QUEST MODULAR ACCOUNTS
Quest
£33.00-£149.95
Quest's comprehensive system requires twin drives. **Shoebox** (£149.95) and **Time Recorder** (£69.86) are intended for professionals. The Amstrad and Quest **Business Control Suites** (£99.00 each) provide sales ledgers, invoicing and stock control, while **Purchase** and **Nominal Ledgers** are available for either system at £33 each.

Completing these complex suites are **File Expander** and **Wordlink** (£49.95 each); the latter transfers data to WofdStar format for production of reports. There's also an **Invoice Spooler** (£29.95) for background printing. A powerful set of programs.

SANDPIPER BUSINESS COLLECTION
Sandpiper
£79.95-£299.95
An increasingly comprehensive system, **Accounts** (£149.95) allows speedy access of sales, purchase, cashbooks and nominal ledgers with automatic posting. It's a one-disc system which can print labels and forms. The nominal ledger provides reports with calculations for six areas.

Payroll (£79.95) can cope

FINANCE

with cash, cheque and giro payment and caters for overtime and pension calculations as well as current tax, SSP and NI laws. **Stock Control** and **Job Costing** are only available integrated with **Accounts** (£199.95 or £299.95 for all three). If you also use **Sandpiper File Manager** database (£99.95) or want to use **Accounts** with other programs you'll need **Glue** (£99.95) to export data.

Trade and specialist packages

JOB ESTIMATING/PRODUCT COSTING
Cornix
£49.95 each
Job Estimating helps contractors calculate job cost and charge. It produces a customer estimate plus a complete report and can store 500 job components. **Product Costing** serves a similar purpose for manufacturers. Prices can be generated automatically or manually adjusted to current market climate.

JDB COSTER
Quest
£99.95
A general job coster for use by any self-employed tradesperson to 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 STOREMAN
Automata
£199.00
A stock-control program which is ideal for bar-coded stock, ISBN book numbers, record retailers or any similar business. It can handle up to 5000 different items with part numbers up to 15 characters long and offers fast searches. Twin-disc systems only.

MINT FIXED ASSETS
John Beavan Associates
£99.95
This allows you to keep track of all your assets and their depreciation. A full audit trail of every transaction is provided.

STOCKMARKET
Meridian
£29.95
A budget share-accounting and analysis program that can hold up to 260 prices per share, 50 shares per folio, **Stockmarket** uses curves to suggest peaks and troughs. Moving averages are plotted with log and linear scales. In the accounts mode, dealer costs are automatically calculated.

QUAFF/GLOSS WINDOW SYSTEM
CJ Systems
£287.50/£172.50
QUAFF provides accurately-costed quotations and workshop cutting lists for window replacements fabricators. Full labour and material costs and cutting lists are produced, plus a customer quote. **GLOSS** provides invoicing and labels for sealed-unit manufacturers.

SUPERNEWS
Bubble Bus
£218.50
Supernews' customers list allows for holiday stops 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.

BAR STOCK CONTROL
Quest
£99.95
Suitable for every type of licensed premises, this lets you enter your own stock descriptions, case sizes, yields, cost and selling prices. Provision is made for returns, allowances for credit/loans, spillages and overheads.

FARMING SOFTWARE
ANC Agricultural Software
£POA
ANC Agricultural Software produces programs for farmers with cattle or chickens. For example, its **Egg Monitor** copes with income and grading, feed costs and consumption and mortality.

FARM ACCOUNTS
Sum-It Computer Systems
£300-£350
Sum-It produces its **Farm Accounts** as a main module, with additional modules to cover **Dairy** and **Beef Herd, Pig** and **Arable Management**. Demonstration discs are available.

MAXI-MISER MOTOR TRADE
Midas Systems
£460
Requiring a twin-drive system, versions are available for motor, motorcycle and caravan dealers. Stock control, vehicle pricing, quotations for both cash and finance and sales and possible sales can be filed.

VIDEOFILE
SP Electronics
£79.95
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 PATIENT RECALL
John Beavan Associates
£99.95
Opticians could find **Patient Recall** a help with appointments. It provides label printing and a mailmerge to produce reminders.

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Advance Software Promotions
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Automata UK
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63 York Road
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87 High Street
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Cornix Software
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Letchworth
Herts SG6 4ET
0462-682989

CJF Lowe
2 Christ Church Square
Accrington
Lancashire BB5 2NA

Database Software
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Hazel Grove
Stockport SK7 5NY
061-429 8008

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Castlewellan
Co Down BT31 9NT

Digita International
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Budleigh Salterton
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03954-5059

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Glen Auldyn
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Isle of Man
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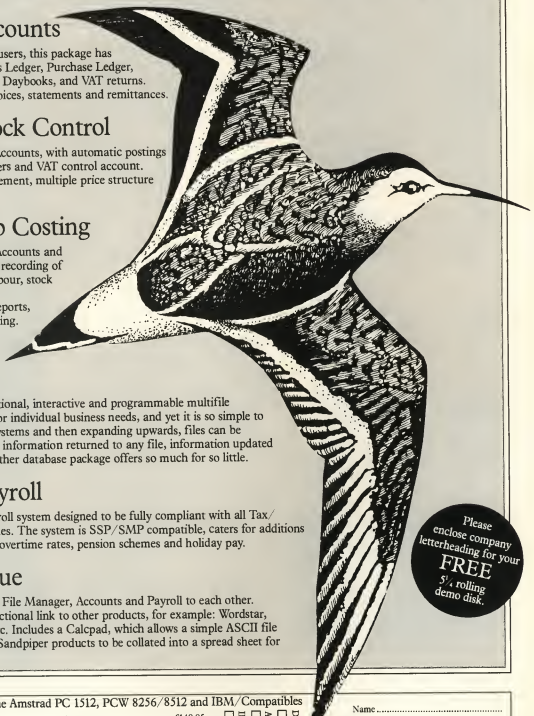
The Sandpiper Business Collection



Sandpiper Accounts

Designed for inexperienced users, this package has a large file capacity for Sales Ledger, Purchase Ledger, Nominal Ledger, Cashbook, Daybooks, and VAT returns. It produces personalised invoices, statements and remittances.

Sandpiper Stock Control

Integrated with Sandpiper Accounts, with automatic postings to Sales and Purchase Ledgers and VAT control account. Includes FIFO stock management, multiple price structure and many other features.

Sandpiper Job Costing

Integrated with Sandpiper Accounts and Stock Control, provides full recording of all costs to jobs including labour, stock and consumables. Includes work in progress reports, four labour rates and invoicing.

Sandpiper File Manager

A comprehensive, fully relational, interactive and programmable multifile package designed to cater for individual business needs, and yet it is so simple to use. Starting from simple systems and then expanding upwards, files can be selected, calculations made, information returned to any file, information updated and reports produced. No other database package offers so much for so little.

Sandpiper Payroll

A simplified integrated payroll system designed to be fully compliant with all Tax/National Insurance guidelines. The system is SSP/SMP compatible, caters for additions and deductions, bonus and overtime rates, pension schemes and holiday pay.

Sandpiper Glue

Designed to link Sandpiper File Manager, Accounts and Payroll to each other. Glue also provides a bi-directional link to other products, for example: Wordstar, Locoscript, Lotus, dBase etc. Includes a Calcpad, which allows a simple ASCII file from any source including Sandpiper products to be collated into a spread sheet for further processing.

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Accounts & Stock Control	£199.95	☐	☐	☐
Accounts, Stock Control & Job Costing	£299.95	☐	☐	☐
File Manager	£ 99.95	☐	☐	☐
Payroll	£ 79.95	☐	☐	☐
Accounts & Payroll	£199.95	☐	☐	☐
Glue	£ 99.95	☐	☐	☐

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Recently the PCW word processor has shown that it's capable of the sort of applications usually identified with far more expensive machines.

PCW Power!

Is your PCW a WIMP? Is it afraid of mice? Does it have plans for you? And is there a Maxwell in the machine?

These are all software and peripheral advances that allow your Amstrad to imitate the power and user-friendliness of micros costing three times as much. Of course they can't fully emulate the best, but they come impressively close for a budget system.

The most recent trend in personal computers is the WIMP environment, which stands for Windows, Icons, Menus and Pointer. It's a reaction to the hostile nature of most operating systems.

Instead of using Pip to move a file, WIMP represents the disc directory graphically, so you can just point at the relevant icon with a cursor, then indicate where it goes.

WIMP often includes a desktop program which remains hidden until you summon it to perform one of its many functions — which may be anything from disc management to a notepad to jot down ideas.

But there are other, non-WIMP aids to planning, which extend your PCW. *Organisation* is the key to Power Software, whether it's related to the screen or your life.

Another great revolution in micros is desktop publishing. This combines the operations of a word processor and a graphics package with a page-layout system, so that you can place text and illustrations on a page for maximum effect.

The mechanisms of editing a publication are never easy but packages are available at different levels and their friendliness can ease the pains of page-making.

Finally, the peripheral that ties all this together is — the mouse. While most of these packages can be operated from the keyboard, most work more smoothly with one of these small boxes.

By moving the mouse around your desk you control an on-screen cursor, pressing the buttons to select functions. An increasing number of games and graphics packages are now mouse-compatible.

But remember — to get the best out of your mouse, don't use it on a dusty desk or its tracker ball will soon clog up. Instead use a special mouse mat. The best we've seen comes from Overbase (£5.99) and as well as providing a smooth surface includes a template to indicate the centre and boundaries of the operating area.

The user-friendly environment first came to fame with the £1000 **Apple Macintosh.** Now it's available on your PCW for a tenth of the price.

AMX Mouse and Desktop

Though it won't turn a Joyce into a **Mac**, this package of a three-button mouse and WIMP software does all it can to imitate that state-of-the-art machine.

The pack includes an interface with a through port, so that existing expansions, such as a RS232 interface, can still be utilized. The mouse itself works adequately, though it does feel a bit lightweight.

The software is undoubtedly high class though. A menu bar appears at the top of the screen, with disc and application icons lined up along the far right.

Point to the picture of a disc labelled Disc A and double click on the left-hand mouse button. A window in the screen opens up, displaying the contents of the disc in annotated form, which is much easier to read than the old CP/M directory.

Other windows, for other functions, may be opened on the screen at the same time, and moved or re-sized, again with simple actions of the mouse.

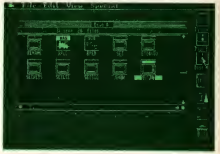
To copy a file from one disc to another, you select it in a window, hold the mouse button down and 'drag' an outline of its icon over to the desired drive. To erase, you place the disc in an icon of a trash can.

But the package also contains stylish and sophisticated desktop accessories, such as a desk diary, memo pad and address book, plus an alarm clock, jotter, calculator, and even sliding block puzzle, for those more relaxed moments. You end up with something that is almost too good to be true.

The **AMX** system does have its drawbacks though. It's understandably greedy for memory, taking up 100K of the memory drive; this means it won't work with all applications.

The main functions don't run concurrently with your own programs either. You have to exit to CP/M before the system automatically drops back into action, which is where it fails to imitate its up-market brother mice.

But with a **GSX** graphics driver on the way, and mouse-compatible packages such as **PCW Paint** and the **Stop Press** pagemaker planned by AMS, you might be persuaded to purchase a pet that's particularly recommended for advanced cases of techno fear.



To load a file, simply point to it, double-click, or select it with a single click then point to the 'File' drop down menu, selecting 'Open' from that.

A number of windows can be opened at one time, although only the one most recently is active. A selection of the desktop accessories is shown here.

FACTS BOX

TITLE
AMX MOUSE

PUBLISHER
AMX

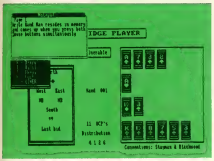
PRICE
£79.95

Could this combination of a sturdy mouse with a new version of an old program be the big cheese for advanced users?

Kempston Mouse and Write Hand Man

Though it's ten pounds more expensive than the **AMX Mouse**, Kempston's rodent controller feels more like a heavyweight. The machine is more substantially solid, and runs better across the desk. Unluckily the two mice are incompatible though.

Kempston's interface doesn't allow the 'piggy-backing' of add-ons, so if you wanted to use the mouse with an external printer you'd be in trouble. But perhaps most importantly, it doesn't come with a WIMP-like environment.



Write-Hand Man can be called on-screen while running other programs, such as CP Software's Bridge, by pressing both mouse buttons simultaneously.

Instead it's available bundled with an adapted version of Hi-Soft's **Write Hand Man (WHM)**, a concurrent set of desk accessories that can be called up from within another program by pressing the two mouse buttons simultaneously.

This is a tried and tested CP/M package, also available separately, but its age means that it doesn't benefit from the attractive graphic design of more modern accessories. It's also rather less easy to set up. But it is a powerful collection of utilities and all **WHM** features are available from within a particular package, while it's actually running.

Notepad allows you to make a few notes, maybe about the program you're working on, in a 32 character by 8 line window, which pulls down. Alternatively you can look up a phone number, previously stored on disc. This facility can also communicate numbers to an autodial modem. The Calendar is a two-week diary, which could be very useful for the business person writing a letter to arrange a meeting. There's also a four-function calculator, a fast directory facility and much more.

Advanced Write Hand Man features include a limited-key editor. It also allows you to load up a second program, then when you exit from it you can return to the original application, exactly where you left off.

Also included as part of the Kempston package is a device driver that will let you control the cursor within many CP/M programs, using mouse movements. This is a useful way of extending the mouse's uses to packages which are not in themselves configured to work with it.

However, the Kempston package does lack the WIMP environment that makes the **AMX Mouse** so pleasant to use, and unless you're a purist that could be a big disadvantage.

But the Kempston deal will appeal to users of programs which already offer it as an option, such as **Fleet Street Editor Plus** or Timatic's **Micro Draft**, or those which can tie it in with their own programs, as the mouse itself is definitely of superior quality. If you want windows and icons for extreme ease of use, you'll have to look elsewhere though.

FACTS BOX

TITLE
KEMPSTON MOUSE/& WRITE HAND MAN/& FLEET STREET EDITOR PLUS

PUBLISHER
Kempston

PRICE
£69.95/£89.95/£119.95

FACTS BOX

TITLE
WRITE HAND MAN

PUBLISHER
Hi-Soft

PRICE
£29.95

Even if you can't stand mice, you can still own a desktop companion.

Companion

Companion's desktop accessories are booted up at the start of the day, and remain in memory while other programs are running, waiting to be called up by pressing Extra and P. The main program is then suspended, and a small menu appears in the top left hand corner of the screen.

The first three utilities, the calculator, clock and disc operations, run from code which is already placed in the PCW, while the notepad, phonebook and diary require the **Companion** disc to be reinserted.

All of the features are quite self-explanatory. Calculator provides a small calculator pad which allows simple calculations to be entered. Clock's 24-hour timepiece appears on screen to alert you of meetings, and so on.

The disc utilities include three functions, a directory, free space remaining and the opportunity to view a file without changing it. You'd normally have to access via CP/M for all of these.

The notepad, phonebook and diary provide just what they say, and do it quite adequately. They'd make the package quite useful, if only it were compatible with more programs.

Problems are encountered when you wish to run a program that wants all of the Ram disc, such as the **Plan It** finance manager, or is not pure CP/M, such as most games, or the more modern business software such as **Masterfile 8000** that uses custom display modes.

Of course, if you spend most of your time running CP/M and Basic programs, the package is relatively inexpensive and probably worthwhile. But check your favourites out with it before you buy.

Companion is compatible with most pure CP/M and Basic programs, bringing up the characteristic menu in the top left hand corner — but it won't work with all commercial programs.

FACTS BOX

TITLE
COMPANION

PUBLISHER
Digital Integration

PRICE
£19.95

Planning is crucial for today's businesses. If you want to get organisational power, your PCW can help you.

Plans for success

PERTMASTER
Abtex
£69.95
Pertmaster, from Performance Evaluation and Review Technique, is strong in the field of report generation, providing options for tables, barcharts, pie graphs and histograms. You input the different activities that form the project, their order, how long they should take and what resources are called for and receive a master plan, with start and finish dates, plus possible problems during the period. Plans can be updated as the project progresses.

SIMPLAN
Pioneer Projects
£49.95/£69.95
A critical path project planner in two versions for 255 or a massive 500 tasks respectively, **Simplan** can cope with 20 resources and 1000 dependencies, with up to six resources per task. Limited resource scheduling is included as is automatic 'what if?' planning. Nine report types are available and the program prints Gantt charts.

TARGET TASK
NewStar
£99.99
This double-disc system allows you to balance time saved against any extra costs incurred.

A project plan is produced, and PERT methods allow on-going review techniques.

Target Task can also produce Gantt chart plots in a calendar format.

TIME ORGANISER
CJF Lowe
£12.95
Used in conjunction with print out for a Filofax system, this simple electronic diary could provide a useful way of recording appointments and anniversaries. **Time Organiser** allows you to store 2,920 events, covering a year, on one disc, in date, time, and events form. 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 memo.

CONTACTS

Abtex
11 Campus Road
Listerhills Science Park
Bradford BD7 1HR
0274-734838

Advanced Memory Systems
166-170 Wilderspool Causeway
Warrington WA4 6QA
0925-413501

Caxton Software
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Covent Garden
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01-379 6502

CJF Lowe
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Accrington
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Digital Integration
Watchmoor Trade Centre
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13 The Business Centre
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22 Linford Forum
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74 Worship Street
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Rugeley
Staffs WS15 3EG

Sampling the menus

The opening menu's prompts aren't immediately clear and though the manual follows a sample project through several stages, it could be more detailed. But experimentation shouldn't cause problems, providing you stick to the simpler commands, and the key controls will soon become second nature.

Editing a magazine is broken down into a series of nested activities, so that Research, Writing and Production are on the first level. They are then elaborated and broken down into constituent parts as new ideas occur. Editing uses WordStar style keys. Words can be cross-referenced and multiple files can be searched for recurrent ideas.

Brainstorm

Brainstorm is the ideas processor that produces addiction in most people who encounter it. It forces clear and efficient planning by ordering your thoughts, which are typed in as they occur, according to a simple, nested, hierarchical system. It then cross-references them, and finally produces a written report containing a structured overview of the idea.

The uses to which **Brainstorm** can be put are almost limitless. The most obvious is planning a project, from a marketing campaign to writing a novel, which is a wide enough field in itself. Programmers should find its text editor useful too in the construction of structured code, complete with development remarks which can be removed when the time comes to compile it.

It's hard to think of a situation in which **Brainstorm** doesn't have an application. It's also fun to use as there are few things more satisfying than seeing a succession of apparently diffuse ideas falling into place.

FACTS BOX
TITLE
BRAINSTORM
SUPPLIER
Caxton
PRICE
£49.99

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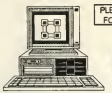

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Now you can join the Maxwells and Murdochs, mixing text with illustrations in properly laid-out newsletters and reports.

Fleet Street Editor Plus

For anybody who needs to produce documents which are more than simple reports, the recent boom in desktop publishing has made life a lot easier. **Fleet Street Editor (FSE)** has already proved itself on a number of micros and now it's the turn of the PCW.

The product comprises of three sections: a word processor, for typing in your articles, a graphic editor, with which you can create your own pictures or use artwork supplied by the program's graphics library; and the crucial layout section where text and illustrations are placed on a page design, headlines are created and the finished publication is printed out.

All the facilities of the program are accessed by selecting options from menus, using the familiar cursor keys and Enter/Return. You can also use The Electric Studio lightpen or Rombo video digitiser for creating graphics, and all sections are compatible with the Kempston mouse.

When you start writing, you can either use the program's own word processor or port over ASCII or **Locoscript** files, and put them in group 0.

The **FSE** word processor is never going to compete with **Wordstar**, but it has a surprising number of facilities, given that it's only part of a larger package. Automatic word wrap, insert and overwrite modes, deleting text back and forwards, cutting and pasting blocks of copy are all included.

As this is a publishing program, you also get the choice of five fonts, and four type sizes — 12pt, 18pt, 24pt, and 36pt. However, you do have to specify typestyle and size before you start inputting the article, but won't see the effect immediately, which is slightly disconcerting.

The graphics options are also pretty comprehensive. **FSE** has its own graphics-creation program, but there's also a graphics library containing over 100 ready-drawn pictures, which you can enlarge, scale down, rotate, and edit; it certainly takes the pressure off the hopelessly inartistic. A further graphics and fonts disc is planned.

Should you want to produce your own illustrations, the graphics editor enables you to draw freehand, fill your illustrations with a wide variety of patterns, create shapes and circles, and zoom in on parts of the picture to tidy up individual pixels.

The finished images can be manipulated, enlarged, contracted, rotated, and so on, and you can mix text, in any of the fonts and any of the available sizes, and graphics freely.

Finally the time comes to create the page, which is where you get to lay down your text and insert the graphics. **FSE** is not a program for those who like to rush things though. Pages need careful planning, and it's almost essential to have a plan of the page sketched out on paper. If you go at the layout screen 'blind', you'll almost certainly find that nothing fits.

If your text or graphic files turn out to be not quite the right size, you'll get awkward spaces at the bottom of the page, or you'll lose lines if it is too big. But assuming that all has gone well, and the articles and illustrations slide in neatly, your final task is to select a font and typesize and write the headlines directly to screen.

Fleet Street Editor is a powerful program which requires self discipline and some time and a fair amount of effort before you begin to get the most out of it. Thankfully the manual is of great help there.

This weighty volume contains not only explanations of all the menu options, but also a glossary of terms, advice on planning a publication, ideas for duplicating and binding the finished product. But most important is the Guided Tour, a partially finished page, for which the manual gives specific guidelines as you complete it. It's a useful introduction to the procedures needed.

The one major problem with **FSE** is that your publication will only look as good as your printer can make it. The vast majority of people will use it with the PCW's own printer, and the result may look a little rough. Instructions are given in the manual for configurations to other printers, including laser printers, which is handy, but only if you can afford several thousand pounds.

This doesn't detract from the sophistication of the program though. Just don't expect to see *Vogue* trundling out of your PCW.

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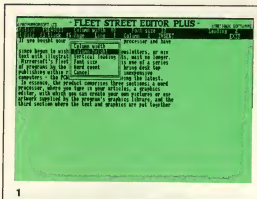

1

2

3

4

1
Using the word processor you'll need to check the column height for the length of your article so far. Although this document has been set to 60mm width in a sans serif typeface, the effect is not shown on-screen.

2
You can mix text and graphics in the graphics editor. The world map is part of the graphics library while the captions have been added in 12pt Sans Serif via the Text menu.

3
Using the layout editor, the headline has been written directly onto the page. The text can now be justified, to give it e straight vertical edge on the right hand side. The dotted horizontal lines are the limits, which prevent the text spilling over into the headline area or illustration space. They don't appear on the printed page.

4
Before you finally print out your publication, select the fit-to-screen option to see how the finished page will look. You can use it to check that you haven't left any gaps and that all your articles are present and correct. This pictures shows the Guided Tour Page, almost ready to print out.

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GRAPHICS

Whether you're producing a business presentation or entering upon an artistic endeavour, computer graphics can be fun.

Quick on the draw

Design software

DR DRAW
Digital Research
£49.95

This software package, for the production of regular geometric shapes, straight lines and arcs, can produce anything from a cover for a report to a rough ground plan.

DR Draw treats each element of a picture as an overlay, with the most recent addition clearly marked, allowing you to manipulate the latest portion, or an alternative, in a variety of sophisticated ways. You can move it, copy it to any position, or even alter details.

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

Despite its versatility, **DR Draw** is controlled via a series of easy nested menus. The manual is a model of clarity too, progressing step by step through various projects. Even installing the program is clearly explained. 8256 owners will spend some time swapping discs though. **DR Draw** turns design into a joy rather than just another time-consuming chore, even for the most unartistic user.

MICRODRAFT
Timatic
£79.99

If you want to use your PCW for technical drawing you'll need an extremely precise package. Timatic's **Microdraft** offers accuracy such that the cursor position is given in hundreds of a millimetre.

To cope with this fine detail it uses a zoom facility, holding the whole picture in memory, with only the little that the screen resolution can handle actually appearing. You can also pan across the surface of the drawing.

Drawing uses a menu system, and includes techniques specially suited to draughtspersons, 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 then introduce them into drawings, there's the Macro option.

This technical product really requires a plotter to get hard copy that matches its capabilities.

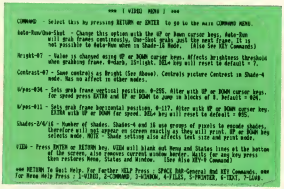
PAGEGAUGE
Omnigauge
£172.50

Designers who need to produce grids with accuracy to within 0.1mm over A3 should find **Pagegauge** invaluable. This unique product is able to draw paste-up grids easily and quickly, generating 200mm a minute.

The layout is roughed out on screen and can be altered until you're happy with it, and stored versions can be altered for specific uses at a later date. Reductions and enlargements for pictures are also automatically calculated.

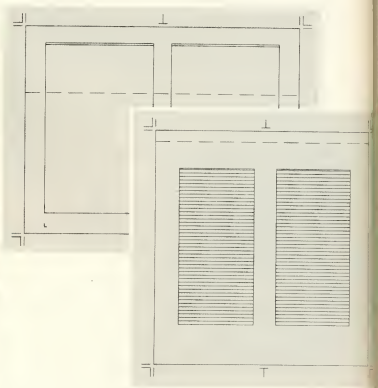
Printing can be in non-repro blue, red or black. Naturally, precision artwork requires a plotter, and Omnigauge is selling the **Facit 4551**, which the software is able to

Graphics in action



VIDI

A Vidi help screen, complete with an example of the sort of results that the program can produce.



PAGEGAUGE

Sample Pagegauge layout grids.

push beyond its normal accuracy, for £977.50.

Business graphics

DR GRAPH
Digital Research
£49.95
DR Graph features the same friendliness as its companion program, **DR Draw**. A variety of graphs is available, including line, bar, and pie charts and all of these can be embellished with fill patterns and text plus exploded 'slices' of pie graphs. Data can be imported from most major spreadsheets or entered manually and up to four graphs can be placed on one page in a variety of patterns.

POLYPLOT
NewStar
£24.95
This part of the Polyprograms suite, reviewed in the Word Processing section, 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.

Peripherals

VIDI
Rombo
£89.95
Taking an image from video and storing it in your computer's memory adds a whole new dimension to graphics. **Vidi** lets you snatch a single frame from the Video Out socket of a VCR or camera, but not the aerial or an RGB signal though. You can, however, produce 2-or 4-tone screens without having to freeze the image; that's only necessary for the ultimate 16-tone resolution.

All of **Vidi**'s commands are software-controlled, and there's a good selection of help screens to guide you through the technicalities. All changes to status are made with the cursor keys and Return. Images can be placed in an on-screen box, or window, and saved for further manipulation. Users of **Fleet Street Editor Plus** will be pleased to know that **Vidi** images can be used in their publications. It can also be used to send a PCW screen to a video recorder.

LIGHT PEN/MOUSE/VIDEO DIGITISER
Electric Studio
£79.95/£129.95/£99.95
• See Power Software Supplement.

GRAFPAD 3
Grafsales
£149.50
Grafpad III 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.

Specialist tools

GRAPHICS OPERATING SYSTEM
Mirrorsoft
£99.95
This isn't a graphics package in itself, but it can be used with a wide range of languages, such as Basic, Pascal and machine code. The only requirement is that the language can call machine code routines and Peek and Poke. GDS sits above &BFFE, so the language must be restricted to the area below this. It's only really suited to programmers.

Contacts

Digital Research (UK)
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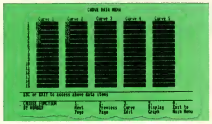
GRAPHICS OPERATING SYSTEM

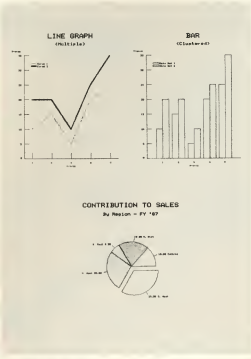
Though this rectangle may not look much, it was produced almost instantly. Superimposed is a listing of the Basic program that produced it.



DR GRAPH

Creating a line graph, the first thing to do is enter the data. Here it's done manually. Cursor movement may take a little getting used to but the menus are simple to use and it's possible to check the graph at all stages. Up to five data sets may be used on any one graph.

Curve Edit allows you to embellish the graph by adding identifying text to axes and lines, and altering the appearance of the graph, so that lines may be made thicker or differentiated with their patterns. Alterations are made by filling in the on-screen 'form'.



The final print out has produced the same information in three forms on one sheet of A4 paper, suitable for bringing into a report. Scaling to the paper size takes place automatically and there is a variety of page layouts available.

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.

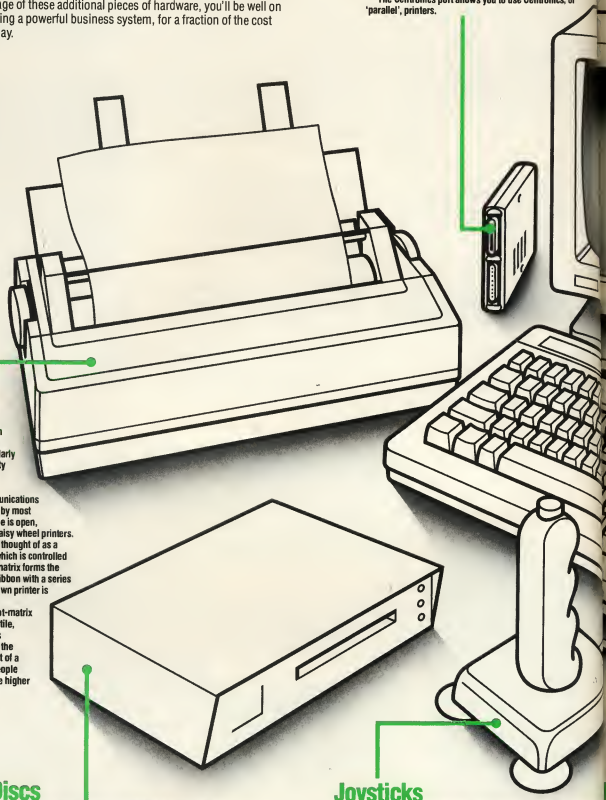
Interfaces

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 it. Joyce but games are already appearing which offer an option for this traditional arcade control. It's possible that other, more serious packages use a joystick as an alternative to the cursor keys.

MARK WATKINSON

...rnal Drive

...a second drive is probably the first major upgrade for an 8256. ...e second drive, fitted below the first, is a double sided, double ...ve. This means that both sides of the disc are read at once, and the ...e is very tightly packed, with around 700K storage space on a single

...s as the extra space, a second drive also lets you copy files and ...from one disc to the other far more easily. And if you're using your ...r an application which accesses large files, such as a database, ...d 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 5¼" 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 3½" format.

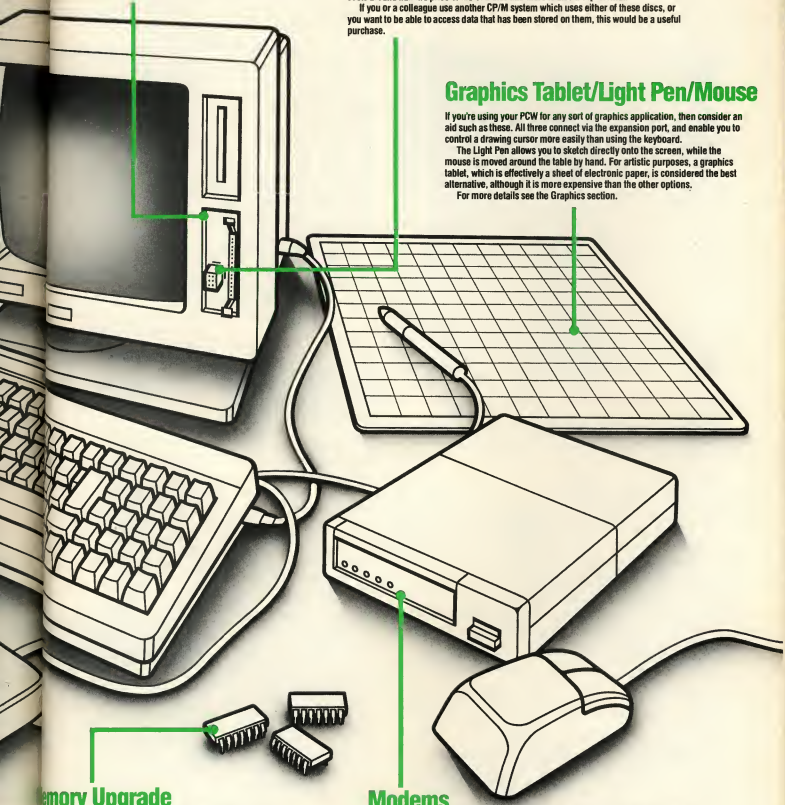
If you or a colleague use another CP/M system which uses either of these discs, or you want to be able to access data that has been stored on them, this would be a useful purchase.

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.



...mory Upgrade

...ght think that 256K of memory is more than enough, but as you use ...achine for more ambitious applications, especially if you have a ...drive, you'll find an upgrade to 512K useful.

...allation is simple enough. Just slot a few memory chips into the board, ...ware — opening the machine may invalidate the guarantee. ...extra memory will provide you with a large RAM disc, so some ...ations programs will run faster and if you have a Print Spooler utility, ...e 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.

Are you a frustrated 8256 owner, fed up with that 'Insert disc for drive B:' message? If so, it's time to stuff your Joyce full of chips and get a second drive.

Keeping up with the 8512s

Citadel's 8256 expansion hardware kit (you provide the hacksaw and elbow grease)

Memory expansion

By far the cheapest way to upgrade an 8256 is to forget the second drive and concentrate on its memory.

Provided you take your time and follow instructions, it's not difficult. Open up the monitor and you'll find eight sockets, which is where the chips go.

You then have to let the Central Processing Unit know that it's now operating as an 8512.

That's all there is to it. You now have 368K to play with on Drive M, instead of a paltry 112K. 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 (fitted)
Expert Systems
£34.95
£39.95 (including fitting)
MEAC
£18.95
Nabitchi
£29.90
Screens Microcomputers
£26.05
Silicon City
£25.95 (Instructions are available for £1, which will be deducted from the cost of an upgrade if purchased)
Sili-Comms
£22.00
£32.00 (including fitting)
Technology Research
£59.00
£69.00 (including fitting)
Timatic Systems
£49.00

Double your drives

Memory expansion is only one step up the ladder; for the true equivalent of an 8512 you need to add a second 3" drive.

Installing an internal drive is rather more difficult than inserting eight chips, but it's well worth the effort. The PCW was designed with upgrades 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. A word of warning though: incompatibility has been reported with certain drives.

If this does sound a little daunting, you might prefer to have Dictaphone, which handles the official Amstrad upgrades, or a local dealer, to do the work.

8512 UPGRADES
Citadel
£189.95
Dictaphone
£182.85
£257.03 (complete)
Expert Systems
£179.95
£184.95 (including fitting)
Nabitchi Computing
£149.50 (drive only)
£179.40 (full upgrade)
Silicon City
£139.00 (drive only)
(See try-before-you-buy-instructions offer above.)
Soli-Comms
£140.00 (drive only)

Gaining extra inches

Though 3" disks have the distinct advantage of being fairly robust, they're also almost unique to Amstrad. Despite price cuts they're still over twice the price of 5¼" floppies.

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 as far as CP/M is concerned. This may be fitted directly to the internal connector or via a special interface socket.

The expansion is the same as adding an internal drive, and that extra 720K is enough to store vast amounts of data. You also have the opportunity of interchanging information with many other machines, including PCs, if you have conversion software. But make sure you buy a 40- and 80-track drive, since some programs won't work with 40-track models, but that speed is more reliable.

DRIVE INTERFACES
GAMMA DISK INTERFACE
Technology Research
£49.00

The **Gamma Disk Interface** is available complete with a selection of Mitsubishi drives, including a twin 3½", for £299, which really gives you storage power.

UNIFACE
Silicon Systems
£49.95
Silicon Systems interface is a plug-in unit, similar to the Gamma and the now unavailable **InterGem** from Gemini. It's available with an 80-track double-sided drive for £199.95.
Timatic
£209.00
Timatic takes a different approach with its 5¼" drive. You connect this internally and thread the cable out through the back of the case.
Peartree Computers
£139.00
Peartree's drive comes in a box large enough to contain a modem, interface, or even a third drive.
Box
£117.50 (40-track)
£207.25 (80-track)
Box produces two drives which include format software. Its MS-DOS utility is read only with its 80-track drive, but read and write with the 40 track costs £23.50.
Soli-Comms
£100.00 (3½" drive)
£110 (5¼" drive)

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.

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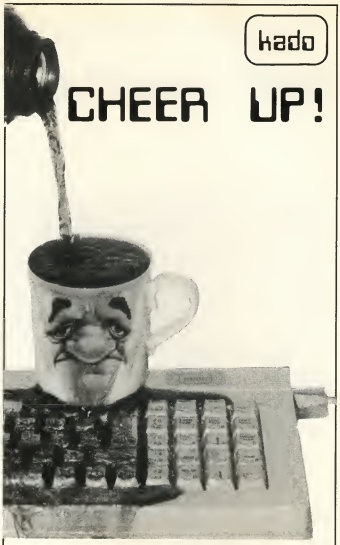

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To connect almost any peripheral to your PCW, from a printer to a joystick, you'll need an interface. And it's worth taking time to choose the interface that's right for you.

Good connections

The Spectravideo pack joystick and interface: all this and Tomahawk too.

Parallel/Serial interfaces

What's in an interface? In theory one is as good as another, but some contain extra features beyond the serial and parallel ports.

Amstrad
£49.95
Amstrad's **CPS 8256** isn't one hundred percent standard in its Centronics port, which could cause problems with certain printers.

Peartree Computers
£39.00
Somewhat cheaper, and solving the bit problem, Peartree's interface fits rather obtrusively on the side rather than the back of the micro.

RAM
£59.95
This ultra-slim interface comes complete with a printer lead.

SCA Systems
£57.50
SCA Systems' interface contains a real time clock, with battery back-up. This means that you can add date and time to files, from the operating system. There are two full duplex RS232 ports, one with full handshaking. Communications can be set at 300 to 19200 baud, and a terminal emulation program is included.

Soli-Comms
£30/£55 (with RGB) + £5 (with mouse port) + £10 (TV modulator)
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. A clock is also available from Soli-Comms, with a facility to store security codes and machine options.

Micro Control Systems
£48.24/£57.65
If you only need a parallel interface, consider Micro Control Systems single-port model. The addition of a serial facility boosts the price by almost £10.

Joystick Interfaces

Since the number of games appearing on the PCW has grown so dramatically, it's no surprise that there are several joystick interfaces available

JOYCE-STICK
£14.95/£24.95/£27.95
The first of the joystick interfaces is available in three different options. Cheapest is the neat little box itself, but chess enthusiasts can buy it with the highly-rated Colossus 4 program.

Kempston
£14.95
Kempston also produces the standard joystick interface for the Spectrum games computer and also has a PCW mouse.

Spectravideo
£29.95
While this may look expensive, Spectravideo's pack includes everything you need to take off into the heady world of flight simulations. The interface includes secure fixing holes and comes with the tough Quickshot 2 stick. Digital Integration's excellent Tomahawk battle helicopter simulator is also included, and as this normally sells for £19.95, the pack can be considered a bargain.

Printers

There are times when the PCW printer just doesn't provide high enough quality. Another dot matrix may be faster and produce better results, but the price of such an upgrade may outweigh its benefits.

Instead, most people will choose a daisy wheel, with its electric typewriter-quality printout.

The third option really is the state of the art. Laser-printer copy is good enough for typesetting.

Other considerations are speed, paper size and noise. Speed is measured in cps (characters per second), noise in decibels.

Compatibility can also cause problems. Most printers are unable to handle Locoscript files directly.

There are too many printers to list them all in a publication of this size; here are some examples though:

Panasonic's dot matrix **KX-P1081** provides 120 cps draft and 24 cps NLQ speeds and includes friction and tractor feed. RRP is £282.

Amstrad's new **DMP 4000** is a high-quality dot matrix with speeds of 200 cps draft, 50 cps NLQ. It has a 15" carriage and costs £401.35.

Star's **Powertype** offers 3 pitches at 18 cps and tractor and sheet feeds are available. The price is £229.

Qume's daisy wheel **Sprint** prices range between £549 and £2768. Speeds are from 22 to 90 cps.

Hewlett Packard's **LaserJet** can produce 8 pages a minute and costs £2695.

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 printers

The PCW is primarily a one-plug system which avoids compatibility problems. But it is possible to upgrade to a letter quality printer that's compatible with Locoscript.

ATT Systems
£573.85
This complete package of printer, interface, cables and software provides an equivalent print speed of 35 cps.

Wilding Office Supplies
£39.95
Wilding Office Supplies bundles the Brother **HR10** and Silver Reed **EXP500** daisy wheel printer. Normally these cost £199.95 each, but for a further £149.50 you get a complete package including cables, interface and NewWord, with mailmerge and spell check.

A second drive can really put you into the PC league. Of course it all costs, but it can turn a humble PCW into a micro to take on all competitors.

Hard choice

Winchesters

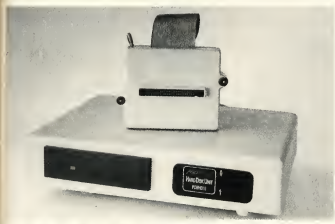
Imagine having 100 times the storage space of a standard 3" disc... You could always have your word processor, database, spreadsheet and accounts software ready to run — with plenty of memory left over for data!

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
£511.75
ACC Computer Services' drive has been so successful that the price has been reduced since our first edition. It's a 10Mb-capacity (that's 10,000 Kb) system which comes complete with disc controller, host adaptor for use with the PCW and power supply. It's fully CP/M-compatible and can use all CP/M user areas. As an added bonus it comes with the **Tasword 8000** word processor already installed.

ASD HARD DISK UNIT
Hugh Symons Distribution
£516.35/£688.85
A newcomer in the hard-disc market, **ASD**'s model is available in both 10-and 20-megabyte models, boasting fast access and storage for 6000 pages with the larger version.

It sits beneath the monitor and only needs a single power supply, and the PCW expansion socket is duplicated on the unit. Locomotive has enhanced CP/M Plus into CP/M HD for use with a hard disc and operating utilities are supplied, as are NewStar's **Shell** and **Spool** programs.



ASD's 10-Mb Hard Disc Unit: sits beneath monitor ready for fast access.

Hard-disc networks

A hard disc can be useful on a single-user system if bulk storage is needed, 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 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. The only thing that you have to be careful about is security, so that certain files may only be openable by certain levels of user.

AMSTORE
Northern Computers
£1,400
This system can couple 120 PCWs to the one network, and allows you to add more or less sophisticated micros, according to usage.

At its 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 very intelligent. Communicating such large amounts of information around a network calls for a program to ensure that everything reaches its correct destination. The demands made on the user by **Amstore** are very few though.

The system is easy to install, with its neat junction boxes. Obviously, to fully realise its potential, and to justify its cost, it is best suited to larger businesses, for whom it could be a godsend.

MINSTREL
HM Systems
£6995 upwards
HM Systems specialises in high powered PC systems and the **Minstrel** Winchester and network system was actually used by Amstrad itself for development purposes. The hard disks are available in 20- or 40-Mb versions. The 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. To use **Minstrel** with a PCW you'll need the **Amstrel** interface, produced by Honeysoft.

CONTACTS

ACC Computer Services
8 Water Street
Abergele
Clwyd LL22 7SH
0745-826234/825082

ATT Systems
16 Park Road
Kenilworth
Warwickshire CV8 2GF
0926-55914

Amstrad Consumer Electronics
PO Box 462
Brentwood
Essex CM14 4EE
0277-230222

Analytical Engines
PO Box 35
Eastleigh
Hampshire SO5 5WV

Box
22 Hendred Street
Oxford OX4 2ED
0865-717968

Cascade Games
1-3 Haywra Crescent
Harrogate HG1 5BG
0423-504663

Citadel Products
50 High Street
Edgware
Middlesex HA8 7EP
01-951 1848

Dictaphone Company
Regent Square House
The Parade
Leamington Spa
CV32 4NL
0926-38311

Expert Systems
Freepost
Northampton NN1 1BR
0604-24463

HM Systems
220 The Vale
London NW11 8HZ
01-209 0911

Hugh Symons Distribution
223-227 Alder Road
Parkstone
Poole
Dorset BH12 4AP
0202-745744

Kempston Micro Electronics
22 Linford Forum
Rockingham Drive
Linford Wood
Milton Keynes MK14 6LY
0908-690018

MEAC Designs
3 Little Croft
Yateley
Camberley
Surrey GU17 7BU
0252-879005

Micro Control Systems
Electron House
Bridge Street
Sandiacre
Nottingham NG10 5BA
0602-391204

Mobitchi
Merseyside Innovation Centre
131 Mount Pleasant
Liverpool L3 5TF
051-708 0123

Northern Computers
Churchfield Road
Frodsham
Cheshire WA6 6RD
0928-35700

Peartree Computers
St George's House
14 George Street
Huntingdon
Cambs PE18 6BD
0480-50595

RAM Electronics (Fleet)
Unit 16
Redfields Industrial Park
Church Crookham
Aldershot
Hants GU13 0RE
0252-850031

SCA Systems
61 Ferringham Lane
Ferring
Worthing
W Sussex BN12 5LW
0903-504444

Screens Microcomputors & Electronics
Main Avenue
Moor Park
Northwood
Middlesex
09274-20527

Silicon City
Milhlan
St Agnes
Cornwall TR5 0QE
087255-2112

Silicon Systems
Trafford Technology Centre
43 Elsinore Road
Manchester M16 0WG
061-848 8959

Soil-Comms
17 Sweyne Avenue
Southend-on-Sea
Essex SS2 6JQ
0702-335511

Technology Research
Unit 18
Central Trading Estate
Staines
Middlesex TW18 4XE
0784-63547

Tinatic Systems
Fareham Market
Fareham
Hants PO16 0L8
0329-236727/239953

Electronic communications have revolutionised the micro world. If your PCW can't talk to other computers yet, you're missing out on vital facilities.

The electronic oracle

Communications can take place on two levels. The simpler is between computers within one office or building. You could chain several PCWs together to access each other's information, so that you can use financial data which is stored on the acccounts department's minicomputer, for example.

Alternatively, you can connect up to one of the large information databases around Britain, or even abroad. Most of the important systems actually consist of several computers, each of which shares information with its partners. You dial the nearest and only run up local-rate calls.

This level of electronic communication provides countless services, for business and pleasure. There are up-to-the-minute current affairs reports, or you can communicate with other PCW owners from your keyboard. All you need is a socket for a telephone, a modem and a subscriber number and password.

The wonders of modem living

All these systems use the telephone lines to link you to their central computer. Information is transferred in the form of audio tones, which the large computer at the other end recognises. These audio tones are generated and co-ordinated by a small box called a modem, which attaches to the back of your PCW via the RS232 interface, and connects the computer to the phone socket.

The modem has to be set so that the signals from one computer can be understood by another. The speed at which you send information, the baud rate, has to be the same as the speed with which the receiving computer is prepared to receive it.

Also, computers have different ways of communicating alpha-numeric characters and codes for such actions as moving the cursor around the screen and moving to the next line before printing. All those have to be fixed on the modem or the receiving computer won't understand the PCW's information and requests.

But setting up isn't as difficult as it seems. The modem's instruction manual will tell you how to program the device while the users' guide to the database system you're logging on to will tell you about the communications standard it uses and, very often, which modem is recommended for communication. Alternatively, you can use a software package that takes over the whole initialisation routine.

There are basically two types of service: *reference* and *interactive*. *Reference* screens are selected from a list of options which appears once you gain access to the database. They include everything from weather information to trading on the stock market; international news to television, radio, film and theatre highlights; the texts of newspaper and magazine articles to good food guides.

Micronet offers a special **Bizznet** section aimed at the small business. Its 500 pages cover all areas of money management, including law, insurance, tax and mortgages. **Reed Employment** supplies an **Executive Jobsearch** and the watchdog section keeps an eye on consumer affairs. Solicitors, accountants and a business-computer consultancy can be mailboxed, and their replies to problems appear in this section, or individual replies can be produced at a cost.

MicroLink offers confidential legal advice from a firm of London solicitors. It also has daily news on government grants to industry, Financial Times information on new technology, a database dedicated to information on UK limited companies, an airline guide with full flight information, and a petroleum monitor.

On the leisure front, **Micronet** has successfully developed the area of electronic magazines with articles on computing, reviews and even gossip columns.

Interactive communication is another area. You can send messages to colleagues without hanging around, waiting for them to return to the office, order tickets, download telesoftware, or even take part in multi-player games. **Micronet** also allows you to send your company's figures downline to MAS accountants for detailed analysis, which is returned in hard-copy form by post.

There are three types of message service. The most common is the mailbox, which resembles an electronic, numbered pigeon-hole. When someone sends you a message they type in your number, key in the text and it's left in your box ready for you to log-on. You'll then be told there's a message waiting.

Mailboxes are secure so that only you can read your mail; hackers pose very little threat nowadays. A more important factor is to check what services the people you'll want to contact subscribe to; it's no use being on **Telecom Gold** if your main supplier is on **One to One**! However **Prestel** subscribers can now access **Telecom Gold** boxes to leave messages.

The business community still relies on telexes, and you can send them from your computer too. In the same way, a business which knows your mailbox number can use its telex machine to send you messages. **Micronet** offers particularly cheap rates for national and international telexes.

If you prefer a more immediate form of communication you can try a chat line which works in a similar way to CB Radio. You send a message and anyone can answer it immediately. It's a novel way of meeting people from all over the country for open discussion.

You can also order shopping or train, plane or theatre tickets by computer. Just access the catalogue in which the item you want is stored and tap in your choice of either your credit card number or the number of your computer account, then wait three days for the goods to be delivered or pick up your ticket from the station, airport or theatre. Alternatively, **MicroLink**'s **MicroSearch** can help you locate a source of a peripheral or program.

Communications also break down national barriers. If you need to access American databases, with their vast resources, or leave a message for an American colleague, **MicroLink** now has its own direct satellite link with the **Mnemonics** system; or you can use the **EEC Computer Centre** to communicate with over 600 European databases, all at a considerable saving on normal international costs.

If you own a modem, or can borrow one, and want to sample the services, both **Micronet/Prestel** and **British Monomarks** are offering demonstrations. For **Micronet** you'll need viewdata software and a modem capable of 1200/75 transmissions. Dial 01-618 1111 and give the ID as 4444444444 and the Password as 4444, when requested; for other computers outside London, contact **Micronet** direct on 01-278 3143. For **Monomarks** you'll need a 300/300 modem set for 7-bit even parity; the number is 01-405 6020 and follow the on-screen instructions.

Communications talk

The jargon of communications can be daunting so here's a brief round up of some of the more common terms.

Alpha-numeric Characters that include both letters and numbers.

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

Auto Dial Some modems allow you to type the database phone number into the computer. The modem then automatically dials that number.

Baud Data transfer, measured in bits per second.

Bulletin Board Like a board, on which you can pin notices, a bulletin board lets you display messages.

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

Frame A frame of information is equivalent to one or a number of textual screens.

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 no longer a major problem.

Log-on To access a comms system.

Password When you log-on you'll be asked for your password, a code made up of alpha-numeric characters. If the database doesn't recognise it you'll be refused access.

Privilege Not every user will be allowed into every area of a comms system.

Protocol The standard of language by which your computer communicates with another computer.

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

Sysop A *sys*tems *op*erator, responsible for running a system.

Telesoftware Programs which can be taken from an information database and downloaded over the phone line.

The cost of logging on

Some people are put off by groundless worries about the cost of computer communications. Make good use of services such as **Micronet** and **MicroLink**, which are aimed at the home and small-business user, and all you usually have to pay is a standard quarterly charge for using the information database (usually around £17.00) and the telephone connection charge at the local rate.

But costs can vary greatly if you register with a service under its more expensive corporate rates. With **Prestel** and **Telecom Gold** it is cheaper to subscribe through **Micronet** and **MicroLink**, though to fully benefit from the cheaper rates, you'll have to use them out of peak hours.

Once you've registered, the cost of services, such as sending a telex or hiring a mailbox, can also vary. **Micronet** is currently the cheapest, with low subscriptions, no minimum charge, free mailbox rental with unlimited free messages, and no connection charge, off-peak. However the situation can change quickly in this highly-competitive growth market, so check for current details.

With all services, you may have to pay a frame charge for some of the information which you access from the system.

Further good news is that by using Telecom's **Packet Switch Stream (PSS)** system, however far you live from the host computer, you pay only local-call rates, not long distance.

Data on bases

SERVICE/ CONTACT	E-MAIL	TELEX	NOTICE BOARD	RADIO PAGING	DATA-BASE	NOTES
COMET 0527-64274	•	•				Telemessages
EASYLINK 01-633 9577	•	•				Dial-a-gram; translation
MICROLINK 061-456 8383	•	•	•	•	•	Part of Telecom Gold. Translations; tele-shopping; 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 USMBXs; message storage and remote sending

Modems may appear to be intimidating, but we demystify the anonymous black boxes.

A la modem

The Magic of Modems

The Magic Modem is a standard, basic model which is easy to understand and use. We've picked out its controls as well as noting some of the features that it lacks, but which appear on more expensive products.

Apart from the phone cable, which connects to a dual jack in tandem with the telephone itself, so that you can dial, and the power supply cable, the back of the unit contains the port for the RS232 cable.

Equipment which is connected to the telephone system must carry British Telecom's seal of approval. It's not illegal to sell it, but it is to use it. The Magic Modem is approved though.

Status lamps indicate that everything's working properly. Apart from the obvious Power signal, Carrier shows that the computers are communicating while T(ransmit) D(ata) and R(eceive) D(ata) are self explanatory. Dir, or Data Direction, is used in V22 transmissions.

The rate of data transfer is measured in bauds and indicated by a V number. 300 baud or V21 is used for electronic mail, close communications and bulletin boards. V23 is 1200/75 baud, used by the viewdata services such as Prestel. V22 or 1200 baud is used by US services and for fast, inter-computer communications, as is V22bis, 2400 baud. A rotary switch selects one, or puts the modem in neutral Test mode.

Other features:

Ring detect, available as an optional extra with the *Magic Modem*, informs the computer that another user is trying to contact it and can instigate auto-answer facilities.

Auto answer means that the modem detects incoming calls and answers them without the need for a human operator.

Auto dial lets you send a number from the computer and dials it automatically.

A battery back-up can provide a directory for commonly-used numbers and passwords.

Some modems are able to detect the baud rate during transmissions.

Hayes Compatibility indicates a fully intelligent product, so that all controls can be sent from the computer, eliminating the need for any buttons on the modem at all.

Top-of-the-range models often include features such as: timers, to send a pre-prepared file at a specified time; carrier strength indicators, to warn of weak signals; and monitors, to provide audio confirmation of communication or to allow normal phone operation.

Modem models

AMSTRAD

The official PCW modem is a badged Pace **Nightingale** but the £99.95 includes software and a free first-quarter subscription to Micronet.

DATAPHONE

At only £59.95, **The Dataphone** offers a V21/23 modem with auto dial and answer; the catch is that it's not approved. However it is available with an interface (£49.95) and the **Kiwichat** software (£39.95) in a single package for £149.85. If you want an approved modem, Dataphone can also supply the **Magic Modem**, as featured above (£85). All prices exc. VAT.

KDS

The £172.50 **Chatterbox** is a V21/V23 model with auto dial and answer plus a directory. It comes complete with RS232 and Centronics interface built in.

MEKTRONIC

These three approved modems from GEC are V23 and are designated **1223** (£89.99) which is line powered so doesn't require a socket; **1223A** (£143.40) which adds auto answer and disconnect on loss of signal or command; and the **1223B** (£195.50) which has auto dial.

MIRACLE TECHNOLOGY

The **WS2000** (£143.75) is an approved, basic home model featuring V21 and 23. For more features the **WS4000** models are Hayes compatible and start at £172.50 for the V21/23, with the addition of V22 raising the cost to £460 and V22bis to £638.25. They come with a built-in interface. The **WS3000**s offer auto dial, answer and baud identification plus a directory. Available in V21/23 (£339.25), and with V22 (£569.25) and V22bis (£747.50), all are Hayes compatible and feature an audio monitor.

PACE

The **Nightingale** home-use V21/23 approved modem (£114.95) is also available as the Amstrad modem or from Sage with the **Chit Chat Combo** software (£199.99). For a fully Hayes-compatible series at the other end of the market, featuring time, monitor, carrier strength indicators and detect lines, try the **Series IV** modems available in V21/23 (£304.75) or with V22 (£550.85) and V22bis (£711.85).

All include auto answer and dial, with 64 number directories, and baud recognition.

ROBERT EDWARDS

Commtel-X (£228.85) offers V21/23 plus 1200/1200 baud in half duplex protocol, used primarily for fast data transfer. It's approved and offers auto dial and answer, plus a 9-number directory. It comes complete with interface, leads and the **Comm+** software.

SAGE

A V21/23 approved basic modem available with Sage's **Chit Chat** software in **E-Mail** (£199.99), **Viewdata** (£199.99) and **Combo** (£239.99) packs, plus free membership of One to One and Micronet.

TANDATA

These two models are both approved and offer auto dial and 8-number directories. The **TM110** (£113.85) is V23 only, making it most suitable for Prestel use.

The **TM512** (£293.25) adds auto answer and baud identification and is Hayes compatible.

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(4) ADD NEW CLIENT	(9) PRINT CLIENTS LIST	(14) STOCK VALUATION
(5) EDIT CLIENT	(10) ADD TO STOCK LIST	(15) STOCK RE-ORDERS

LINKUP SYSTEMS ACCOUNTS SYSTEM ENTER NUMBER		
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(2) INVOICE PROGRAM	(4) CASH FLOW ANALYSIS	(6) EXPANSION

LINKUP SYSTEMS ACCOUNTS SYSTEM ENTER NUMBER		
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(3) CROSS REFERENCE	(11) CROSS REFERENCE	(19) EDIT RECORD
(4) ACCOUNTS PAYMENTS	(12) ACCOUNTS PAYMENTS	(20) EDIT CATEGORIES
(5) SEARCH RECORD	(13) SEARCH RECORD	(21) BANK STATEMENT
(6) EDIT CATEGORIES	(14) EDIT CATEGORIES	(22) CASH TRANSACTIONS
(7) ANNUAL ANALYSIS	(15) ANNUAL ANALYSIS	(23) TRADING SUMMARY
(8) EDIT RECORD	(16) EDIT RECORD	(24) MENU 2

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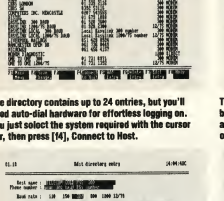
It's been called the Rolls Royce of PCW communications software, and **Chit Chat** is a joy to use. It comes in three versions, for E-Mail, Viewdata, and Combo, (which handles everything), and it's also available complete with a basic modem.

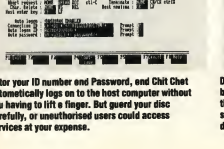
Chit Chat makes excellent use of the function keys linked to menus. Certain options remain constant, such as Help on [f8], and [f1] is always the way out of a wrong keystroke.

The Text Editor lets you create your message before you even dial your 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. You can also save frames, to study at your leisure.

The Task facility allows you to send a file, prepared with the editor, when you're away from the terminal, which is useful if you want to despatch a batch of E-Mail when phone charges are cheap. There's a software clock for setting remote commands.



The directory contains up to 24 entries, but you'll need auto-dial hardware for effortless logging on. You just select the system required with the cursor bar, then press [f4], Connect to Host.



Enter your ID number and Password, and Chit Chat automatically logs on to the host computer without you having to lift a finger. But guard your disc carefully, or unauthorised users could access services at your expense.

Chit Chat can automate much that's tedious about communications, particularly if you use electronic mail a lot or are a subscriber to a number of systems.

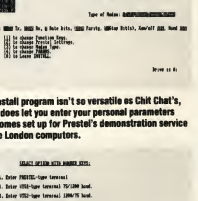
KIWICHAT

Dataphone
£45.95
Though this comes ready to use with Dataphone's unapproved modem, **Kiwichat** can be used with other models. While it's nowhere near as versatile or simple to use as **Chit Chat**, it's considerably cheaper and contains one or two very useful features.

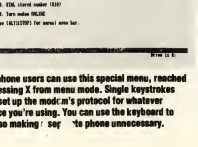
Its control system can be rather clumsy to learn, though the main Dataphone menu is a lot clearer than the smaller ones which run along the bottom of the screen. Luckily the instructions are clear.

Facilities include the ability to set up the modem automatically and establish certain basic system parameters. Data can be filed or files, prepared with a word processor, can be sent to the serial port.

The most impressive area is the handling of viewdata screens. Two pages can be displayed side by side or dumped to disc or the printer, and there's even a graphics-editing facility. The keyboard is also dedicated to Prestel's special characters.



The install program isn't so versatile as Chit Chat's, but it does let you enter your personal parameters and comes set up for Prestel's demonstration service on the London computers.



Dataphone users can use this special menu, reached by pressing X from menu mode. Single keystrokes then set up the modem's protocol for whatever service you're using. You can use the keyboard to dial, so making / sep te phone unnecessary.

COMM+

Margolis
£86.25
Comm+, available with several modems, is a comprehensive system, though it requires a lot of work to use it. Rather than putting you directly in command, it's a communications program generator, equally suited to direct or modem-linked communications. Though it contains a wide range of features and lets you create powerful results, it's not suited to novices.

NEWCOMM C-STAM/DATAMAIL

NewStar
£49.00/£39.95
NewComm C-STAM is aimed at inter-computer links, for file transfer between PCWs or to PCs, using a serial interface. **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 and display two side by side.

MODEM 7

CP/M Users Group
There's communications software to be found in public-domain libraries, such as the one run by the CP/M Users Group. Of these free programs, **Modem 7** is held in high regard, and though it lacks many of the flashier features, such as an auto-dial directory, it can fulfill a useful service for the price of a disc.

CONTACTS

Amstrad
PO Box 462
Brentwood
Essex CM14 4EE
0277-230222

CP/M Users Group (UK)
72 Mill Road
Hawley
Dartford
Kent

Dataphone
22 Alfric Square
Woodston
Peterborough PE2 0JP
0733-230240

Pace
Juniper View
Allerton Road
Bradford BD15 7AG
0274-488211

Robert Edwards
236 North Road
Hertford
SG14 2PW
0992-54118

Sagesoft
NEI House
Regent Centre
Gosforth
Newcastle upon Tyne NE3 3DS
091-284 7077

Tandata Marketing
Albert Road North
Malvern
Worcs WR14 2TL
06845-68421

KDS Electronics
15 Hill Street
Hunstanton
Norfolk
PE36 5BS
04853-2076

Margolis
105 Foundling Court
Brunswick Centre
Marchmont Street
London WC1N 1AN
01-278 3032

Miracle Technology
St Peters Street
Ipswich IP1 1XB
0473-216141

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

Considering it only has a green screen and feeble beep, there's now an amazing selection of high-quality games for the PCW.

Fun and games

THE FOURTH PROTOCOL

You've read the book and seen the film, so now play John Preston yourself, as you try to discover the mole in MI5 and uncover the whereabouts of the Russian bomb, all in **The Fourth Protocol**.

This is one of the most gripping strategy games produced, capable of generating an incredibly realistic sense of suspense. Divided into three parts, it uses a simple icon-control system to put you in charge of operations.

At first you make phone calls, and assign agents to tail suspects, all the while trying to keep your superiors off your back. Part two is more of a traditional adventure, though again it uses icons rather than verbal input. Then comes the test of your field abilities as you command an SAS raid on the Russian hideaway.

If it all sounds complex, it is — so much so that a book of playing hints is available from Century Communications. But if you're a fan of Frederick Forsyth and games requiring lots of thought, the future of the world can be in your hands.

THE FOURTH PROTOCOL
Ariolasoft
£15.99
Type **Strategy**

BRIAN CLOUGH'S FOOTBALL FORTUNES

When is a computer game not a computer game? When it comes with a board, counters and Bank of Toytown money. **Brian Clough's Football Fortunes** is a Monopoly-style game of strategy and trading, as two to five team managers try to create squads to top the League, win the FA Cup and take on Europe.

While the action takes place around the board, the computer keeps track of how all the other teams are doing, constructs league tables and even rolls the dice. The core of the game is the wheeling and dealing between players though. It's a brilliant idea that should be a family favourite.

BRIAN CLOUGH'S FOOTBALL FORTUNES
CDS
£17.95
Type **Board game**

THE GROWING PAINS OF ADRIAN MOLE

Everybody has heard of **Adrian Mole**, the Leicester schoolboy whose diary is an open book. Now you can re-live his adolescent angst in this adventure, trying to score popularity points as you progress through the year. Multiple-choice input ensures that you're not hampered by an uncomprehending micro. Fans of the character will love it.

THE GROWING PAINS OF ADRIAN MOLE
Virgin
£14.95
Type **Adventure**

ASTROLOGY STARTER PACK

There's a world of difference between newspaper horo-scopes and serious astrology, but few people can be bothered with the complex calculations necessary to draw up a birth chart. **Astrocalc** produces a range of specialist programs to take care of the hard graft, leaving you time for inter-pretation.

ASTROLOGY STARTER PACK
Astrocalc
£15.50
Type **Hobby**

STARGLIDER

Starglider combines the sophistication of a flight simulator with the accessibility and excitement of an arcade game, as you zoom and swoop over the surface of a planet, doing battle against a strange assortment of enemy craft and ground forces.

You can play the game in two ways. At first most people will be satisfied just to take off and fly around, shooting at things. It's a good way to acquaint yourself with the alien landscape and technology but to get the most out of the program you'll eventually want to apply yourself to a mission, on which the fate of your planet depends.

The first problem is to discover how to replenish your fuel supplies. Luckily there are hints in the 64-page novella that accompanies the game, and helps to set the scene. It shouldn't take long before you're totally captivated by the smooth, fast-moving, wire-frame graphics, which create an incredible sensation of speed.

The game is compatible with the **Kempston joystick** and **mouse, Cascade Joyce-Stick** and **AMX mouse** for easy control.

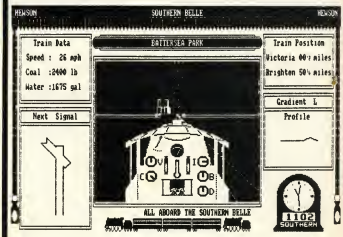
STARGLIDER
Rainbird
£24.95
Type **Arcade/Simulation**

HEATHROW ATC/ SOUTHERN BELLE

Fancy a new job? How about driving a steam train? Or keeping an eye on the air traffic at Heathrow? You'll need all your concentration to succeed with this double pack, which puts you in the hot seat.

Technically accurate, both present fascinating challenges as you try to keep control over a multitude of variables. **Southern Belle** also features incredibly realistic graphics of the London-to-Brighton run, seem from the cab of a 1930s King Arthur Class locomotive, under a variety of conditions. It'll take months to master either of these fascinating alternatives to accountancy or word processing.

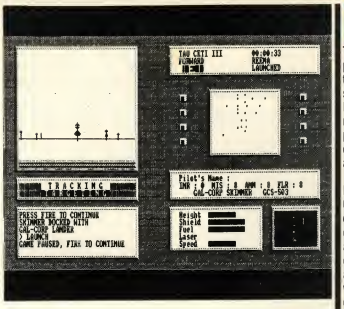
HEATHROW ATC/SOUTHERN BELLE
Hewson
£16.95
Type **Simulation**



TAU CETI

The sun sinks slowly over an alien landscape... There has never been anything quite like **Tau Ceti**. It combines complex strategy with amazing graphics to place you in a skimmer, moving around the cities of a distant planet, which is guarded by evil androids. You'll have to be quick on the trigger, but blasting aimlessly will only get you killed — beating **Tau Ceti** calls for lots of thought. Add a 'solid' 3D view of the planet and you have a classic. Watch out for the sequel too.

TAU CETI
CRL
£19.95
Type **Arcade/Strategy**



HEAD OVER HEELS

The authors of last year's hit, **Batman**, are back with another masterpiece of timing, dodging and problem solving. This time they literally double your pleasure because you have two characters to control. You go **Head Over Heels**.

Though the style is superficially the same as the earlier game's, there are many new obstacles. Head and Heels are two symbiotic partners, each with his own special abilities; Heels is fast while Head can jump higher. It's up to you to discover how to use these powers.

The first thing is to find a way of re-uniting the two, who are held captive in separate cells in Castle Blacktooth. You can freely swop between them as you look for a route. Once they're together they can try to escape or take on the evil empire and overthrow the dictatorship.

Odd characters that you'll encounter include Reincarnation Fish, Hush Puppies and Cuddly Stuffed White Rabbits which grant special powers to either hero. It's all very surreal, amusing and addictive. Highly recommended.

HEAD OVER HEELS
Ocean
£14.95
Type **Arcade**

FRANK BRUNO'S BOXING

Take on the world in this arcade simulation of the pugilistic art — and without the risk of a broken nose. You get an over-the-shoulder view of Bruno as he battles an increasingly ferocious line-up, including The Canadian Crusher, Antipodean Andy and finally Peter Perfect of the USA.

The controls may take a little getting used to, as there are eight keys for defence and punches, but soon you'll be able to time those drives and pound your opponent onto the mat. The animation uses large, smooth characters. A surprisingly successful game for fans of the sport.

FRANK BRUNO'S BOXING
Elite
£19.95
Type **Sport Simulation**

SCRABBLE

This superb version of the classic word game **Scrabble** is just the thing for addicts who can't find a partner or who want to brush up their technique. One to four players can compete in a game which includes all the standard rules, with the computer playing any or all of the contestants. It can be set at one of four levels of difficulty, but beware, because at its best, its vocabulary is likely to be broader than all but the best Scrabble champions.

SCRABBLE
Virgin/Leisure Genius
£19.95
Type **Board Game**

THE LEATHER GODDESSES OF PHOBOS

This is the sort of game that puts the flash in Flash Gordon, the sort of story that gets science fiction a bad name. Every care has been taken to recreate the tacky tone of '30s pulp fiction in this recent offering from American adventure masters, Infocom.

If the idea of being kidnapped by the **Leather Goddesses of Phobos** and held on a Martian moon isn't enough, the pack also includes a 3D comic, complete with cardboard red-green glasses, and a scratch-and-sniff card, which tie in with the action at crucial points.

Those of a sensitive nature should note that the game can be played at three levels of rudeness, Tame, Suggestive and Lewd. Some degenerates who choose the last enjoy their captivity so much they don't even try to escape this hilarious exercise in highly dubious taste!

THE LEATHER GODDESSES OF PHOBOS
Infocom
£24.99
Type **Adventure**

TOMAHAWK

There's a lot to be said for taking a US Army Apache up for a spin because, while it presents problems all of its own, getting started is simple when you've got rotors.

Tomahawk is a carefully-researched program which contains four missions, ranging from training to full combat, and variable flying conditions. It all takes place over a realistic landscape, seen in line-perspective, so that you can support allied ground forces and clear sectors of enemy troops. An excellent way to fly a fantastic machine.

TOMAHAWK
Digital Integration
£19.95
Type **Simulation**

GUARDIAN/BLAGGER

A double pack of traditional computer games. **Guardian** is a shooting game set across a scrolling landscape. In **Blagger** you run around and collect keys.

While these are far from sophisticated, with primitive graphics, they are undemand-

ing fun, and **Guardian** features a facility to turn itself into a dummy spreadsheet screen — useful if the boss comes in!
GUARDIAN/BLAGGER
Alligata
£14.95
Type **Arcade**

CLASSIC COLLECTION

A triple pack consisting of **Shoot-It**, which is Space Invaders with amusing aliens but no shields; **Munch-It**, which is rather better, a close copy of the Pac-Man maze game; and **Hop-It**, which turns out to be **Frogger**, a test of timing. All three are veterans of the arcades, but are unlikely to have lasting appeal on the PCW.
CLASSIC COLLECTION
Tynesoft
£14.95
Type **Arcade**

THE PAWN

There are adventures... and then there is **The Pawn**. Author Magnetic Scrolls is the only programming team to give Infocom a run for its money — and it's British!

The Pawn is set in the magical world of Kerovnia as King Erik's reign begins to wane. The banishment of the dwarves, who were renowned for their smooth malt whisky, led to understandable disillusion amongst the citizens. The only people who don't want to see the return of the dwarves are a brewery and a spring water company.

Unlike most adventures, that is all that you're told — you even have to discover the aims of your quest. Nor does **The Pawn** boast thousands of locations. However, it does have a fantastically sophisticated language parser, letting it reply to most commands with apparent intelligence.

This high degree of artifical intelligence also allows you to interact with other characters, who seem to follow their own lives. However, your actions will have effects within Kerovnia. The beautifully-drawn pictures, available with two kinds of shading, add to the atmosphere, and the inclusion of a novella helps make **The Pawn** an enchanting, totally absorbing adventure in another land, which is well worth the price.

THE PAWN
Rainbird
£24.95
Type **Adventure**

BOUNDER

Bounder is a maddeningly addictive test of reactions and control as you guide a bouncing tennis ball along the craziest crazy paving imaginable. There are special slabs that give you extra powers, mystery bonuses, some of which are more useful than others, and flying objects to avoid. The scrolling scenery, seen from above, keeps you on your toes as you're never sure what will come next. Not for arcade novices, but addicts should love it.
BOUNDER
Gremlin
£14.95
Type **Arcade**

MIDITRACK PERFORMER

A chance for musicians to link their MIDI-compatible instruments to their PCW, letting it act as a sequencer, hold data for sounds or provide compositional aids. **Miditrack Performer** includes interface and software and EMR can also provide suitable keyboards from Casio or Yamaha.
MIDITRACK PERFORMER
Electromusic Research
£129.85
Type **Hobby**

ANNALS OF ROME

At last, a chance for armchair Caesars to indulge themselves, courtesy of masters of this genre, PSS. You make the decisions for the ruling party in the Senate from 273 BC, the year that the Roman Empire took control of the whole of Italy.

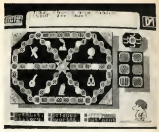
History comes alive in **Annals of Rome** as you have to cope with up to 13 independent hostile powers, plus the risks of civil war. Deploy forces and commanding officers wisely because failure will result in loss of support at home. With taxation and inflation to keep under control as well, you may think twice before you're rude about politicians in future! A carefully-researched historical simulation for thinkers.
ANNALS OF ROME
PSS
£24.95
Type **Strategy**

TRIVIAL PURSUIT

The cult questions game **Trivial Pursuit** makes an impressive PCW program too, with two advantages over the original — the addition of sound and graphics. You may have to name a tune or identify an island from its outline, for example.

This is a game for the family. The PCW merely asks the questions, and it's up to the player to shout out the answer and type in whether they were correct — and no cheating!

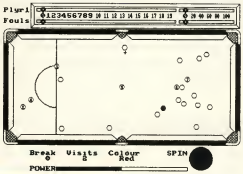
The program also throws the dice and indicates which squares you can land on, which



is useful if you can never work out the best way round the board. Other features include the ability to set a time limit for answering and an animated question master, TP.
TRIVIAL PURSUIT
Domark
£17.95
Type **Board Game**

STEVE DAVIS SNOOKER

While the PCW's green screen is ideally suited to simulating the green baize of the snooker table, the monochrome problem is taken care of by numbering the colour balls in **Steve Davis Snooker**. Shots are aimed with a cursor, after which power and then spin are selected. There are options for one- and two-player games, and as alternatives you can relax with billiards or pool. A highly-addictive diversion for anyone who's ever thrilled at an expert break on TV. Great value.



STEVE DAVIS SNOOKER
CDS
£14.95
Type **Sport Simulation**

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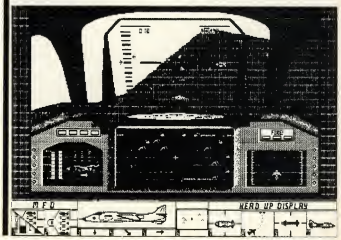

STRIKE FORCE HARRIER
Mirrorsoft
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Type **Simulation**

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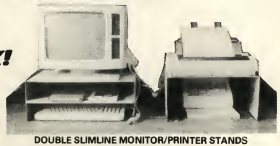

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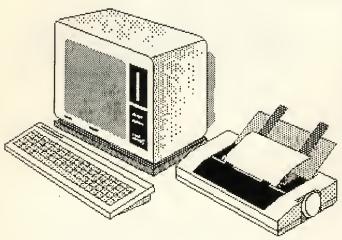

Why buy Pascal? Because it is an ideal language to learn if you want a career in computer programming. It helps you to structure your work, it allows you to write self-documenting programs that are easy to debug and maintain. Compared with Basic it makes serious programs quicker to write and faster to run. Most university computer science departments teach using it.

Why buy Pro Pascal? Firstly because it works. Pro Pascal was first released in 1981; it is now used by many thousands of professional and private programmers around the world. It has been validated by the BSI to conform to the international standard for Pascal. You're not learning a dialect language you'll need to unlearn next year.

Pro Pascal is also available on IBM PC Compatibles and 32 bit machines like the Atari ST, so you can move your programs onto bigger machines whenever you like. It is supplied on a 3" disk with a 200 page spiral-bound manual.

Prospero Software is located in London. For more information call 01-741 8531. Credit card orders are accepted by telephone. To order Pro Pascal by post send £49.95 + £2 p&p (+ 15% VAT in UK) to Prospero Software Ltd, 190 Castelnau, London SW13 9DH, England.

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Summary **Improbable creatures and alternative universes with a touch of humour. Multiple commands acceptable.**

THE TRIALS OF ARNOLD BLACKWOOD
Adventure
£15.95
Summary **Wacky quests for Lord Erebus and his ear trumpet. Reactions to the humour will be highly personal.**

INFOCOM ADVENTURES
Infocom
(Classics) £28.75/£23.00
Atmospheric text, clever responses, strong story lines with long devious puzzles and lavish packaging make **Infocom Adventures** well worth the relatively high price.

Zorks I, II and II were among the earliest programs but this vast underground adventure still holds up well today, and can provide a good introduction, as does **Wishbringer** or **Moonmist**. Another good starting point is the zany **Hitchhiker's Guide to the Galaxy**, or for more serious sci-fi, **Planetfall**.

Unusual adventure settings appear in **Cutthroats** (piracy) and **Ballyhoo** (the circus). Detectives will find clues in **The Witness** and **Suspect**.

Only advanced adventurers should attempt **Spellbreaker**, third part of the **Enchanter** and **Sorcerer** trilogy. 8512 owners can make the most of their machines with **A Mind Forever Voyaging** and **Trinity**.

BATMAN
Ocean
£14.95
Summary **Problems of a physical and mental kind as you guide the Caped Crusader in search of Robin. Simply superb.**

FAIRLIGHT
The Edge
£14.95
Summary **The closest an arcade game has come to an adventure. Brilliant quest inside a carefully-conceived castle. Watch out for the sequel.**

GRAHAM GOOCH'S TEST CRICKET
Audiogenic
£19.95
Summary **Careful simulation of the sport with two playing Modes. Cricketers could love it but the unconverted will find it slow.**

CLASSIC INVADERS
Digita
£12.95
Summary **The first PCW game, now decidedly long in the tooth and overpriced. For addicts only.**

Brain games

COLOSSUS 4 CHESS
CDS
£15.95
Summary **Probably the toughest contender in the PCW chess stakes, only let down by a rather unattractive display. Versatile options.**

CYRUS II CHESS
Amsoft
£15.95
Summary **Great graphics with 3D or 2D options and multiple game features, such as replaying a move. Cursor control only.**

3-D CLOCK CHESS
CP Software
£19.95
Summary **Attractive 3D display and on-screen chess clocks with facility to play timed games. Algebraic move entry and no 2D option.**

BRIDGE PLAYER
CP Software
£19.95
Summary **Good version of a difficult game to convert. You play South and the PCW keeps score. Useful for practice.**

SAS RAID
CRL
£14.95
Summary **Primitive strategy game which now appears overpriced, though it can prove an amusing diversion.**

Contacts

Advantage
33 Mallyns Close
Chinner
Oxon OX9 4EW
0844-52075

Alligata Software
1 Orange Street
Sheffield SW1 4DW
0742-755796

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PO Box 10
Sunderland SR1 3PY
091-567 3395

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01-836 3411

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0442-51809

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12 Chiltern Enterprise Centre
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0734-303663

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Beckett Road
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CP Software
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The Hill, Burford
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0993-823463

CRL Group
CRL House
9 Kings Yard
Carpenters Road
London E15 2HD
01-985 2391

Digita International
Kelsey House
Barns Road
Budleigh Salterton
Devon EX9 6HJ
03954-5059

Digital integration
Watchmoor Trade Centre
Watchmoor Road
Surrey GU15 3AJ
0276-684959

Domark
Domark House
22 Hartfield Road
London SW19 3TA
01-947 5622

The Edge
36/38 Southampton Street
London WC2E 7HE
01-831 1801

Electromusic Research
14 Mount Close
Wickford
Essex SS11 8HG
0702-335747

Elite Systems
Anchor House
Anchor Road
Aldridge
Walsall WS9 8PW
0922-55852

Global Software
PO Box 67
London SW11 1BS
01-228 1360

Gremlin Graphics Software
Alpha House
10 Carver Street
Sheffield S1 4FS
0742-753423

Hewson
Hewson House
56b Milton Trading Estate
Milton
Abingdon
Oxon OX14 4RX
0235-832939

Infocom
Activision (UK)
Activision House
23 Pond Street
London NW3 2PN
01-431 1101/2992

Infocom Classics
Softsel
Softsel House
Syon Gate Way
Great West Road
Brentford TW8 9DD
01-568 8666

Interceptor Micros
Mercury House
Calleva Park Industrial Estate
Aldermaston
Berks RG7 4GW
07356-77421

Rainbird
74 New Oxford Street
London WC1 1PS
01-631 5170

Melbourne House (Publishers)
Melbourne House
60 High Street
Hampton Wick
Kingston Upon Thames KT1 4D8
01-943 3911

Mirrorsoft
Maxwell House
74 Worship Street
London E2A 2EN
01-377 4744

Ocean Software
6 Central Street
Manchester M2 5NS
061-832 6633

PSS
452 Stoney Stanton Road
Coventry CV6 5DG
0203-667556

Tynesoft
Addison Industrial Estate
Blaydon upon Tyne
Tyne and Wear NE21 4TE
091-414 4611

Virgin
2-4 Vernon Yard
Portobello Road
London W11 2DX
01-727 8070

EDUCATION

From typing to French revision, there's a tutor in the machine. We review what the PCW can teach you to teach yourself.

Personal comp-tutor

Type right

A word processor lets you correct your errors more easily than a typewriter, but you're still not realising your PCW's full potential if you can't touch type.

Even if you type only 1,000 words a week, at 20 words per minute, a reasonable speed for a untutored typist, you're still losing four whole hours a week compared with a 60 wpm typist.

If you want to be able to tap away at the keyboard at a regular speed, with scarcely an error, there's a choice of three tutorial programs available, and as each costs the same, your decision will rest on their styles.

Iankey is versatile and progressive while **Touch 'n' Go** teaches in a traditional style. But for sheer fun, **Typing Tutor** takes the biscuit. Still, whichever way you choose, the twenty four hours it takes to learn to touch type is as nothing compared with the time you can save.

IANKEY

Iancyst
£24.95

This program includes a complete tutor, a two-fingered touch-typing trainer and a crash course for beginners, which takes only three to four hours to teach keyboard recognition. It aims for 40 wpm.

Iankey's approach is informal and goes against the grain of traditional typing practice. You're allowed to look at the keyboard but shouldn't need to as the keys are shown on-screen.

There's also less emphasis on the home keys, where the fingers normally rest and you're not required to correct errors while typing, though a full error report is generated during the lesson. You can customise lessons for yourself, or for training employees.

TOUCH 'N' GO

Caxton
£24.95

If you prefer a more traditional approach, **Touch 'n' Go** is for you. It starts with the repetition of single letters, to teach your fingers the home key positions, then progresses to three-and four-letter words, with much initial repetition.

The drill approach may seem rather mechanical, but it is effective. Your score is carried over and you can easily revise or pick a later lesson. **Touch 'n' Go** expects you to work hard and apply yourself, but it does teach good practice from the start. The only grumble is the absence of on-screen prompts to help you identify keys, which leads to the temptation to look down at your fingers.

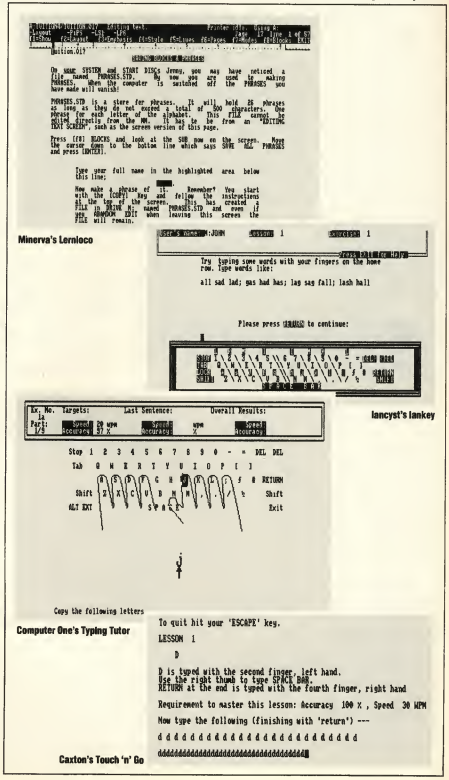
TYPING TUTOR

Computer One
£24.95

This is based on the classic Pitman method and boasts that it will teach you true touch-typing in 24 hours.

Typing Tutor is exceptionally well presented, on-screen and off; the manual includes hints on the ergonomics of good typing techniques, such as hand position.

The display includes the keyboard, complete with animated fingers, so you



should never need to look at your hands.

If you get tired of the exercises, there's a typing game, a variation of that old favourite, Hangman, to take the strain out of learning.

Let's interact

Imagine if you could have a tutorial help facility resident in your PCW for every program that you used. Well you can! Interactive learning is already available for a number of programs.

HANDS-ON CP/M/D-BASE II/ SUPERCALC

Micro Cal
£24.95 each
The **Hands On** tutors, for **CP/M** and **Supercalc** reside happily in an 8256's memory, along with a simulation of the host program, though **dBase II** requires a second disc. Each one takes you through a series of structured lessons, based on set exercises, and if you make a mistake you're told what went wrong.

You have to follow the instructions fairly closely because experimentation tends to confuse the program, but this is an innovative use of the computer as a learning medium.

LERNLOCO

Minerva
£16.95
This is actually a series of **Locoscript** files; you access the lessons with Edit and leave them with Abandon Edit, experimenting to your heart's content. They cover a variety of exercises, becoming quite advanced as they tackle specific practical tasks.

Minerva's **Learner Friendly** range also includes an easy- to-use database and spreadsheet, which can be used to familiarise yourself with the programs' basic principles.

General knowledge

Whether you want to brush up your Italian or teach your children how to distinguish between different types of mammal, there's a program to help you.

Unluckily some educational software depends very much on repetition and rote learning; unless you're dedicated to the task you could soon get bored. But there are also some truly interactive packages.

THE FRENCH MISTRESS/THE GERMAN MASTER/THE SPANISH TUTOR/THE ITALIAN TUTOR

Kosmos Software/£19.95 each

Whether you're learning a language for business or pleasure, Kosmos provides carefully-constructed courses. Each covers a minimum of 2,500 words, verb conjugation and stock phrases and you can also create your own lessons.

At all stages you control the rate and nature of the course. Once you've been through a lesson, you can test yourself. The programs' flexibility is probably their greatest asset, letting you select the learning pattern that suits you best. If there is a failing, it's that the tests are too forgiving; they recognise where words should end, and if you try to type in an extra letter, don't mark you down.

Of course, the absolute beginner would need some extra help on pronuciation, and possible a book of basic grammatical rules too. But as an aid to absorbing vocabularly, **The French Mistress** and her educational friends are excellent.

SCHOOL SOFTWARE: Various maths, spelling and science programs

School Software/£12.95 each

School Software is one of the most prolific producers of educational programs, and though they're solid rather than inspiring, used by a parent and younger child, or an older pupil with a positive attitude towards education, they're reasonably priced aids which could be used to clarify a text book.

Magic Maths is for 4 to 8 year olds while its sequel, **Maths Mania**, turns basic skills into a game for 8 to 12s. Better Spelling's skills are applicable to any age and it concentrates on the most common errors and confusion, such as prefixes, suffixes and irregular plurals, which it groups together in logical order. It's a demonstration of the computer's ability to provide structured rote learning.

School Software's other lessons are all intended for the secondary age range, from 12 upwards, and cover Goegraphy, Maths and science subjects. They provide the most basic hints concerning the subject, plus questions for revision purposes.

ANIMAL, VEGETABLE, MINERAL/ WORLDWISE

Bourne Educational Software
£14.95 each
Aimed at the young market, these programs use an artifical intelligence technique in which the computer has to deduce whatever the user is thinking of by asking questions from its database, which it updates every time it's played. This turns the child into the teacher, which is an entertaining way to stimulate curiosity.

At first the questions are simple, such as how many legs an animal has or if it barks. But the program really comes into its own when it asks questions to which the child doesn't know the answer, so that he or she is forced to refer to books, learning basic research techniques.

The program also asks for information to help distinguish the objects that its been taught to identify, which teaches data categorisation, the basis of artificial intelligence. These unusual and clever programs stimulate enthusiasm, rather than teach by mechanical means.

MICRO MATHS/MICRO ENGLISH

LCL
£24.00
Many people have a blind spot when it comes to even the most basic arithmetical skills. **Micro Maths** is a 24-lesson course in handling figures, from the very beginnings to O-level standard. You define your own pace, progressing from simple topics to algebra, geometry and statistics.

If, on the other hand, written or spoken English gives you problems, **Micro English** caters for the age range 8 to adult. It comes complete with an audio tape.

CONTACTS

Bourne Educational Software
Bourne House
The Hundred
Romsey
Hampshire SO5 8BY
0794-523301

Caxton Software
10-14 Bedford Street
Covent Garden
London WC2E 9HE
01-379 6502

Computer One
Science Park
Milton Road
Cambridge CB4 4BH
0223-862616

Iancyst
Omnibus Building
41 North Road
London N7 9DP
01-607 5844

Kosmos Software
1 Pilgrims Close
Harlington
Dunstable
Beds LU5 6LX
05255-3942/5406

LCL
Melody House
Greys Road
Henley-On-Thames
Oxon
0491-579345

Micro Cal
PO Box 561
Slough SL3 9DP
0753.75991

Minerva Systems
69 Sidwell Street
Exeter EX4 6PH
0392-37756

School Software
Meadowvale Estate
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010353-6127994

MASTERFILE 8000

FOR ALL AMSTRAD PCW COMPUTERS

MASTERFILE 8000, the subject of so many enquiries, is now available.

MASTERFILE 8000 is a totally new database product. While drawing on the best features of the CPC versions, it has been designed specifically for the PCW range. The resulting combination of control and power is a delight to use.

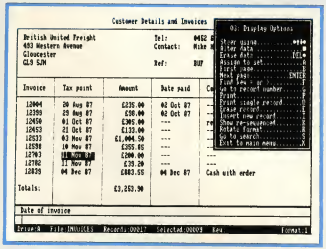
Other products offer a choice between fast but limited-capacity RAM files, and large-capacity but cumbersome fixed-length, direct-access disc files. MASTERFILE 8000 and the PCW RAM disc combine to offer high capacity with fast access to variable-length data. File capacity is limited only by the size of your RAM disc.

A MASTERFILE hallmark is the provision of multiple, user-designed display formats. This flexibility remains, but now it's even easier. With MASTERFILE 8000 you design your formats "live"; no more questionnaires, just move your format effects around the screen using the cursor keys!

Record updating is even easier than before — just steer your cursor to any field on the screen and then insert/erase/alter as required.

Special options are provided for handling dates and surnames, and column totals can be generated.

All screen work is done graphically — and hence we offer unique panel, box, and ruled line options. Choose the line spacing at pixel resolution — you will be amazed how much clearer 9-pixel lines are than the usual 8-pixels. (Study the picture.) And all this faster than CP/M normally lets you paint the screen! PCW printer functions, under menu control, are provided.

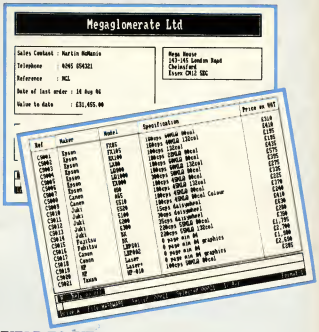


Keyed files are maintained automatically in key sequence, with never any need to sort. You can have unkeyed files too, where records can be inserted at any point in the file.

Any file can make RELATIONAL references to up to EIGHT read-only keyed files, the linkage being effected purely by the use of matching file and data names.

You can import/merge ASCII files (e.g. from MASTERFILE III), or export any data (e.g. to a word-processor), and merge files. For keyed files this is a true merge, not just an append operation. By virtue of export and re-import you can make a copy of a file in another key sequence. New data fields can be added at any time.

File searches combine flexibility with speed. (MASTERFILE 8000 usually waits for you, not the other way around.) You can even assign subsets of a file into one or more of seven pigeon-holes for subsequent reference or further manipulation.



FIELD-TO-FIELD CALCULATION is available, using any mixture of terms and arithmetic operators + — * / ( ).

MASTERFILE 8000 is totally menu-driven, fully machine-coded, and comes with example files and a detailed manual. We claim (modestly) that you will not find another filing system with such power, flexibility, and friendliness.

MASTERFILE 8000 costs £49.95 including VAT and P&P to anywhere in Europe. Elsewhere please add 20% for air-mail service. ACCESS/VISA/MASTERCARD orders are welcome, written or telephoned, quoting card expiry date. Make cheques payable to "Campbell Systems".

Our normal response is return of post, 1st class.

CAMPBELL SYSTEMS (Dept CGA)
7 Station Road, EPPING, Essex CM16 4HA,
England. Tel: (0378) 77762/3

However good a program may be, there's usually a way to make it better. Utilities improve even the best software, making it easier and more efficient to use.

Streamlining software

CP/M

UNIVERSAL SELF-START

Cornix
£19.95 (or £14.95 with any other Cornix program)
If the CP/M commands Submit, Profile and Paper give you nightmares, you'll save time and effort with this installation program. A **Universal Self-Start** disc sets the program parameters to handle full screen or 24x80 mode, single sheet or continuous stationery and typeface and quality. It then auto-runs the program.

EASYPIP

Focus
£19.95
Pip is one of the most useful CP/M commands, but remembering its protocols can cause problems. **Easypip** saves you from having to learn the command sequence and reduces the number of keystrokes.

SAM

Pride
£29.95
Five utilities to: edit directories; format discs; produce an inverse screen display; speed up disc access by a claimed 30%; and encrypt files for security purposes.

PUBLIC DOMAIN UTILITIES

CP/M Users Group
Davis Rubin Associates
PD Software Library
There are many utilities available for little more than the cost of a disc through CP/M public domain software libraries. For example, PD Software Library offers sideways print from the CPMBBUK volumes, and a wordcount from the SIGN CPM User Group.

Discs

DISC MATE

Siren Software
£24.99
This contains three programs: Directory Editor recovers erased files and presents a very detailed directory, or it can be used to turn files into protected Read Only format; Copyfile replaces Pip; Zipdisc claims to speed up disc-accessing time by about 20%. It's a useful general package.

NEWKEY

NewStar Software
£14.95
NewKey searches for up to 10 keywords, none of them longer than 52 characters, and while this process is not lightning fast, it's a lot faster than attempting it yourself.

THE KNIFE

HiSoft
£12.95
This high-powered disc sector editor lets you access sectors, tracks and files. It includes searches for strings of characters and byte sequences. The documentation is extremely clear and it should be able to deal with any disc problems.

SIMPLE SIMON

Interlock Services
£14.99
The **Simple Simon** disc editor includes an easy-to-use recovery facility, and can also format discs faster than Diskkit and speed up drive performance. Start-of-day discs can be automatically created and there is an aid to handling password-security systems.

Key Editors

SMART KEY

Caxton Software
£49.99
Used with any CP/M program, **Smart Key** lets you assign any sequence of keystrokes to a single key press, usually Alt plus a character. A Key Editor can save you vast amounts of time and trouble but you have to be careful not to define a key used by the program itself.

Printing

SPOOL

NewStar Software
£19.95
When you start to print, **Spool** automatically stores all the necessary information in memory, leaving the computer free for more work. It will also stack printing jobs so that more than one file can be put in a silicon queue.

LANDSCAPE

System Build
£19.95
Certain programs, in particular spreadsheets, produce copy which is best printed sideways to make best use of the paper. **Landscape** allows you to print 250 characters across, by 96 lines deep.

ROTATE

Proteus
£24.95
A similar product to the above.

Debugging

THE VICAR

Iancyst
£29.95
Variables in Context Analyst and Reporter, or **The Vicar**, is an invaluable aid whether you're programming in Basic, C Basic, Pascal, Turbo Pascal, C or with **dBase II**. It traces variables, so often the cause of problems, and provides a full context as well as a line reference.

CONTACTS

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10-14 Bedford St
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WC2E 9HE
01-379 6502

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0462-682989

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The Old School
Greenfield
Bedford
0525-718181

Focus Software Systems (UK)
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Henleaze
Bristol BS6 7RX
0272-420109

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41 North Road
London N7 9DP
01-607 5844

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123b Brant Street
London NW4 2DX
01-202 8727

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

PD Software Library
Winscombe House
Beacon Road
Crowborough
Sussex TN6 1UL

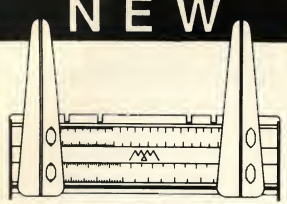
Pride Utilities
Whitehill House
6 Union Street
Luton
Bedfordshire
0582-411686

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

Siren Software
76 Bridge Street
Manchester M3 2RJ
061-796 6074

System Build
Market Place
Market Deeping
Lincs PE6 8EA
0778-344388

N E W for P C W !



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PC 1512 £8.50

2 piece set in ivory coloured nylon. Monitor piped in maroon. AMSTRAD PC hot foil printed on keyboard cover. Please state colour or mono screen.

TIMATIC HARD DISC £9.50

1 piece cover in light grey, piped in green to cover monitor and keyboard. Matching printer covers also available

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A range of covers for over 200 printers to match any of the above covers eg. Amstrad 2000 and 3000, Brother, Canon, Citizen, Epson, Mannesmann, Star, Ricoh, Smith-Corona, Etc. **Prices start from £4.50.**

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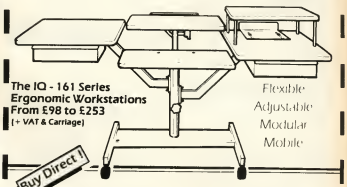
AMSTRAD !? or whatever .....



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Programming can be a fascinating hobby or a full-time occupation. If you want to talk to your PCW, take our brief language course...

Coded Information

You can learn to program — like any other skill — but many different high-level languages are available to communicate with the Central Processing Unit. Each has its own style and is better suited to certain tasks than others, and though two versions of a language may be almost identical, different dialects may include or omit certain commands.

Basic

Mallard Basic, free with your PCW, is a useful tool but lacks several important features, including graphics handling. **Exbasic** adds 36 new commands, including graphics, to either augment or simplify Mallard sequences. Digital Research's **CBasic Compiler** takes the program, written with any editor or word processor, and turns it directly into machine code.

CBasic Compiler
Digital Research/£49.95
Exbasic
Nabitchi/£11.44
Mallard Basic
Locomotive Software/£N/A
Nevada Basic
£38.99
Z Basic
£86.99

Logo

Logo also comes with the PCW. Often used in educational situations, its most obvious feature is the 'turtle' cursor, which provides a graphic introduction to programming.

DR Logo
Digital Research/£N/A

C

C produces very compact code and allows you to do a lot with a very few instructions.

If you need a floating point library with Hi-Soft's **C**, Edenmay produces one. Arnor's claims to be the first full implementation of the K&R standard on the PCW.

The Arnor C
Arnor/£79.95
Mix C Compiler
Analytical Engines/£39.04
Aztec CC
£109.99 (personal)/£265.99 (commercial)
BDS C
£109.99
Floating Point Library
Edenmay Ltd/£12.95
Advantage C
Advantage/£39.50
Hi-Soft C
Hi-Soft/£39.95

Pascal

System Software's is a good choice for beginners though its editor is less than perfect. **Pascal 80** has an excellent editor and a host of features. **Pascal/MT+** and **Pro Pascal** are standard versions. **Turbo Pascal** is easy to use and fast.

Oxford Pascal
Systems Software (Oxford)/£24.95
Pascal/MT+
Digital Research/£49.95
Pascal 80
Hi-Soft/£39.95
Pro Pascal
Prospero/£75
Turbo Pascal
£59.99

Cobol

Cobol was the first language devised for general purposes, with a style similar to everyday English. It is heavy on memory. Of the three versions available, **CIS-Cobol** is held in high regard.

CIS-Cobol
Software Toolshop/£99.95
Cobol
Nevada/£37.95
Cobol Compiler
Microsoft/£184.00

Prolog

Prolog is particularly strong in its data handling and so favoured in Artificial Intelligence circles. It could form the basis for the next generation of computers.

Micro Prolog
LPA/£77.00

Forth

Forth uses a dictionary of a few, limited commands, which are used to create new, compound commands.

Forth
Abersoft/£29.95
Work Forth
£39.95

BCPL

BCPL is easy to learn. Arnor's full implementation includes comprehensive I/O libraries, sound graphics — and space invaders and full screen editor examples.

BCPL
Arnor/£39.95

Fortran

Fortran has similarities to **Basic**.

Fortran
Nevada/£36.99
Pro Fortran
Prospero/£75.00

Lisp

Lisp/80
Toolworks/£69.95

Modula 2

FTL Modula 2
Hi-Soft/£49.95 (compiler)/ £39.95 (interactive editor)

Pilot

Pilot
Nevada/£37.95

Assemblers

If you want to talk the micro's own language, you use an assembler, which lets you address the chip directly.

Maxam II has a good pedigree and a powerful monitor. Hi-Soft's **Devpack80** offers friendly facilities.

Maxam II
Arnor/£79.95
Devpack80
Hi-Soft/£39.95
Macro80
Microsoft/£184.00

Nucleus

Not a language but a program generator, **Nucleus** helps create business programs in **Mallard Basic**, **Nucleus Interfacer** lets them communicate with other word processing and spreadsheet programs. It comes with a well-illustrated manual.

Nucleus/Nucleus Interfacer
Compact/£99.99/£69.99

CONTACTS

Abersoft
7 Maes Afallen
Bow Street
Dyfed SY24 5BA

Advantage
33 Malyns Close
Chinnor
Oxfordshire OX9 4EW
0844-52075

Arnor Ltd.
118 Whitehorse Road
Croydon CR20 2JF
01-684 8009

Compact Software
1 Paper Mews
330 High Street
Dorking
Surrey RH4 1QX
0306-887373

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

Edenmay
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 8LG
0734-500741

Nabitchi
Merseyside Innovation Centre
131 Mount Pleasant
Liverpool L3 5TF
051-708 0123

Prospero Software
190 Castelnau
London SW13 9DH
01-741 8531

Software Toolshop
(as for Hi-Soft)

Systems Software (Oxford)
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:

Advantage
(details above)

Analytical Engines
PO Box 35
Eastleigh
Hampshire SO5 5WU

Rational Solutions
9 Rosehill Road
London
SW18 2NY
01-874 6244

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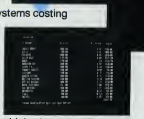

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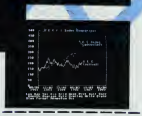

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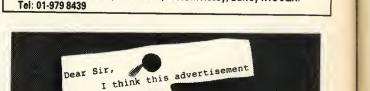

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Work stations

Physical guides

One of the main problems the PCW printer has with single-sheet stationery is ensuring that the paper is correctly positioned. Several manufacturers have come up with solutions.

Chromodynamics' metal **Paper Guide** sits on the paper tray and is adjustable for various widths, with marks for A4. It also contains rulers, marked in inches and for 10 and 12 pitch type, to help relate positions on paper and on-screen.

Margin Maker Mk II (£14.95) actually replaces the tray and includes two lockable paper guides. Its scales indicate 10, 12, 15 and 17 pitch. Alfa Electronics also produces a replacement tray with adjustable guides, costing £12.90.

An alternative method of matching on-screen positions to paper comes from Brian T Worts. **TempMate** (£4.30) is a transparent grid marked with screen rows and columns.

If you still find **Locoscript** gives you trouble, Richman's **Menu Mate** (£6.99) is a transparent keyboard overlay containing lists of the enable and disable operations; cut, copy and paste instructions; special key combinations; and a pitch guide.

Ribbons

While the printer ribbons that comes with the PCW originate in Japan, Amstrad's standard replacements, at £5.95, are rather different. However the Japanese ribbons are available under the Seikosha brandname at £7.50.

The German company Pelikan also manufactures PCW ribbons, costing £5.75. But for the ultimate in definition, Amstrad produces a carbon ribbon, as used on electric typewriters.

An ecological alternative to this expense is to have your ribbons re-inked. Aladdink normally charges £1.90, though it has a special introductory offer of only £1.50.

A Simple Concept charges £2, but offers a ten percent discount on two ribbons sent together. Kado, on the other hand, charges £1.90, but the price includes a mailing envelope with packing material.

Electrical support

If you use your PCW with more than one printer, TMEC's **Data Switchboxes** are available in a number of configurations, for RS232 and Centronics signals and to switch between two, three and four destinations. Prices start at £49 for a two-way RS232.

A sudden fluctuation in mains voltage could cause data corruption. Cetronic's **Reguvolt** is a heavy-duty unit with three 13amp sockets, available in three versions.

A smaller alternative, suitable for one socket, is the Watford Electronics **Spike Protector**, available from Used Computer Sales at £14.95. It either replaces the standard 13amp plug or sits in the next socket.

Hoods and stands

If the noise of your printer sets your teeth on edge, there's an accoustic hood designed specifically for the PCW at an economy price. It's called **Neat** and you can still use continuous stationery while it's in use. **Tidy** is a companion monitor stand with a lockable keyboard cupboard. The units are available separately from SBS at £44.95 and £39.95 respectively, but together Neat 'n' Tidy cost only £74.95.

An alternative to a full stand comes from MEAC Design. The **Desk Top Companion** range includes a monitor mounting printer stand (£9.50) which allows you to place the printer on top of the monitor. With the standard printer stand (£9.50), consisting of four legs, there is room for continuous paper to go under the printer. The monitor mounting tray (£15) provides extra storage on top of the monitor — but don't store discs on it.

Printstack (£29.99) from Micro-World Computers is a more traditional metal unit, holding a printer so that continuous paper can sit beneath it. It also features a cable tidy and a tear-off edge. TMEC produces a range of metal monitor and printer stands, starting at £13.50. Hytek's **Amstand** is a two-shelf, box unit, costing £20.64.

If you're more bothered about the angle of the keyboard, PixelArt produces a pair of feet (£3.95) to raise it to a more suitable angle.

Copy holders

A copy holder avoids having to shift your attention between the original text and the screen.

Thingi (£8.04) is Overbase's ingenious 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 holder that sits on the table, or even clamps to its edges, RSC produces one of each type. Both use clips and a magnetic ruler to hold the copy steady. They cost £12.95 and £19.95 respectively.

Disc storage

If your desk is littered with discs, some without covers, they're susceptible to damage and you'll waste time searching for the one you want. File your discs as you would any other office documents, in a specially designed box. Micro Interface's (£5.95) hold up to ten discs, which are fanned out for easy selection when you open the lid. Rexel's (£16.50) is lockable and includes three dividers as do RSC's (£10.50 and £13.50).

Printer cables

If you'd prefer your printer to the left of the monitor, or on a shelf above your desk, you may need an extension cable. The standard length is around 1m, though this may vary. Many of the same companies also sell cables to connect serial printers to an interface. RSD's printer cable is £10.93; Analytical Engines' £10.99; and RSC charges £12.50. A Centronics lead from RSD costs £17.48; from RSC, £12.50.

Protection

How often have you drunk a cup of coffee while at work? An accidental spillage could put your keyboard out of action. Kado's **Seal 'n' Type** is an ingenious transparent plastic film that moulds itself to the keys, yet lets you type as normal. As well as protecting against waves of coffee, it keeps dust out.

A cover for the whole system is also a good idea. They're one of the cheapest accessories that you can find but also one of the most useful. BBD's is £11.95 and TMEC's is £9.50, as is RSC's.

Travel presents its own problems. If you need to transport your PCW, Vivdix produces a case (£19.75) that lets you carry it by hand or over your shoulder, as well as protecting it during car journeys.

With room for the hardware plus discs, manuals and even a modem, the Amstrad **Transporter** measures 17" × 16½" × 14". It features protective boards and an adjustable nylon-webbing strap.

Screen filters

Glare makes for uncomfortable viewing. An anti-glare filter clips in front of the monitor and cuts down reflections.

SBS has a new one, designed specifically for the PCW at a cost of £14.50. It's a perspex filter, unlike the more traditional mesh ones, which can actually cause viewing problems.

Other screen filters are available from Atlantic Supplies, which is charging only £6.99 for its 12" × 10" filter, and Alfa, which has a mesh model for £17.95. Lightwave's is £19.95.

Furniture

Specialist computer furniture may contain a variety of features, such as channels for cables but primarily it must be solid. Make sure that it provides enough storage space for disks, manuals and so on.

Habitat sells the rugged **Computech** trolley (£75) in black, white and grey, with a sliding shelf, cable clips and castors, but you'll require an extension cable for your printer.

Klick (£79.50) from Store Stock Systems could suit a high-tech home or office environment. The unit has a steel framework, in red, yellow, green, blue or brown, plus three white teak shelves and wheels.

An extremely attractive and efficient high-tech design is available from Intelligence Quotient. The **IQ-161** (£112.70) features a pneumatic central column and fully adjustable tables to ensure ergonomic efficiency.

Crompton Computer Furniture, from Tirith, includes desks with sliding shelves and monitor arms. Evesham Micros' **Database Furniture** is a modular system in Rosewood effect with black trim. The basic desk with monitor plinth is £64.95; the printer unit with basket and paper feed slot costs £44.95; a corner link unit is £11.95 and a filing trolley is £24.95.

The **Dpus Organiser** at £59.95 has a monitor and printer shelf with storage space underneath, and castors. It's finished in teak. Dimensions are 31" high, 40‡" wide and 26" deep. The **Business Desk** Range starts at £129, rising to £239. Units include paper-feed slots, a shelf and a drawer. Dimensions are 27‡" high, 46" wide and 30" deep. A shelf costs £49.

Prototype Development Systems desks are aimed at the small office and start at £74.45. They 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 extension sockets completes the system.

Contacts

Alfa Electronics
Unit 7
Maple House
97 Ewell Road
Surbiton
Surrey
KT6 6AH
01-390 2588

Aladdink
4 Hurkur Crescent
Eyemouth
Berwickshire TD14 5AP
0390-50965

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PO Box 35
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0257-422968

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0395-277496

Cetronic Power Products
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Stanstead Abbots
Ware
Herts SG12 8EJ
0920-871077

Chromodynamics
Newton House
Chapel Road
Alderley Edge
Cheshire SK9 7DX
0652-585003

Evesham Micros
63 Bridge Street
Evesham
Worcs WR11 4SF
0386-41989

Hytek Mouldings
Hallcroft Industrial Estate
Retford
Notts DN22 7SS
0777-708555

Intelligence Quotient
45 Epping Close
Romford
Essex RM7 8BH

Kado Enterprises
Kilmorey Court
279 St Margaret's Road
Twickenham
Middlesex TW1 1PN
01-892 0215

Lightwave Leisure
Unit 31
Wirral Business Centre
Dock Road
Birkenhead L41 1JW
051-639 5050

Margin Maker
Box 121 Gresham Road
Staines
Middlesex TW18 2AJ

MEAC Designs
3 Little Croft
Yateley
Camberley
Surrey GU17 7BU
0252-879005

Micro Interface
84 Talbot Road
London N6 4RA
01-340 0310

Micro-World Computers
1006-1010 Manchester Road
Linthwaite
Huddersfield
HD7 5QQ
0484-846117

Opus Supplies
55 Ormside Way
Holmethorpe Industrial Estate
Redhill
Surrey RH1 2LW
0737-65080

Overbase
176a Conway Street
Birkenhead
Wirral L41 3JB
051-647 8981

PixelArt Studio
8 The Covert
East Goscote
Leicester LE7 8WR
0535-606830

Prototype Development Systems
Survey House
Pool Close
West Molesey
Surrey KT8 0RN
01-941 2225/3909

Richman Software
14-16 Little Walk
Harlow
Essex CM20 1HY
0279-25401

RSC
75 Queens Road
Watford
WD1 2QN
0923-43301

RSD Connections
PO Box 1
Ware
Herts SG12 9EN
0920-5285/66284

SBS Computer Supplies
Unit 3
Newtown Rd
Hove BN3 7BA
0273-726331

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0222-35820

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M23 9BH
061-998 9726

Tirith
77 Alston Drive
Bradwell Abbey
Milton Keynes MK13 9HG
0908-311544

TMEC Trading
68 New Road
Clifton
Bedfordshire SG17 5JL
0462-676253

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- Account number, one of up to 9 defined by you to suit your circumstances eg 1= Barclays, 2= Visa, 3= Cash etc.
- Cheque or reference number, eg ABC123
- Class code, one of up to 50 defined by you to suit your circumstances eg o1= Overheads, o1= Rent, o2= Heat/Lighting, o2 = Stationery etc. or m0= Motoring, m1= Petrol, m2= Road Tax, m3= Maintenance etc.
- Descriptive text eg. "Tax Rebate", "Refrigerator", etc.
- Optional single-character mark as an extra identifier, eg, b= business, p= private, etc.
- Account reconciliation marker.
- The amount of the transaction, debit or credit.
- Optional VAT Indicator, eg exempt, zero, full or part rated. If VAT is not relevant it may be ignored.

You may select categories of entries according to account, class and mark (eg all bank account entries, or all motoring expenses, or all cash account business expenses etc.) and produce reports on the screen or printer as follows:
- Detailed statements covering any period, showing each qualifying transaction with a running balance.
- Quarterly VAT statements showing input and output transactions separately with columns for exempt, zero rated, VATable, VAT paid and gross amounts, and a summary with all the relevant totals.
- Tables showing the total amounts for each class month by month, and totals for the whole year.
- Tables showing the totals for each class in each account.
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There are so many services supporting or making use of the PCW, you may be surprised by how much you can do with your Joyce!

Service industries

Support groups

For a £40 annual subscription, Microcomputer User Publications' **Small Business Support Group** offers a helpline, covering a wide range of CP/M software, available during office hours. Less urgent problems are dealt with by post or electronic mail; membership includes a One-to-One subscription and access to SBSG's own notice board.

Lazahold's official **Amstrad Professional User Club** offers discounts on software, peripherals, discs, ribbons and stationery; a support hotline for programs sold by the group; a monthly newsletter and free copies of Amstrad Professional Computing magazine for £49.95 per annum.

Typesetting

If you need professional typesetting, for a small ad or a business card perhaps, it can be done directly from 3" disc, saving both time and money.

With **Wordstream**, you enter the setting codes yourself, using an illustrated manual. Fonts, faces, boxes, border rules, distortion and reverse setting are available. You can post your ASCII file to Type City Graphics, or use One-to-One E-mail. Usually jobs will be returned the same day.

Typeshare uses its own software which costs £199.98, plus VAT, for a basic package. It provides full preview facilities, and includes error checking. Setting costs £3.60 for each linear 300mm, though if you send the copy by modem, this is reduced to £2.40. 20 fonts are available.

Other typesetting services are offered by **Technotype**, with 500 faces available, and the company has BT Gold and Easylink facilities. It also offers conversions of discs between micros. **Thameslink** offers laser-printer setting at around half the price of its standard typesetting. An A4 page is around £5 laserset, £10 typeset.

Maintenance

No business can afford the time spent sending a vital piece of equipment back to the manufacturer.

Dictaphone offers the official Amstrad maintenance contract. For a first year payment of £41.40, you get twelve months of cover, with unlimited on-site emergency calls, during normal working hours. A request for service will normally be met within two working days.

Expert Systems requires you to return your machine by Securicor courier, though this expense is met by the company, which 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.

Electronic learning

Reel Time audio tutors teach you on tape. With up to three hours of lessons, they cover **Locoscript**, CP/M and Basic, and **Supercalc 2**. There are also introductions to **NewWord** and **Multiplan** available with those particular pieces of software.

Alternatively, Gateway produces a one hour video tutorial tape, **Getting Started With Locoscript** (£26.10). This covers everything from using Disckit to creating templates, and is available in VHS and Beta. An alternative, **Using Locoscript (£19.95)**, is from Master Class.

Courses

Hands-on experience, under the eye of expert lecturers, is available in courses all over the country, with topics ranging from beginner's **Locoscript** to advanced use of **dBase II**.

A course usually lasts a day. This is unlikely to be long enough to do more than scratch the surface of a subject though and many courses can be expanded, if greater depth is required.

Expect to pay £60 to £100 a day. This may seem expensive, but the fee will almost certainly be tax-deductible. You may even qualify for a government grant.

Office international provides half-day introductions to word processing and the PCW, as well as day courses on **Locoscript** at beginners and advanced levels, throughout the country. They also have courses in **Sage Accounts**, **New Word** and **Cardbox**, which are backed up with telephone support for all students.

Minerva Systems runs residential weekends at Rolle College, Exmouth, from Friday evening. The course takes you through the ins and outs of **Locoscript**, finishing on Sunday afternoon. The fee includes bed, breakfast and lunch, plus a copy of the Lernloco tutorial disc and a blank disc. The maximum number on any course is six.

RT Computer Training provides training on 75 sites around Britain in co-operation with Headline Communications, who produce the **Real Time** audio tutors. Its courses last four hours, and it can arrange training at your premises.

For training in **Locoscript**, other word processors, databases, spreadsheets and accounting and CP/M, Micro Learning Centre offers day courses. As it is approved by the MSC, most of its courses are available for grant aid from that body.

CONTACTS

Dictaphone Company
Regent Square House
The Parade
Leamington Spa
CV32 4NL
0926-38311

Expert Systems
Freepost
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
Victoria House
PO Box 10
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0783-673395

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Fir Vale Road
Bournemouth BH1 2JN
0202-294347

Typeshare
Alan House
55-59 Saffron Hill
Hatton Garden
London EC1N 8QX
01-405 7937

And still they come…All the products that failed to make the listings squeeze in on the last page.

Late arrivals

Sideways on

Spreadsheet users who need a rotator to print out all their copy on one sheet of paper could try a **Bit On The Side**! £24.95). It offers 8 fonts and 4 sizes of text, and can handle 96 rows by an infinite number of columns and can be used with any ASCII file. Also included is a convenient disc manager.
BIT ON THE SIDE!
Aware Software
157 Lonsdale Road
Formby
Merseyside L37 3HF
07048-31312

More red tape

Still having problems with the council official in Infocom's **Hitchhiker's Guide to the Galaxy**? Then you may or may not be pleased to know that the company is about to release another adventure from the wildly satirical keyboard of Douglas Adams. **Bureaucracy** (£29.99) sets you the far-from-simple task of informing the bank of your change of address.
BUREAUCRACY
Infocom
Activision (UK)
23 Pond Street
London NW3 2PN
01-431 1101

Basic advice

Nabitchi has released a demonstration disc of what you can do with **Basic**. Its programs range from the useful user-defined graphics utility, to the totally trivial horse-race game. But it's only £7.95 and the programs themselves could provide hints to novices.
IT'S BASIC
Nabitchi Computing
Merseyside Innovation Centre
131 Mount Pleasant
Liverpool L3 5TF
051-708 0123

Dazzle deflector

An extremely neat, rigid filter that sits flush with the screen and is attached by two strips of velcro, for easy removal, comes from Crown for £34.95.
SCREEN FILTER
Crown Computer Products
210 Moss Lane
Lathom
Lancs L40 1AZ
0704-892721/895815

Captain is my bull terrier. He is affectionate and brave. At night he sleeps in my bedroom and snores. In the day he sleeps in my study and snores. Peggy says he sleeps and snores too much.
Pick one of:
1) ask Marjorie Ambrobus for advice;
2) try to keep Captain awake;
3) take no notice.
I ask Marjorie Ambrobus for advice. She says Captain is lazy and I should have bought an Afghan. How did such a stupid woman ever get into the village? I call a vet. Martin Lambert snaps, "Why on earth didn't you bring him to the surgery? I'm a busy man!" I tell him Captain needs a course of vitamins. He says, "Nonsense, take him for a good run." I say he won't run. Lambert says, "Kick him and he will." No vet has ever spoken like this before!
Select one of these alternatives:
1) pretend I didn't hear;
2) sack Martin Lambert;
3) respect a man who speaks plainly.

P-C-Double-Yooo-arr!

Fans of Radio Four's perennial soap opera, *The Archers*, will be delighted to find the Ambridge inhabitants in this multiple-choice adventure game (£14.95). It puts you in the position of a BBC story editor, selecting the fates of Jack Wooley, Eddie Grundy, Elizabeth Archer and Nelson Gabriel. But don't ruffle too many feathers or you'll be out of a job and the drinkers in The Bull won't be too pleased either.
THE ARCHERS
Mosaic Publishing
187 Upper Street
London N1 1RQ
01-226 0826

Interesting interfaces

Three novel new interfaces are avialable from DK'Tronics. The first overcomes the joystick-compatibility problem by being programmable. It costs £24.95. For an extra £15 you get a sound booster, which uses extra chips to add the potential for real music and effects from the hitherto mute Joyce. Ocean's **Head Over Heels** game offers this as an option.

Finally, more serious-minded users who require data stamping of files will find the real **Time Clock Module** (£34.95) ideal.

INTERFACES
DK'Tronics
Gorleston
Great Yarmouth
Norfolk NR31 6BE
0493-602926

3" discs add 2¼"

A new 5¼" disc system has been announced by Moonstone, which includes an 80/40-track switchable drive, connecting cables, Ram upgrade and Multi-Format Utility software. This clever program allows the PCW8256 to read and write to virtually any other machine. It can even suggest the format of an unknown disc. The cost of this upgrade is £229.95.
MFU 5¼" DISC DRIVE
Moonstone Computing
Strathclyde Business Centre
31 Clyde Street
Clydebank
Glasgow G81 1PF
041-941 3120

SOS

Comprehensive half-day and day training courses, costing £49.99 and £74.99 respectively, are available in the East Grinstead region from Share. Subjects include **Locoscript**, **Spell** and **Mail plus** accounts software and the use of E-Mail, telexes and the **Comm+** communications package. Prices include all documentation and telephone support.
TRAINING COURSES
Share Office Services
38 London Road
East Grinstead
Sussex RH19 1AB
0342-316111

Aries for interaction

Interactive tutors for **WordStar**, **SuperCalc** and **dBase II** come from Aries at only £19.95 each. The company also produces a tutor called **First Steps** (£24.95), which introduces the basic principles of computing.
CLASSMINDER TUTORS
Aries Computing
65a High Street
Stevenage
Hertfordshire SG1 3AQ
0438-369960

Dial up Dialup

News of a new comms software package comes from PMS, whose **Dialup Personal** (£89.95) is available on its own or with the **WS4000** modem for £259.25. The same company produces **Dialup Educational**.
DIALUP PERSONAL
PMS Communications
Norfolk House
Smallbrook
Queensway
Birmingham B5 4LJ
021-643 7688

The Pace of technology

Through Pace is best known for its modems, the company has just announced a 5¼" drive for the PCW, providing a full 800K capacity once formatted. A file-transfer routine for MS-DOS is included in the £190.90 price.
5¼" DISC DRIVE
Pace Micro Technology
Juniper View
Allerton Road
Bradford BD15 7AG
0274-488211

More on Data Protection

Now that data held on computer is controlled by law, it must be available to the general public. The first entries to be registered under the *Data Protection Act* can now be viewed at certain major libraries.
DATA PROTECTION REGISTER
The Data Protection Registrar
Springfield House
Water Lane
Wilmslow
Cheshire SK9 5AX
0625-535711

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