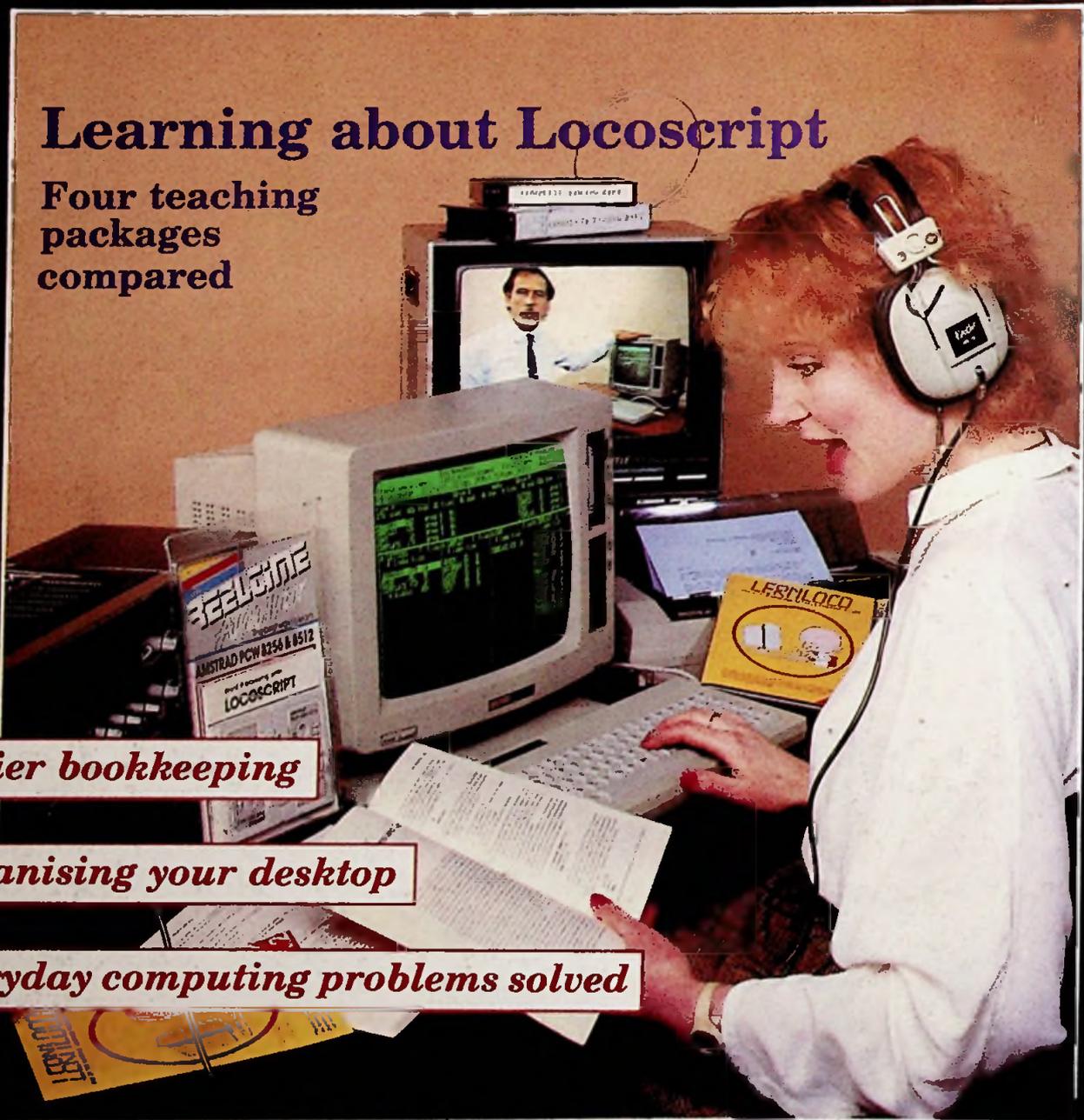


AMSTRAD PROFESSIONAL COMPUTING

Learning about Locoscript

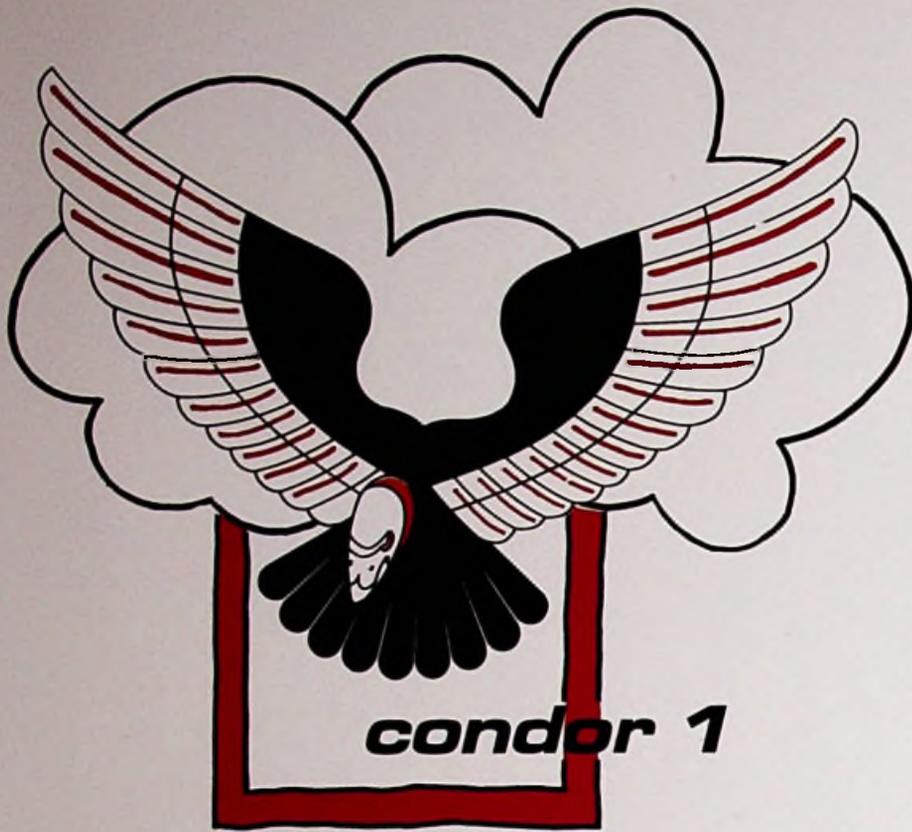
Four teaching packages compared



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Organising your desktop

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Amstrad 8256
and 8512.



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at £99.99 inc VAT.

The Condor 1 Commands – They couldn't be simpler!

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DEFINE Create, redefine or describe a database
DESTROY Eliminate a database or file
FORMAT Create or revise a form or HELP screen
REORG Reorganize the structure of a database; add or delete items

Information Input and Update
APPEND Attach records of one database to another
EMPTY Eliminate all data in a database
ENTER Insert new data into a database
POST Update entries in one database with those from another
UPDATE Change entries in a database meeting specified conditions

Information Processing and Report Writing
COMPARE Compare entries in two databases for (not) matching conditions and create a RESULT database
COMPUTE Compute entries in a database
LIST Display database records in sequential order
PRINT Print database records in sequential order
PRINTER Printer output control and redirection
SELECT Select database records meeting specified conditions, creating a RESULT database
SORT Sort database records by entries
STAX View or print statistics of entries
TABULATE Summarize specified entries. Print or save the result
TITLE Print report headings

Operation Aids
HELP Assist operator in selecting procedures
INSTALL Saves SET and PRINTER options
RESTART Continue processing interrupted commands
RUN Process and execute a command procedure with options for command modification

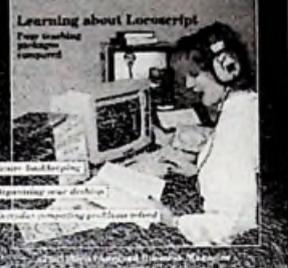
Interfaces
READ Transfer records from an ASCII file to an existing database
WRITE Transfer records from a database to an ASCII sequential file

Utilities
COPY Copy a database or file
DATE View or enter date
DIC View entries in the data dictionary
DIR View the list of files in the disk directory
LOGDISK Log a new disk in the computer
RENAME Change the name of a database or file
SAVE Save a RESULT database
SET Set operating parameters
SYSTEM Exit from Condor 1 back to operating system
TERM Defines the computer (not needed on Amstrad)

APC

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AMSTRAD PROFESSIONAL COMPUTING



Vol. 1 No. 7 March 1987

Editor

Michael Auerbach

Managing Director

John G. Smith

Production Editor

John G. Smith

Enquiries relating to

Amstrad products:

Tel: 0277 230222

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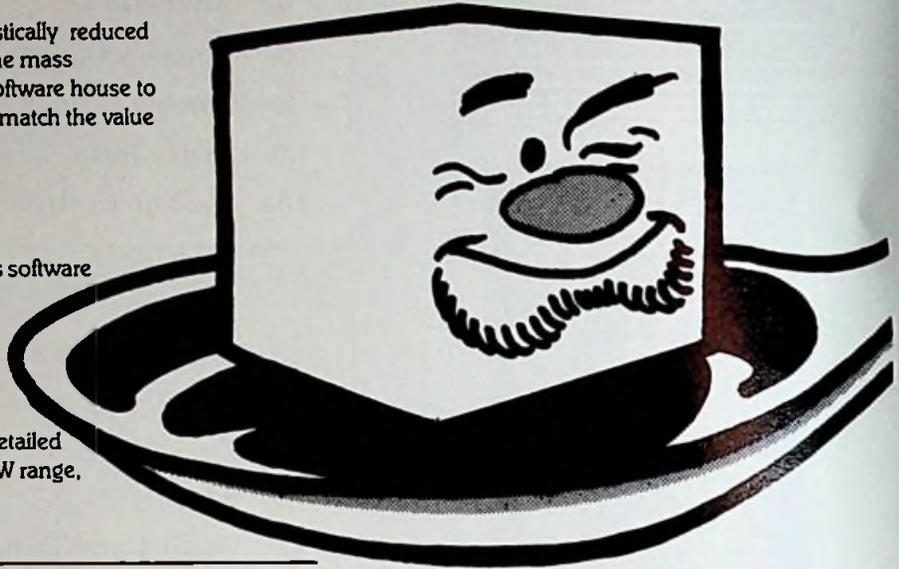
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As sweet as Sugar!

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 74. PRINT Invoice on Plain Paper with File Copy
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 76. VAT Rates mixed on one Invoice
 77. CHOICE of 3 Standard Sales Prices or Manual
 78. PRICE Netting for Background Discounting
 79. MANUAL, Narrative & Discount Lines anywhere
 80. STOCK Availability Check during Invoicing
 81. PROFIT Statistics by Customer Rep & Product
 82. COMPARE Sales Figures with Previous Year
 83. PRICE LIST print for Customer Distribution
 84. DAY BOOK report for Invoices/Credit Notes
 85. SALES LEDGER for immediate Credit Control
 86. UPDATE from Invoicing Day Book
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EDITORIAL

Double standards

Jargon is not the only stylistic trap a computer magazine can fall into. There's also the classic computerspeak cliché: A noteworthy music processor, chips with everything, memories are made of this (worse: thanks for the memory), a peek under the bonnet . . .

This last example is at least forgivable. It's very tempting to compare using a computer to driving a car because so many people learn to drive cars without knowing a thing about crankshafts or big ends.

The analogy can only be taken so far, however. The technical war waged in the automobile industry has its counterpart in the computer hardware market, but with one crucial difference: No car manufacturer has managed to produce a vehicle with more specifications than a BMW for the price of a VW.

Amstrad has twice achieved that kind of coup in the space of those two years, and competitors can no doubt expect more body blows (if I dare put it that way) in the not too distant future.

The comparison breaks down even further when it comes to the software industry. If you pay £6,000 for a car, you know you'll be getting roughly £6,000's worth of car.

You might get the equivalent for a few hundred pounds less if you shop around, but you won't find next week that you could have bought something similar, or even exactly the same model, at a fifth of the price or less.

With software, that's the kind of frustrating thing which can and does happen. It's not simply that software prices are dropping – those who complain of being treated unfairly when prices fall must accept that in the world of computers there's never a right time to buy.

No, the really irritating thing is that the software industry is beginning to be literally two-faced.

For the first half of the eighties software prices were steady. WordStar remained at £295 for years. This was too high a price tag given that development costs had been recouped several times over within a short time, but it nevertheless left the consumer the same type of choice as when buying a car. Before the Amstrad era, nobody offered WordStar or dBase II for less than triple figures.

Today, many standard packages are priced on a split system. CPC and PCW versions of a product

cost a fraction of the price of the same product on 5.25in disc – same manual, same facilities, often the same support.

And the PC market is now brimming with "special" Amstrad versions, either hobbled so that the IBM PC owner will still pay the price for the full product, and/or fixed with a couple of lines of code so that the cheaper version will only run on the PC1512.

The price differences are gigantic. The full versions of some packages costing over £500 are available for the Amstrad PC at less than £100, the only difference being that the Amstrad version is 1.1 and the full version 1.1B. In some cases, the versions are actually identical – same manual, same facilities, often the same support and this time the same disc, with only the packaging changed to protect the guilty supplier from the innocent buyer.

This unique situation can't and shouldn't continue. IBM PC customers (and corporate customers in particular) should refuse to pay the ridiculous surcharges being imposed on them, in which case producers would be forced to bottom out prices at the Amstrad level. If all I had was an IBM PC I would be fuming.

I'm not pleased as it is to be offered versions of packages which have been deliberately emasculated to justify a lower price. It probably cost several man-hours to make sure the doctoring was carried out thoroughly, so by rights it ought to cost more, not less.

Amstrad itself is in no way to blame for this. The company is not only justified in protecting its interests by keeping as much software as possible Amstrad-specific, but in the end it will be doing the customer a service: I think we can look forward to a time when software will be written to be Amstrad-compatible rather than compatible with you know who.

Only then will we be sure of always getting value for money, since experience has shown that Amstrad can be relied on to provide that.

The culprits are the software houses. They should recognise that the good old days of massive profit margins are gone. And they should recognise it quickly, before their reputations become so tarnished that bright newcomers who accept the new ground rules knock them off their perch. To coin a phrase (and avoiding clichés like the plague), they should grasp the nettle by the horns before someone throws a spanner in the ointment.

Gabriel Jacobs

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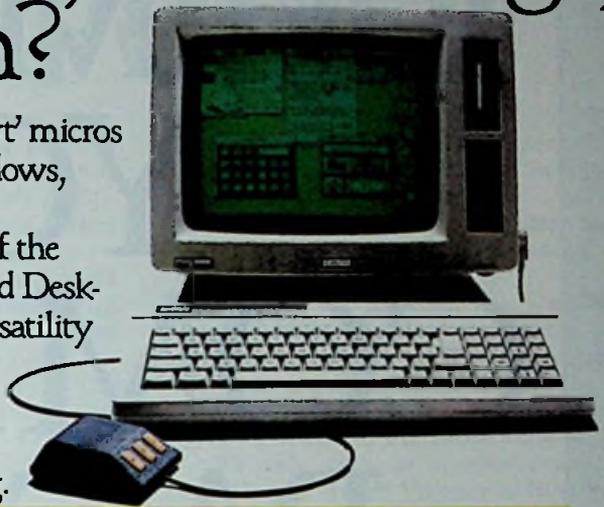
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What's so special about the Mac, the Atari St, The Amiga, Windows and Gem?

It's no surprise that nearly all new 16 bit 'state of the art' micros come with a Mouse and Wimp environment (Windows, Icons, Menus and Pointers) as standard.

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The AMX Mouse and compatible software — it's what you and your AMSTRAD micro have been missing.



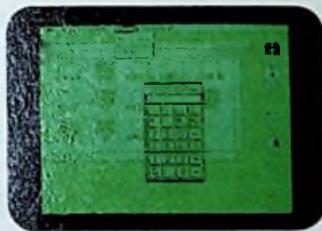
AMX MOUSE PACKAGE 3" DISC £79.95

There's not much joy in a joystick and keyboards can be all fingers and thumbs. Acclaimed by the press as 'the best input device', already over 50,000 micro users have adopted an AMX Mouse. No more complicated CP/M commands to remember, with the AMX Mouse you just point and click, even the experts find this system more efficient. Available for the Amstrad PCW 8256 & 8512.



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This is a new way to use your computer system. It's a simple set of icons and operations which allow you to do anything, remembering that you don't need to learn a lot of programs in order to do anything. You just point the mouse at the representing icon and click the button.



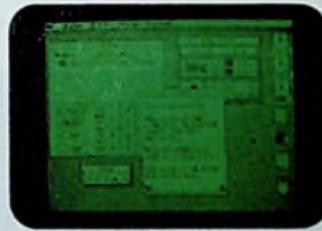
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A central place to store all your important names, addresses and telephone numbers. A database type search facility allows you to enter any part of the information such as a persons' name, company name, town etc and instantly see the matching entry.



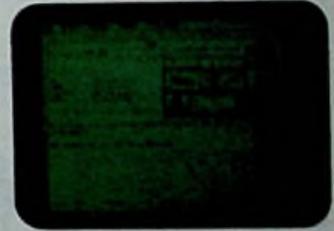
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A versatile appointments diary allowing you up to seven lines to be entered for any day. Printing facilities allow yearly and monthly summaries to be produced indicating days for which an entry has been indicated.



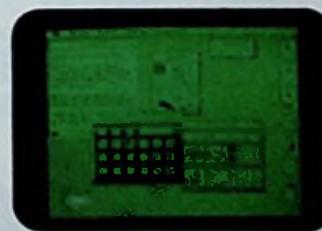
MEMO PAD

This allows anything from a quick memo to a complete multi-page report to be produced from the Desktop. Many word processing features are included such as centering, justification, cut, copy and paste etc.



DESK ACCESSORIES

The AMX Mouse package also includes a number of extra functions which are available for use at all times from the desktop. These include a timer, alarm clock, calculator, mouse and control panel — the type of things found on a real desk top!



STOP PRESS... STOP PRESS...

There will be a growing list of further mouse compatible software for the Amstrad PCW from AMS and other leading software houses in the coming months including Graphic and Desktop publishing programs.

This superb product is available now from all good computer dealers or direct by cheque, Access or Visa. All prices include VAT and post and packaging.

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ICI approves the PC1512

INDUSTRIAL giant ICI has given a thumbs up to the PC1512 and removed all doubts about the machine's ability to perform at the highest levels within the business sector.

At the end of exhaustive field trials lasting three months, ICI director of information technology Derek Seddon was full of praise for the machine.

In a letter to Amstrad he said: "The PC1512 met all ICI's requirements for a 808x processor-based personal computer and is judged to offer very good value for money.

"It was found to have excellent software compatibility with ICI's supported range of PC software. During trials no problems were experienced with overheating when the PC was connected to a token ring network.

"The Amstrad PC1512 has now been approved for purchase by ICI operating units".

Seddon took the rare step of giving Amstrad permission to announce his department's findings "in view of the misleading press reports which implied that ICI had decided not to buy the PC1512" and to "put the record straight".

He was referring to what Alan Sugar described at the time as a smear campaign against the PC1512 by some of its competitors last year.

This involved slurs that the machine overheated easily, wouldn't run token ring, and had been rejected by ICI evaluators because of its supposed problems.

"We are delighted with the news", says Thomas Power, Amstrad's recently appointed marketing manager.

IBM toppled to second place

AMSTRAD has toppled IBM to become number one in the UK business micro market. Latest figures reveal it now

has 26 per cent compared to 25 per cent for the company that has for so long dominated this sector.

And this comes only two months after Amstrad was trailing its rival by a massive 27 per cent.

Compiled by Romtec, the leading market research firm, the statistics show that Amstrad has overtaken IBM on the strength of sales of the PC1512. And this is based on actual sales - not advance orders or machines shipped.

"We only work on invoiced sales to users", said Marek Vaygelt of Romtec.

"In that way you get a fully accurate picture of what is happening".

The Romtec research has also shown that the majority of PC1512 sales to date have been to first time users.

Amstrad is understandably delighted with the results, particularly in the light of recent criticism by the media over supply.

"We are only too pleased to have proved our critics wrong once again", said Thomas Power, Amstrad's marketing manager, "for how can we be having problems of supply if we are number one in the market after such a short time?"

Software in Focus

TWO new software products for the Amstrad PCW have been released by Focus Computer Systems.

Easypip is based on the CP/M Pip utility and allows non-technical users to transfer files between discs and memory without having to learn the command sequences. Price £19.95.

Smartcard is a menu-based system combining the ease of a card system with advanced database features.

Users can produce their own database record structures with user-defined reporting facilities.

It also includes selective sorted reports allowing the user to select specific information from a number of records and produce mailing labels. Price £59.95.

Hopes of bumper profits

CITY observers expect Amstrad to announce pre-tax profits of £65 million for the second half of 1980. The forecast is based on sales of the PC1512 reportedly worth £100 million during the period. It would mean an increase of £27 million over pre-tax profits for the first half of last year.

A leading analyst said: "The results show a substantial improvement in Amstrad's performance, achieved mainly on the back of sales for the PC1512.

"We are expecting some better than hoped for results. Amstrad's share price is heading for an all-time high".

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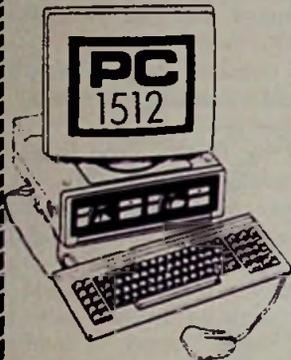
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PRESENTS

A Revolution in Computing

AMSTRAD PC 1512

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- PC1512DM** £559.00
5 1/4" Floppy Disc, Dual Drive, c/w Mono (Grey Level) Monitor
- PC1512SC** £619.00
5 1/4" Floppy Disc, Single Drive, c/w Colour Monitor
- PC1512DC** £729.00
5 1/4" Floppy Disc, Dual Drive, c/w Colour Monitor
- PC1512HD10M** £799.00
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- PC1512HD10C** £969.00
5 1/4" Floppy Disc and Hard Drive, c/w Colour Monitor
- PC1512HD20M** £899.00
5 1/4" Floppy Disc and Hard Drive, c/w Mono (Grey Level) Monitor
- PC1512HD20C** £1069.00
5 1/4" Floppy Disc and Hard Drive, c/w Colour Monitor

HARDWARE

- System unit with 8MHz 8086 processor
- 512K Memory expandable to 640K
- Full function 85 key keyboard
- Paper white text and graphics anti-glare monitor
- Colour graphic compatibility with 16 grey levels displayed
- 5 1/4" inch 360K Disc drive
- Quartz real time clock with battery back-up
- RS232c Serial interface
- Parallel interface
- Ergonomically designed "Mouse"
- 3 full size expansion slots
- Joystick port
- Tilt and swivel adjustment on monitor
- Built in speaker with volume control

SOFTWARE

- Microsoft MSDOS 3.2 operating system
- Digital Research DOS Plus operating system
- Digital Research GEM "Graphics environment manager"
- Digital Research GEM "Desktop" and "GEM Paint"
- Locomotive Software "Basic 2" operating under GEM
- Detailed clearly presented user manual

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AMSTRAD DMP3000 £169.00
Dot Matrix Printer. A wide choice of sizes and typefaces coupled with a complete ASCII, international and IBM graphics character set. In addition, the implementation of dot addressable graphics and standard Epson compatible command codes will allow the DMP3000 to operate directly with most software, including word processors, spreadsheets and graphics programs.

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Dot Matrix Printer. The new VP1814 is a standard 80 column fast, highly reliable and easy to operate. The high-speed, low energy consumption 9 wire dot head gives print speed of 189 cps and NLQ speed 36 cps. Bi-directional, logic seeking in text mode. The use of fan-fold, roll or cut-sheet paper is possible with adjustable sprocket pin feed and friction feed. Offers emphasized print, double print, super script and sub script. Justified print mode including left, centre, right and full justification. 9 Graphic modes are available. Both download and inprint buffer can exist simultaneously. 7K input buffer standard can be expanded to 15K. Printing modes selectable at front panel (NLQ/draft, Pica/Elite, enlarge, emphasize, condense, italic). 11 Language international character font is internalized. IBM and Epson compatible.

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The briefcase size Diconix 150 printer

Amstrad named as best buy

THE first in-depth survey of business computers since the arrival of the PC1512 range has named the Amstrad machines "clear best buys" among IBM XT compatibles.

An independent assessment in What to Buy magazine rates Amstrad PC ahead of competition like Compaq, Epson, Tandy and even IBM itself.

The ratings were based on hands-on experience of the magazine's own technical team, response to user surveys, software and dealer support.

"Price was another factor, of course", Julian Lloyd of What to Buy told *Amstrad Professional Computing*, "and the Amstrad PCs scored very well here despite the fact that their competitors give a better price in some cases, as much as 20%." Lloyd added:

"We were impressed by the PC1512 due to its outstanding value for money. There's nothing to be said for the Amstrad range."

The LaserMaster TurboCharger was hailed as "an excellent product".

"It's a good idea that because it's cheap it's suitable for business applications," he said.

"The fact is it can happily meet most straightforward business needs and all the evidence so far suggests that it's a reliable and fairly robust product".

Laser upgrade card

AN upgrade card for IBM compatibles which allows a Hewlett Packard LaserJet, LaserJet Plus and most Canon-based laser printers to output a page of graphics at 300dpi in a few seconds has been launched by LaserMaster UK.

Most applications with Diablo 630, HP LaserJet or LaserJet Plus options work with the LaserMaster TurboCharger such as Xerox Ventura, WordStar 2000 and Multimate.

High speed and volume printing is available for CAD files - AutoCad DXF format - from AutoCad, VersaCad, ProDesign II, RoboCad and MegaCad using LM Plot.

Text and graphics integration is achieved using LM Tag, Xerox Ventura Publisher or Spellbinder Desktop Publisher.

The Turbocharger has 1.5Mb memory, a vector to raster converter that processes at 1,000 vectors per second and comes with an automatic

video switch cable. This enables the operator to use the laserprinter in normal or Turbocharge mode.

The Lasermaster TurboCharger card comes with 60 fonts as standard and a high speed driver for Xerox Ventura Publisher. Price £1,395.

Squirt of a printer

Diconix Inc., a wholly owned subsidiary of Eastman Kodak, has unveiled its lightweight portable ink-jet printer aimed at the travelling businessman market. It is battery run and will print about 150 pages before recharge.

The Diconix 150 should fit easily into most brief cases. It prints on single sheets of letterhead or continuous feed paper, with NLQ print at speeds up to 150 cps in draft mode.

It offers italic, emphasised, enlarged, proportional and condensed style typefaces. The user can switch from Elite to a script style either at the touch of a button or using standard DIP switches. Price £399.

Help on the line

THIRD party software firm PC Support has started a telephone service giving PC1512 owners advice on a wide range of accounting packages.

Software covered includes Multisoft, Sagesoft, Paxton, Pegasus, Plusmark, Tetra, Sky, Sun and Apricot.

Subscription charges start at £50 depending on the package supported and cover all support for 12 months.

There is a pay-as-you-use option for non-subscribers which costs around £1 a minute with a minimum charge of £12 a call.

Comms package

DIAL-UP modem specialist Dacom Systems has released its communications package Unity Gold for the PC1512. It contains the latest internal Half-Card triple standard modem, Datatalk communications, two-way telephone connector and full documentation.

Rush on Payroll program

NEWS that the DHSS is introducing changes in its National Insurance contributions calculations on April 5 has meant all hands to the pump at business software house Sagesoft.

The announcement gave the company just 10 weeks to modify its Payroll program and replace nearly 8,000 existing packages - including Amstrad PCW and PC versions - with amended software.

"We only received notification of the changes on January 23", Sagesoft technical director Graham Wylie told *Amstrad Professional Computing*. "With the amount of work involved, a pre-Christmas lead time would have been far more realistic.

"Instead it meant program changes and conversion to all the different machine formats had to be completed

by February 14 and thorough testing carried out.

"Then we needed to contact our 5,000-plus registered Payroll users by the end of February to notify them of the change. And in addition we expect calls from our 2,000 non-registered users who will want the amended version".

Despite the short notice, Sagesoft says it will have the new Payroll software ready to ship to distributors at the beginning of this month, allowing about five weeks for the programs to reach users before the DHSS deadline.

Owners of Payroll who have Sagecover protection, or are within the 90 day guarantee, will get the upgrade free.

Otherwise it will cost £35 for the PCW and £60 for the PC versions.

IT training pack for all

To meet the training needs of everyone in an organisation, from shop floor to board room, the National Computing Centre (NCC) has developed a new video-based training package called Information Technology Training.

It teaches the basic ideas of IT, shows how it is being used, and illustrates how to make it work effectively. During its development NCC consulted data processing and training managers from industry. The complete package, which costs £3,350, consists of three modules each containing 10 sessions. In each module is a video cassette, student workbook, and a presenter's guide to the lecture notes and overhead transparencies.

Epson ink-jet

Epson has just announced its new ink-jet printer, the SQ-2500, costing £1345. This is a faster upgrade of their SQ-2000 ink-jet, with new ink chemistry.

Standard features include an 8k buffer, code compatibility with other Epson machines, the IBM character set, an intelligent serial interface and an automatic head cleaning mechanism. A tractor feeder and a double-bin cut-sheet feeder are available as options.

What's in view?

Milton Keynes software company The Ctrl Alt Deli, has signed an exclusive UK distribution contract with the American based InfoStructures for its product range.

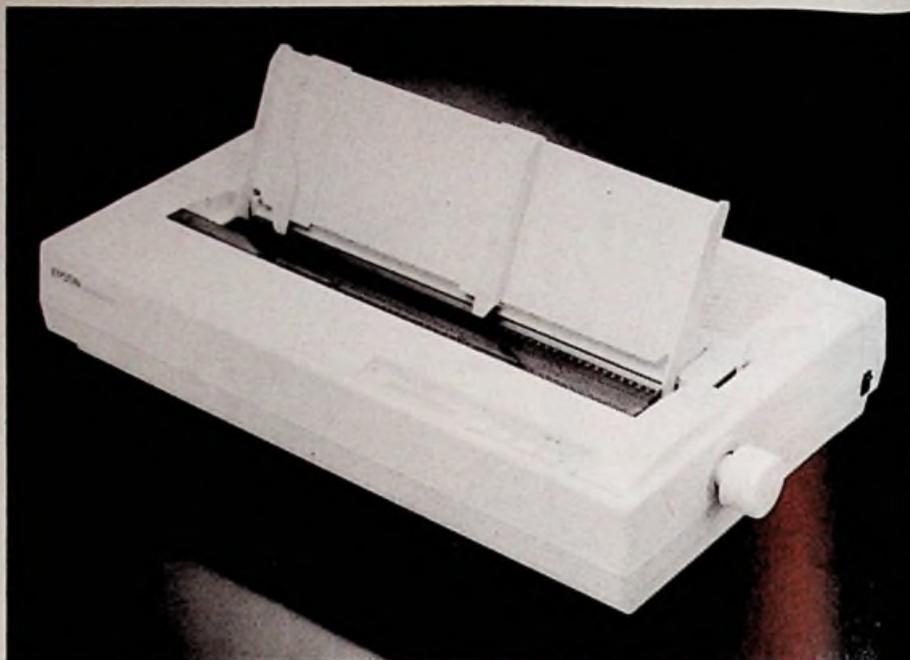
First to be launched in the UK is Popdrop, a PC based memory management program that lets users load and remove memory resident programs without rebooting their system.

Print spoolers, ram discs, keyboard enhancers and pop-up programs can be loaded in layers and removed when no longer needed.

Hard disc back-up

The Ex Streamer, from Tekdata Ltd, is an external cassette streamer for PC1512 users who have a hard disc model.

The back-up system, price £499, is based on the TEAC cassette tape streamer which has a formatted



Epson's latest ink-jet printer, the SQ-2500

storage capacity of 22 Mb. It's supplied in a Amstrad coordinated grey finish, with built-in formatter and slot-in short controller card.

Accompanying operating software offers file-by-file and mirror image backup, as well as a "written surface only" backup.

More free software

The Computer Training College, Manchester, is offering free software to anyone who either attends one of its computer training courses or subscribes to the telephone hotline service.

More than 400 titles will be given away, including word processors, spreadsheets, and databases. It is suggested that this offer will help small businesses to see the sort of package that might be useful to them. There is a charge of £75 a day for training and £50 a year for support.

Sagesoft down under

The Sagesoft Business Wise range of software is to be distributed throughout Australia by Personal Computer Software of Sydney whose managing director Jon Perry predicts sales will reach 1.25 million Australian dollars within the first year.

"The Australian PC market is about one year behind the UK, which gives us the advantage of being able to watch UK developments and learn from them", he said.

Pastoral package for Amstrad PC

Kubernesis, Bristol-based specialists in computer systems for church work, has launched its pastoral/membership system (KPB) for the Amstrad PC1512. It costs £225.

KPM is designed for use by ministers and church secretaries who don't necessarily have previous computer experience, to help them organise

things like membership records, homegroup lists, pastoral visiting plans, and distribution of church newsletters. The Rev. Stoker Wilson, general secretary of the Church Computer Users Group, said: "We can confidently expect that new church users will turn to the Amstrad PC1512 in their hundreds".

Mouse for the blind

Latest development from IBM's new Project for Persons with Disabilities team is an experimental mouse for the blind.

It can be used like any other mouse, but has a series of pins in its surface rather like the print head of a dot matrix printer. Pressing them creates a Braille-like image of the characters on the screen.

Improved Sidekick

A major improvement to Borland's Sidekick memory resident program for the PC (January APC) has just been announced.

Sidekick Version 2.0 will now include an outline processor, spreadsheet desk accessory, and Xmodem communications in with its current specifications. Existing Sidekick owners can upgrade to the new version for a nominal cost.

Mailing lists software

A NEW range of PC1512 software packages which allow firms to generate and maintain their own mailing lists has been released by Beck Systems.

Post Office recommendations on address style have been incorporated, and a built-in "letter writer" allows standard letters to be written and selectively addressed.

BS-Mail 1 has a 90,000 address capacity and features sort, autosearch, company find, print labels and print individually addressed letters, with a choice of colour or mono display.

BS-Mail 2 includes all these features plus coding of contact names, single address, letter writing and the facility to add notes for each addressee.

BS-Mail 3 also has worldwide addressing.

Sample discs cost £6 each, £15 for the sample set.

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- Cost of local phone call (London area) or cheap-rate PSS (extra 2.5p a minute).

These are basic charges. Most MicroLink facilities are free, including sending messages to other people on the system. Extras are:

Telex: 5.5p per 100 characters (UK), 11p per 100 (Europe), 18p per 100 (N. America), £1.25 per 400 (rest of the world), £2.75 per 400 (ships at sea). Plus a once-only telex registration fee of £10.

Telemessages: £1.45 for up to 350 words. An illustrated greetings card (for weddings, birthdays, etc) costs an extra 75p. Delivered anywhere in Britain first post the following day.

Overseas mail: 20p (Germany, Denmark), 30p (USA, Canada, Australia, Singapore, Hong Kong, Israel) for first 2,048 characters. For additional 1,024 characters, 10p and 15p.

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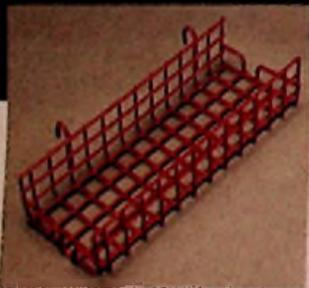
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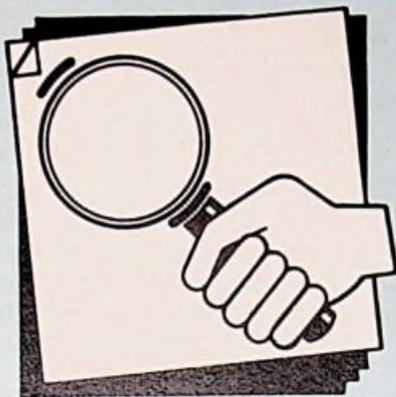
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REVIEW



Books still have a few tricks up their sleeves

The story goes that when Alan Sugar hit on the idea of selling a micro that would work mainly as a word processor he was told by all and sundry that he was mad.

With cheap electronic typewriters available, they argued, people wouldn't pay over £400. How wrong can you be!

What helped turn the PCW into such a roaring success and take the price of Amstrad shares from below £1 to over £6 was its very powerful word processing package.

And the only fly in this otherwise pure ointment was caused by LocoScript's very complexity. It does so much, in so many different ways, that people soon needed tutorial guides.

Katherine Cranford looks at some of the available disc and tape packages on Page 92. But though ink sprayed on boiled up trees may be primitive, books are not to be dismissed out of hand.

In-home (or out-home) reading

Ian Sinclair's *Amstrad Word Processing on the PCW 8256* has already been reprinted in its first year of production, so there's certainly a big market for what some would think of as steam-age technology.

Within its 150 pages the reader is taken very gently through LocoScript's basic features: Editing, layout, printing and file operations.

The first chapter is kept gratifyingly short and the reader is soon led into doing things alone.

It's a pleasure not to have to plough through the almost obligatory "What is a computer?", "What is a disc drive?" explanation that plagues so many books of this nature.

But the idea of word processing and a trip round the keyboard are covered – in a rather novel way – in chapter two. Here the direct printing features of LocoScript are described.

Being able to print directly from the screen to the printer, more or less as material is entered, helps the novice understand the computer and its foibles.

By using this feature in his second chapter, in one fell swoop Ian Sinclair illustrates all the fancy things you can do with the PCW printer. Underlining, bolding, pitch and line spacing changes and so on are demonstrated not so much by the book as by the user.

Having got some hands-on experience and hopefully having overcome some initial fears of computers, the novice moves into chapter three to start word processing proper.

Through the example of producing a letter, LocoScript's concept of groups and templates is introduced, as well as some of the easier editing facilities.

By the end of this chapter, the newcomer is ready to try out some of the wide range of print facilities covered in chapter four.

Understanding page layout is never simple and it must be accepted that LocoScript doesn't make things any easier. Chapters five and six of Ian Sinclair's book should help.

General page design is described in easy terms in chapter five, while laying out the page, including margins, centering, paginating and tabulating is covered next.

Chapter seven is very short and looks at changing the template with its editing layouts and rulers. Copy, Cut and Paste, using standard phrases (boilerplating), and Find and Exchange are dealt with, again in a relaxed style, in the next three chapters.

Chapters 11 to 13 serve to tie up some of LocoScript's features that haven't been covered so far: Hard and soft spaces, page breaks, extra printer options and disc management, including transporting files into and out of LocoScript.

The final chapter provides a Quick Help facility: Each of LocoScript's menu options is explained and the various choices available are described. The options are arranged as they would appear from a particular point on the menu screens.

This approach presents the information in a logical way, though it would probably have been more useful to provide a series of flowcharts for each main option.

For £8.95, anyone who is approaching LocoScript for the first time with some trepidation will find this book quite soothing. And unlike some of its hi-tech tutorial equivalents, you can read it on the train – or even in bed.

Minding your own business

Despite the powerful PCW-LoCoScript partnership, Alan Sugar's critics may have been right if word processing was the only application available on

Before buying a hi-tech PCW tutorial, consider the old-fashioned printed book.

Dave Osborne here reviews two by Ian Sinclair

PCW

AMSTRAD WORD PROCESSING ON THE PCW 8256



IAN SINCLAIR

USING AMSTRAD CP/M BUSINESS SOFTWARE



IAN SINCLAIR

the PCW.

But sooner or later the average business person will want to go beyond LocoScript and experiment with things like spreadsheets and databases.

From its title, you might think that Ian Sinclair's second book in the Collins Series, *Using Amstrad CP/M Business Software*, would provide some help in moving on to a wider range of applications.

But the title is misleading – it deals far more with CP/M itself than with business software.

The first three chapters cover (predictably) discs and the operating system. And although the text is very readable, much of that information is covered in the PCW manual. It isn't really necessary here.

The second chapter is probably a little more useful than the first. It deals with examining the directory, and some features of Pip and Show, valuable CP/M utilities that anyone using a PCW for business applications will need to know about.

Chapter three looks at some of the

more important disc operations such as renaming and erasing files.

Chapter four begins with a general introduction to the Submit facility and the use of Profile.sub to execute a list of instructions at start-up. Then we move on to look at Type, an introduction to Ascii codes and Dump.

In chapter five the ED(itor) utility is described in some detail – in fact the whole of the eight-page chapter is given over to it.

But the examples Ian Sinclair gives are a bit thin on the ground. Text is all very well, but for a tutorial book of this nature the old cliché of a picture and a thousand words is very true.

The maxim is at least remembered in chapter six, which looks at controlling the printer. Using the ED utility, all the Setlst and Paper features are described and illustrated.

And then a nice touch: You're shown how to use Submit, Profile and Setlst to print bright things like a company logo. Are we beginning to move towards the book's title?

Not quite yet. We return to the CP/M

theme in chapter seven, entitled *Keyboard Antics*. It talks about the Setkeys utility for customising the keyboard and, again though well-written, it could do with more examples.

Finally, before entering the chapters that do deal with particular types of business software, chapter eight looks at some of the PCW's utilities that have been glossed over so far.

It's a sort of rag-bag that has no theme other than its title of Assortment.

In it are described Set (for date and time stamping, read/write attributes, and password protection), Setdef, Get and Put, and Help.

Again the text is readable, but the chapter could have done with much greater use of sub-headings to highlight the various utilities and their options.

The last group of three chapters at last deal with business applications that might be used on the PCW: Spreadsheets, databases, word processors and ideas organisers.

Curiously though, word processors and ideas organisers are lumped together as something of an afterthought in the final chapter headed *Some Other Programs*.

I realise that many people will be quite happy to use only LocoScript, but to deal with major applications like word processors in a throw-away section is rather letting the side down.

The main part of each of the three chapters deals with specific applications packages: SuperCalc, Scratch-Pad Plus, dBase II, Cardbox, New Word and so on.

The descriptions are useful as examples of the kind of software available, but as reviews of the applications they're rather thin.

Chapter 12 deals with other printers that you might add to the PCW in place of the one supplied. But after some general stuff about printer types, it concludes with a description of only one printer – the Juki 6100 daisywheel.

It would have been more useful to have a description and explanation of the parallel interface and how to program it to make a second printer work.

After having read the excellent *Amstrad Word processing on the PCW 8256* I was rather disappointed with this book which simply didn't live up to expectations.

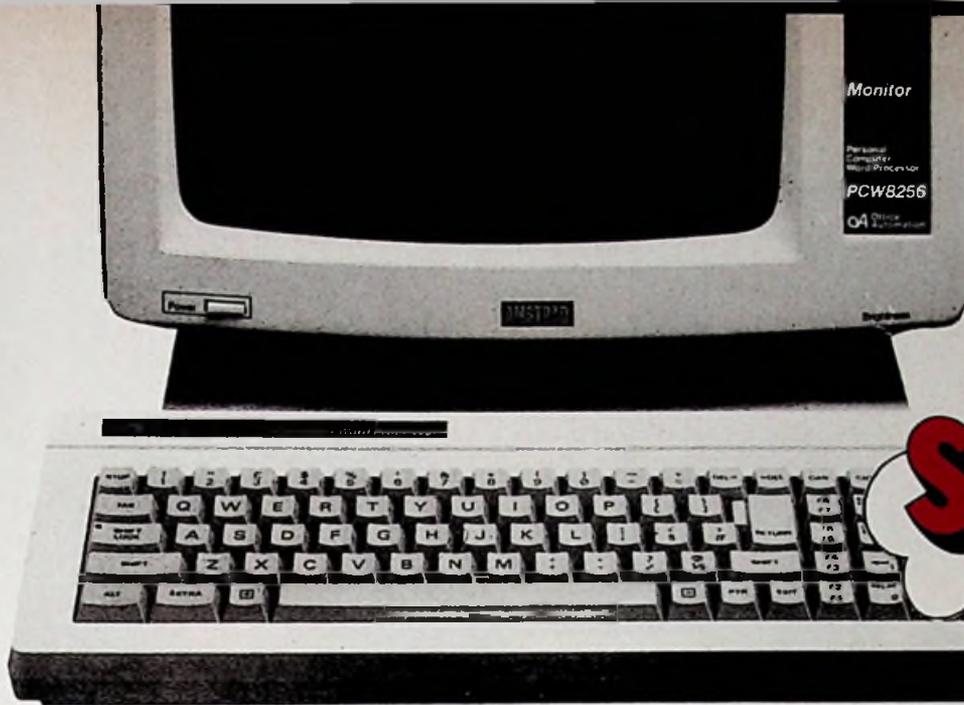
But I suppose that as a general introduction to CP/M on the PCW it could be a useful addition to your library.

Books: *Amstrad Word Processing on the PCW 8256, Using CP/M Business Software*, both by Ian Sinclair

Price: £8.95 each

Publisher: Collins Professional & Technical Books, 8 Grafton Street, London.

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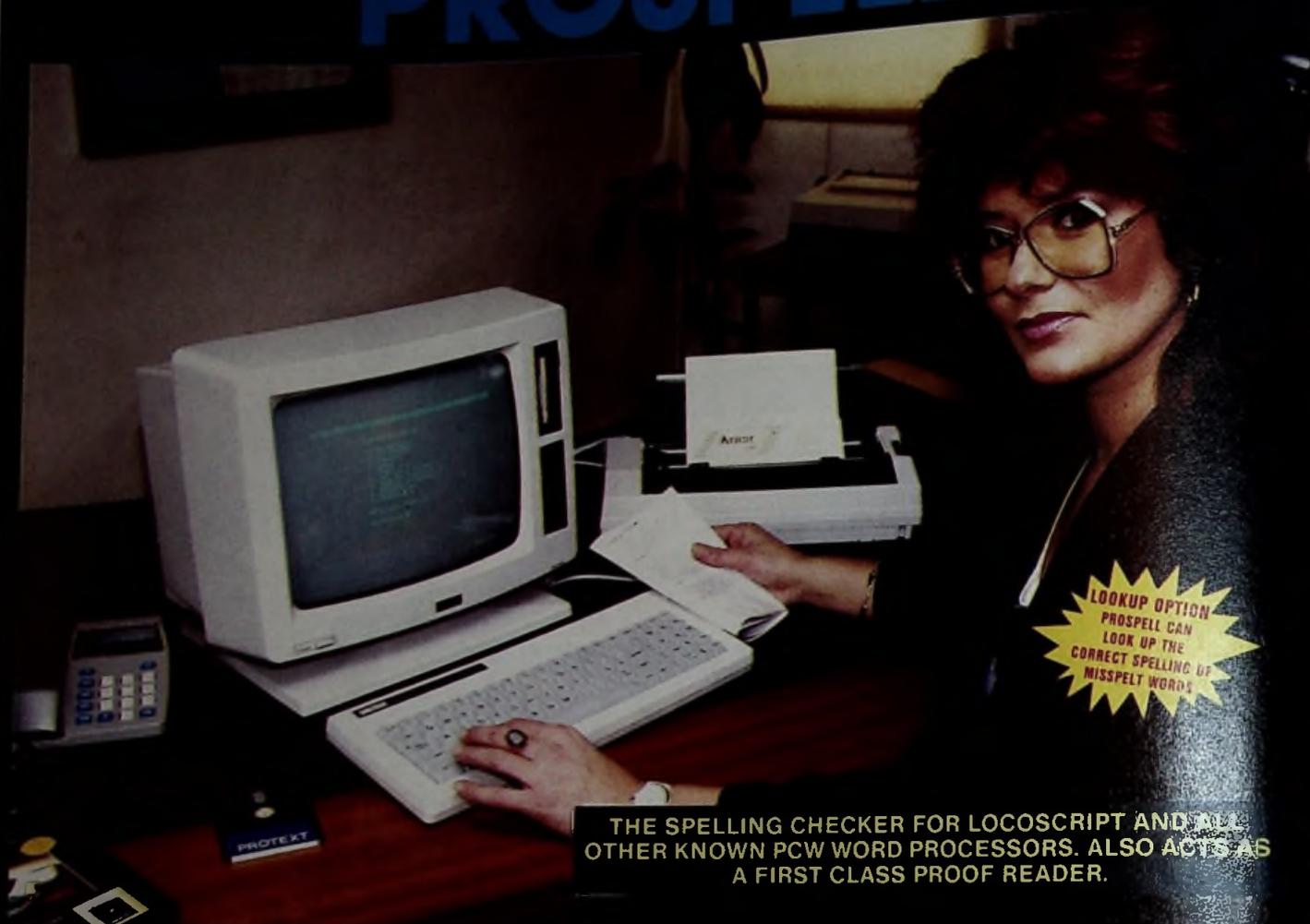
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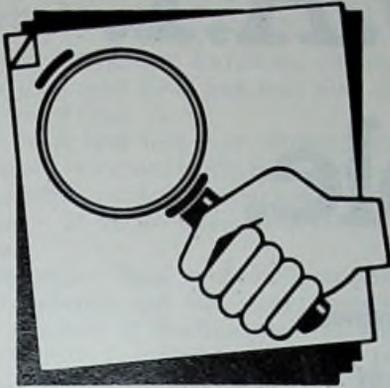
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APC

REVIEW



The market is brimming with tutorials of all kinds for learning LocoScript. Katherine Cranford examines four of them

PCW

LocoScript training packages

Everyone who buys a PCW gets LocoScript, so there are almost certainly more legitimate copies of it in this country than of any other word processing package.

Add to that the fact that a very large proportion of people who buy a PCW have hardly touched a computer keyboard before and you have a market for tutorials which a couple of years ago the industry wouldn't even have dared to dream about.

Imagine for a moment that you want to cash in on this lucrative market. One important decision you will have to make is about the *kind* of package you intend to produce – and it's not a straightforward choice:

- Books: All your potential customers can read, but not everyone likes digesting complicated printed instructions, however well you sugar the pill.
- Discs: All your potential customers have the right machine, but many may feel that rather than get to grips with yet another seemingly hostile disc, they might just as well stick to the one they're supposed to be learning about.
- Audio tapes: You're bound to get involved in complicated descriptions when a picture could say it all instantaneously.

On the other hand, the learner can concentrate on the screen and the keyboard while the disembodied voice on the tape gently prompts.

- Video tapes: They seem to have many advantages if you choose the right presenter and script, and get the right camera angles.

But you're limiting your market, not only to those who own video recorders, but also to those who own them *and* whose families will let them be used for purposes other than recording Dallas or watching a hired film.

- Interactive video discs: Simply not

on, unless you really have the pioneering spirit.

Bearing all this in mind, I have chosen to look at four packages from the point of view of the user – an audio course, a disc-based tutorial and two video tapes (two rather than one because they're the latest idea, and growing in popularity).

None of these packages assumes any previous knowledge of computers or sets out to be comprehensive.

Reel Time

The Reel Time tutor is one of the best audio courses I've come across, both in presentation and in the selection and organisation of material.

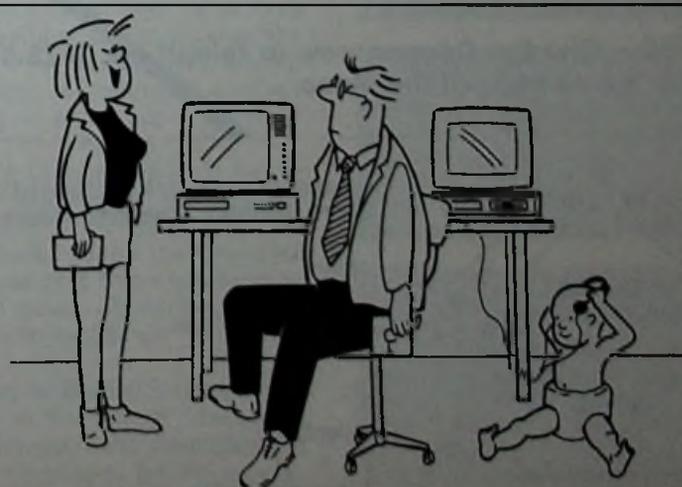
The presenter has a calm, friendly voice and speaks at a comfortable speed – slow enough to allow you to press the Pause button on the cassette recorder without panicking, an important consideration.

Moving at just the right pace, you're taken from loading paper into the printer and using the Direct Printing mode (the best way of introducing both hardware and software), via the major editing features, to an overview of Templates and Layouts.

All the basics are there. At the end of the course a beginner should be able to generate professional-looking hard copy and be fairly competent in disc and file management.

At present the package consists of two tapes, with full instructions and a LocoScript command reference card. But Head-Line, the supplier, has recently announced that it is to be supplemented with an electronic book – a disc containing a transcript of the audio tapes, and some extra features.

This should take care of the one big



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disadvantage of tapes as compared to printed material – you can't easily look things up.

Once having listened to the Reel Time tapes, the learner will be able to search the electronic book for all references to Tabs, or whatever.

It's even better than an index, though here's a good example of where LocoScript falls down in not allowing you to ignore upper and lower case in Find operations.

LernLoco

Minerva Systems' LernLoco (that's how they spell it) is just that kind of electronic book.

It is divided into four introductory chapters, nine more offering hands-on experience, numerous exercises and an index – in all an impressive 151k of data.

The entire "book" is of course written in LocoScript and you work through the chapters by loading them as you would any LocoScript document, in some cases printing them out first and building up your own manual.

In theory this ought to work well, but everything depends on how it's done. And to be blunt about it, the course is below the standard you might expect from a firm with a reputation like that of Minerva.

But it starts too much information is crammed into each screen, and there's also too much use of reverse video – it looks messy and loses its impact unless it's used sparingly.

Worse is that much of the text reads as if it has been thrown together in a mad rush and I'd be surprised if it was ever tested on raw beginners.

Take the opening page, concerned – quite sensibly – with getting out of trouble using Exit, Cancel, and so forth.

The beginner is told that the Delete keys will remove TEXT, RETURNS and CODES. Codes are briefly explained, but it's surely unwise even to mention them in your opening remarks. "Returns" are left entirely unexplained.

There's a different kind of example in the next chapter, where the beginner is invited to print the page displayed on the screen with a Save and Print command.

Fine – that puts you back at the main menu. The text carries on telling you how to print from the main menu, but by that time you can no longer see the text!

I could give scores of examples of poor structure, messy presentation and ambiguous explanations. Frankly, as far as the way LernLoco has been written, you're better off with the official LocoScript manual – and it takes something to make me say that.

On the other hand, and particularly in the more advanced sections, the course is able to achieve things with an ease no book or audio tape could emulate.

For instance, when it comes to cre-

ating special printing effects you not only see the result in hard copy, but also precisely how such effects are achieved in terms of pitch codes, layouts and the like.

You can learn a great deal about LocoScript's power by editing copies of examples (and the examples in LernLoco are very good), then comparing the results you get with the originals.

In my view, the real strength of this package lies here. It is targeted at beginners, but is in fact more suitable for those who want to build on some limited experience they have already gained.

Perhaps that's precisely the market disc-based tutorials should be aiming at, even the ones which are well written.

HB and Gateway videos

Think of the problems involved in describing to someone how you load paper into the PCW printer – it cries out for a practical demonstration and this is where videos really score.

You can show pictures of the screen as keys are pressed, or exactly what is happening as you copy a disc, all in real time – and more effectively than with Reel Time or any other audio or disc tutorial.

Perhaps even more than any other training medium, however, the effectiveness of a video depends on the quality of the execution in terms not only of presentation but also of recording techniques.

HB's *Word Processing on the PCW* manages to get both of these about right. The presenter has a pleasant style and the video itself makes good use of the medium.

For instance, a windowing system is often used to show screen and keyboard at the same time. This makes demonstrations immediately understandable whether for something as simple as using the Delete keys, or for more complicated manoeuvres.

The tutorial begins with designing the layout for a letter, then returns to essentials, such as creating a Start of Day disc.

In the space of an hour, with very clear and well-paced instructions, the tape covers disc management, editing and printer commands, without attempting anything terribly complicated.

Gateway's *Complete LocoScript* is much more ambitious – perhaps too ambitious. The word complete in the title is misleading (and the presenter makes it clear that there has been no attempt to cover everything), but there's a great deal to get your teeth into.

The course is divided into two one-hour units, at the end of which it is dealing with some of the complexities of layout and templates, having covered most of the common editing techniques.

That's quite a feat if you can imagine

teaching all that to a beginner in a couple of real-life one-to-one teaching sessions.

Of course, you can always go back and review the tape, but some of the beauty of a video is lost if it moves too rapidly for you to work comfortably on your own machine in time with the instructions. A few pauses would not have gone amiss.

Technically the product is not as professional as HB's video. No use is made of split screens and there are too few shots of the screen itself.

Further, the presenter sometimes points with his finger to parts of the screen when it is too far in the background to be clearly distinguishable (on my 16in TV set, at least).

However, some people will prefer Gateway's more informal style. The presenter may be using the outline of a script, but his delivery gives an impression of spontaneity – he even apologises for slips of the tongue.

If he really was working off the cuff, then he certainly knows his stuff.

So how do you choose?

Even assuming access to the necessary equipment, it's just as difficult for the potential buyer as for the producer to decide on the form of training package to choose.

It's a commonplace to say that everything depends on taste, but here it really does happen to be the case.

Personally – and I stress that word – of the four packages reviewed here, I would plump for the audio cassettes. Having said that, I think the future of computer training packages belongs to the video.

Product: Reel Time LocoScript course (audio)

Price: £9.95

Supplier: Head-Line, 1 The Elms, Tillington, Hereford HR4 5LG.

Tel: 0432 760046

Disc and audio tape package about to be released: £19.95.

Product: LernLoco (disc) Price: £16.95

Supplier: Minerva Systems, 69 Sidwell Street, Exeter EX4 6PH.

Tel: 0392 37756

Product: Word Processing with the Amstrad PCW (video)

Price: £19.95

Supplier: HB (Holiday Bros.), 172 Finney Lane, Heald Green, Cheshire, SK8 3PU.

Tel: 061 437 0538.

Product: The Complete LocoScript (video)

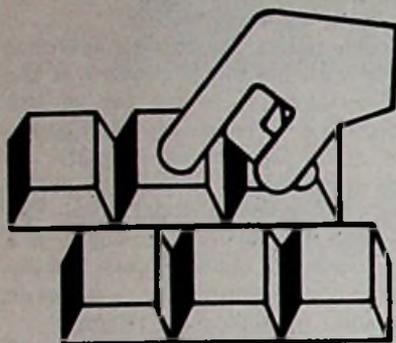
Price: £26.10 The two one-hour sessions can be bought separately at £16.10 each.

Supplier: Gateway Video Tutorials, 68A Dornton Road, London SW12 9NE.

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APC

PROGRAMMING



dBase II—time and date applications

Almost all practical database management systems involve data which is changing over a period of time. However, dynamic characteristics are not easily manipulated or controlled within dBase II.

In fairness to Ashton-Tate, in dBase III this severe shortcoming was remedied by built-in date variables and functions. But this is of little comfort to the many thousands of users who have bought the basic dBase II product.

This month I intend to come to aid of such users by looking at ways of impro-

ving in dBase II to monitor and make adjustments for time changes.

The process basically involves a more precise handling of data structures and memory variables, coupled with a little ingenuity in developing the associated application programs.

The only time-link provided in dBase II is the DATE() function. The output obtained is extremely cumbersome, appearing in the unfamiliar American format (mm/dd/yy).

And it's stored as an 8 part character string which expresses no numerical

*Jeff Harris
continues his
series on dBaseII
by looking at the
implications of
data variations*

```
*** dBASE II Program Config.prg (comment line)
SET TALK OFF
SET DATE TO
STORE date() TO cdate
STORE F TO check
DO WHILE .NOT. check
  ERASE
  @ 5,10 SAY "Input current date (dd/mm/yy)" GET cdate
  PICT "99/99/99"
  READ
  STORE VAL($(cdate,1,2)) TO day
  STORE VAL($(cdate,4,2)) TO month
  STORE VAL($(cdate,7,2)) TO year
  IF year >= 0 .and. year <= 99
    IF year/4 - INT(year/4) > .01
      STORE 28 TO febdays
    ELSE (leap year)
      STORE 29 TO febdays
    ENDIF (year/4)
  IF month >= 1 .and. month <= 12
    DO CASE
      CASE month = 2
        IF day >= 1 .and. day <= febdays
          STORE t TO check
        ENDIF (febdays)
      CASE month=4.OR.month=6.OR.month=9.OR.month=11
        IF day >= 1 .and. day <= 30
          STORE t TO check
        ENDIF (day30)
      OTHERWISE
        IF day >= 1 .and. day <= 31
          STORE t TO check
        ENDIF (day31)
    ENDCASE
  IF check
    LOOP
  ELSE (invalid day)
    @ 7,10 SAY "Invalid day input"
    STORE " " TO key
    @ 9,10 SAY "Press any key to continue" GET key
    READ
  ENDIF (day)
  ELSE (invalid month)
    @ 7,10 SAY "Invalid month input"
    STORE " " TO key
    @ 9,10 SAY "Press any key to continue" GET key
    READ
  ENDIF (month)
  ELSE (invalid year)
    @ 7,10 SAY "Invalid year input"
    STORE " " TO key
    @ 9,10 SAY "Press any key to continue" GET key
    READ
  ENDIF (year)
ENDDO (check)
STORE $(cdate,4,3)+$(cdate,1,3)+$(cdate,7,2) TO mdate
SET DATE TO mdate
```

Figure 1

CPC | PCW | PC

information.

Despite these shortcomings, the values held within this date variable will automatically be used as the last access date for database files as they are edited.

Moreover, they will be the benchmark for any date information stored in our DBMS for the duration of the session.

For these reasons, it is crucially important that this date logging variable is checked at the beginning of each dBase session, otherwise data integrity could easily be compromised.

The first step in setting up an automatic date logging procedure is the creation of a batch file, called say Db.bat, which contains just one line:

dbase config

This loads dBase and runs Config.prg. In dBase, files with the extension .PRG contain a set of dBase commands.

The code in Figure I could act as a current set and check routine for the system date in the British format.

I'm assuming here that you have some familiarity with the dBase command language and structures, as outlined in the September 1986 issue of APC.

If not, then refer to the manual, which is not as bad as many people make out.

Another data integrity consideration that should be taken into account at this initial stage of a dBase session involves a check procedure on the date the system was last backed up.

It is particularly important to keep back-ups in dBase II, since if your power source is not protected from spikes it can easily cause end-of-file markers to be placed at random records within the base currently open.

The code in Figure II takes care of this back-up routine automatically.

Let's assume that a memory file Backup.mem has been created and contains the character variable "budat", which stores the last date (in American format) on which the databases were backed up.

An important feature of the code is that it calls a program Datecon.prg which converts the character variable *cjuldate* into a numeric variable called *juldate* on which date arithmetic can then be performed.

Datecon.prg is listed in Figure IV and discussed below. It mimics the date handling functions in dBase III. Figure II, however, shows the back-up check program which calls it.

The program makes several assumptions about database file organisation, such as that all the active files are in the current directory and that there is room to back them all up on the storage medium specified by *mdriv*.

An alternative to naming database files explicitly in the program would be to store their names in the Back-up.mem file, or better still in a database which could be easily amended as new files were created or old/temporary ones deleted.

```
* Back-up procedure
RESTORE FROM backup ADDITIVE
STORE budat TO cjuldate
DO datecon
STORE juldate to jbudat
STORE date() TO cjuldate
DO datecon
STORE juldate to jdate
IF jdate > jbudat + 7
ERASE
@ 10,10 say "Back-ups over a week old!!"
STORE "Y" TO buok
@ 12,10 SAY "Automatic back-up required?(Y/N) ";
GET buok PICT "!"
READ
DO WHILE buok = "Y"
ERASE
STORE " " TO mdriv
@ 5,10 SAY "Which drive for back-up?(A,B,C) ";
GET mdriv PICT "!"
READ
IF mdriv.$ "ABC"
@ 7,10 SAY "Insert back-up floppy in drive "+mdriv+":"
ELSE (mdriv)
@ 7,10 SAY "Invalid Drive Specification!"
STORE " " TO key
@ 9,10 SAY "Press any key to continue" GET key
READ
LOOP
ENDIF (mdriv)
STORE " " TO bugo
@ 9,10 SAY "Press G to go, any other key to quit" GET bugo
READ
IF !(bugo) = "A"
USE dbfile1
COPY TO mdriv:bakfile1
USE dbfile2
COPY TO mdriv:bakfile2
*
*
*
USE dbfileN
COPY TO mdriv:bakfileN
STORE date() TO budat
SAVE TO backup ALL LIKE budat
@ 15,10 SAY "Back up completed"
STORE " " TO key
@ 17,20 SAY "Press any key to continue" GET key
READ
ELSE (bugo)
STORE "N" TO buok
LOOP
ENDIF (bugo)
ENDDO (buok)
ENDIF (budat)
```

Figure II

Returning to this month's main theme, I have already bemoaned the inability of dBase II to handle "date arithmetic". But what does this phrase actually mean?

The problem has been exposed in the back-up check routine. I was faced with the task of evaluating the number of days between two given dates but was

handicapped by the character format of these dates, which tells us nothing about elapsed time.

Using the VAL function you can convert date-format character variables into their numerical equivalents.

An elementary example of this procedure can be seen in Figure III, which draws on Staffile.dbf introduced

```
*Program segment for years of service
USE staffile INDEX surname
STORE "Y" TO mfind
DO WHILE mfind = "Y"
ERASE
STORE " " TO mname
@ 10,10 SAY "Input Surname" GET mname ;
PICTURE "!!!!!!!!!!!!!!!!!!!!!!!"
READ
FIND @mname
IF @ <> 0
ERASE
STORE date() TO mdate
STORE $(mdate,7,2) TO ccyr
STORE VAL(ccyr) TO mcyr
STORE mcyr - yoe TO servyr
? "Name: " + TRIM(title) + " " + TRIM(inits) + " " + surname
? "Company Service: " + STR(servyr,2) + "yrs"
@ 10,10 SAY "Another Search(Y/N)?" GET mfind PICT "!"
READ
ELSE (@=0)
@ 15,10 SAY "Input Surname not found!"
@ 17,10 SAY "Trying again(Y/N)?" GET mfind PICT "!"
READ
ENDIF (@)
ENDDO (mfind)
```

Figure III:

in previous articles in this series.

Staffile.dbf can be expanded to contain a numeric field for logging the year on which an employee was first employed, let's call it "yoe".

In order to evaluate the length of time a particular employee has been in the service of the company, this value needs to be subtracted from a numeric variable holding the value for the current year.

The code to perform this task using the DATE() function is shown in Figure III.

This approach is a simplification of the actual problem, since only the crude time measure of years is needed.

But suppose we wanted to work in dBase II - with more precise time values, such as days, as required in the back-up program.

In that case, full information on date expressions will have to be considered and the code in Figure III will have to be greatly enhanced to evaluate time differences.

We can tackle the problem by converting the character strings expressing dates into a Julian Day form. That is, allocating a sequential number for each day starting from 4713 BC (the Julian Day 2446797 started at noon on January 1 1987).

In this way we can link a value in a numerical sequence to each date expression, and full date arithmetic becomes a practical proposition.

But the big headache with complete

dates (mm/dd/yy format) is that the conversion to a numerical sequence is not a continuous relationship, since every fourth year an extra day is added to the month of February.

Datecon.prg in Figure IV converts a date into a number which dBase can work on.

The program assumes that the memory file Dater.mem contains the variables mon1, mon2... mon12 for the days in each month.

That is to say mon1 = 31, mon2 = 28

```
* dBase program datecon.prg
RESTORE FROM dater ADDITIVE
STORE VAL$(cjuldate,1,2) TO nmonth
STORE VAL$(cjuldate,4,2) TO ndays
STORE VAL$(cjuldate,7,2) TO nyr
STORE INT((nyr-1)/4) TO nleap
STORE nyr-1-nleap TO nnoleap
STORE 365*nnoleap + 366*nleap TO yrdays
STORE 0 TO mondays
STORE 1 TO i
DO WHILE i < nmonth
  IF i < 10
    STORE STR(i,1) TO mi
  ELSE (i >= 10)
    STORE STR(i,2) TO mi
  ENDIF (i)
  STORE mondays + mon&mi TO mondays
  STORE i + 1 TO i
ENDDO (i)
STORE (((nyr-1)/4) - nleap) TO rem
IF rem > -0.1 .AND. rem < 0.1 .AND. nmonth > 2
  STORE mondays + 1 TO mondays
ENDIF (leap year & past February)
STORE ndays+mondays+yrdays TO juldate
RELEASE ALL LIKE mon*
```

Figure IV

and so on. It also assumes that the base date for the sequence of numbers is 01/01/01, in other words Day 1 is January 1 1901.

The value of juldate will give the day number of the date expression cjuldate relative to date 01/01/01.

● Next time, we move down an order to hours, minutes and seconds and investigate methods for creating and using timers in program control.

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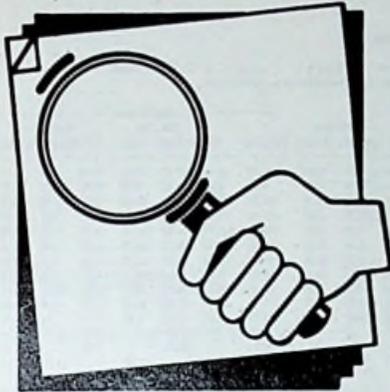
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APC

REVIEW



**David Rance
looks at
Sagesoft's
Payroll, a
straightforward
PC package for
almost any sized
company.**

Paying your way

Now that the price of PC compatibles has dropped to a level acceptable even to the smallest company, one of the first computer packages that ought to appear on a company manager's shopping list is some sort of payroll accounting program.

As John Burke and Barry Pickles explained in their article about payroll programs in the November 1986 issue of *APC*, making up weekly and monthly pay packets can be a tiresome and complicated process. I have been looking at Sagesoft's Payroll, which is intended to reduce the tedium of the chore.

The package arrives with a master program disc, a comprehensive user manual, installation instructions, and other useful literature.

Sage also throws in a disc which demonstrates some of its other software packages. You can run this while deciding how to spend the money saved by sacking your wages clerk, or wipe it clean and use it as a spare disc.

Installation instructions are supplied to cover most PC configurations, with the notable exception of single drive machines. But the omission is understandable. Although the program can be run using only one drive, things do get complicated when discs have to be swapped, quite apart from the fact that creating back-up copies of data is likely to be a thought-provoking process.

The number of employees that Payroll can handle is governed solely by the available disc space. On the cheapest option, a PC1512 with a single floppy drive, you can store records for up to 57 employees. A twin drive system will allow 156, and a 20Mb hard disc unit will cope, we're told, with 8,000 people. Needless to say, I was not in a position to test out that claim.

Payroll is entirely menu driven, and once beyond the password protection, running it involves only two stages, Data entry and report printing.

As far as data entry is concerned, the program allows some detailed variations when it comes to government regulations concerning payrolls and

benefits.

With company details, for example, it asks for a good deal of information. Some of this is purely descriptive, but in other cases it is highly significant. For instance, an employer has to agree with employees on a set of qualifying days for which Statutory Sick Pay is payable. Payroll allows up to four different qualifying day patterns for each employee.

Full data on each employee must be entered, including tax and National Insurance details, any overtime (three possible rates), the details of any holiday pay due, and the finishing dates of any employees leaving the payroll. Of course, this information can be updated as required.

All the necessary calculations are then performed by the program, totals of pay to date are amended on each employee record, and the system is ready for the second stage, processing the payroll and printing reports, statutory forms, and so on.

You can buy pre-printed payslip forms on continuous stationery directly from Sage – they look far more presentable than plain listing paper.

Three kinds of reports can be produced. The simplest type is a summary of all the employees' information entered and calculated. This provides a very useful overview of the total payroll.

Then other kinds of summaries relating to individuals or departments can be generated. For example, you can get summaries of employees' earnings and deductions for the current payroll run, as well as tax NI and pension deductions (including employer's contributions) for the current payroll and for the year to date.

Individuals' cash and Giro payments can also be summarised, and a departmental report shows how each of up to 99 departments is spending its payroll money – gross pay, NI, pensions and overtime. Finally, at the end of the tax year you can print the various forms required by the Inland Revenue and other government agencies – P11 deduction cards, P14/60, P35, and P45

**Figure 1:
Detailed
information
required
for each
employee**

Option 2 : ENTER EMPLOYEE DETAILS			
Reference No.	: 1	N.I. Number	: WL1412700
Name	: O.G. Foster	Date Of Birth	: 221035
Tax Code	: 423H	Sex	: MALE
N.I. Category	: 0	Marital Status	: MARRIED
Payment Type	: 04	Branch No.	:
Basic Rate	: 260	Account No.	:
Hourly Rate (1)	: 0	Department	: 0
Hourly Rate (2)	: 0	Starting Date	:
Hourly Rate (3)	: 0	Finishing Date	:
Qualifying Days	: 1	Who SSP for Year:	: 0.00
Gross Pay (P45)	: 0.00	Who SSP for P11:	: 0.00
Tax Paid (P45)	: 0.00	SSP Paid T.D.:	: 0.00
Gross Pay T.D.	: 253.50	Pre-Tax Adms.:	: 0.00
Tax Paid T.D.	: 49.59	Pre-Tax Dedns.:	: 0.00
Employee's N.I.	: 10.64	Post-Tax Adms.:	: 0.00
Total N.I. T.D.	: 36.72	Post-Tax Dedns.:	: 0.00
Employee's Pens.:	: 6.50		
Employer's Pens.:	: 5.20		

DAVID BANCE BEND		EMPLOYEE REFERENCE SHEET											
No.	Name	Tax Code	N.I. No.	N.I. Cat.	Type	Qual. Days	Date of Birth	Sex	Dept	Basic Rate	Overtime (1)	Overtime (2)	Overtime (3)
1	G. Foster	42M	HL141278A	D	GR	1	221035	M	0	260.00	0.00	0.00	0.00
2	J.F. Balber	46L	Z1571415B	D	GR	1	059047	M	0	260.00	0.00	0.00	0.00
3	Mrs Babson	22M	PK244987B	0	GR	0	221054	F	0	3.70	4.80	6.40	0.00
10	J. French	22M	SL4380412D	A	CU	1	061158	M	0	4.50	6.75	3.00	0.00
11	A. Pattinson	315M	Z1125616A	A	CU	1	210352	M	0	4.00	6.00	0.00	0.00
12	A. Smith	22M	PK254541A	A	CU	1	079561	M	0	4.00	6.00	0.00	0.00
13	E. Weston	31	HE43612D	A	CU	1	196641	M	0	4.00	6.00	0.00	0.00
14	J. Lambert	31	R7278222D	A	CU	1	159163	M	0	2.70	3.30	4.40	0.00
15	P.L. Jones	315M	WF121422A	A	CU	1	021143	M	0	3.70	4.80	6.40	0.00
16	M.E. Bay	22M	W1312652D	A	CU	1	079951	M	0	2.70	4.80	6.40	0.00
17	J.M. Lloyd	7D	W225649C	C	CU	1	230418	M	0	2.00	3.00	4.00	0.00

Figure II: Employee reference details

forms. Both the manual and program describe the statutory forms which must be produced and the records which have to be kept.

Here and elsewhere, the manual is gratifyingly explicit, and provides clear instructions about how to set up records for each employee, the company details, and the parameters necessary for calculating income tax, NI contributions, and Statutory Sick Pay.

When you first receive the program it is important that these figures are checked against the ones currently in operation, and that they are changed if necessary. Sage provides you with the latest details of these tables, and promises to issue bulletins to registered users if future budgets change the parameters.

I should mention the tutorial. It takes you through each step needed to run a monthly or weekly payroll,

printing summaries, analyses, reports and payslips.

Payroll does precisely what it sets out to do, and does it efficiently. Running a payroll can never be easy, but the Sage program will certainly make life more bearable if you're used to doing everything manually.

DAVID BANCE BEND		PAYMENTS SUMMARY - PART 1										Date: 190405	
Week/Month No. : 2		Gross Pay	Tax	N.I.	Admn	Notes	Pension	SSP	Post-Tax Admn	Notes	Roundoff	Roundoff C/T	Nett Pay
1	G. Foster	232.30	45.80	18.54	0.00	0.00	6.30	0.00	0.00	0.00	0.00	0.00	184.96
2	J.F. Balber	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	Mrs Babson	124.00	21.84	3.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.60
10	J. French	172.30	37.99	13.86	6.30	2.30	0.00	0.00	0.00	0.00	0.25	0.20	119.50
11	A. Pattinson	402.30	81.49	36.30	0.30	2.30	0.00	0.00	0.00	0.00	0.14	0.12	284.30
12	A. Smith	154.00	32.40	14.11	0.30	2.30	0.00	0.00	0.00	0.00	0.20	0.39	107.50
13	E. Weston	160.00	46.40	14.83	0.30	2.30	0.00	0.00	0.00	0.00	0.44	0.38	86.00
14	J. Lambert	32.62	6.00	6.35	0.30	1.10	0.00	0.00	0.00	0.00	0.26	0.31	107.50
15	P.L. Jones	145.35	24.63	13.25	0.30	1.95	0.00	0.00	0.00	0.00	0.26	0.28	97.30
16	M.E. Bay	127.75	27.33	12.30	0.30	1.35	0.00	0.00	0.00	0.00	0.26	0.28	97.30
17	J.M. Lloyd	29.40	6.00	6.00	0.30	1.10	0.00	0.00	0.00	0.00	0.10	0.20	29.50
11	Employees	1682.42	322.28	141.51	16.10	6.30	0.00	0.00	0.00	0.00	2.92	1.97	1219.30

DAVID BANCE BEND		PAYMENTS SUMMARY - PART 2										Date: 190405		
Week/Month No. : 2		Net. Inc. Total	SSP	Pension Cont. Employee	Pension Cont. Employer	Gross Pay	Tax	Net. Inc. Employee	Net. Inc. Total	Pension Cont. SSP Employee	Pension Cont. Employer			
1	G. Foster	45.80	18.64	26.72	0.00	6.30	3.70	507.00	95.47	37.28	73.44	0.00	13.00	16.00
2	J.F. Balber	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	Mrs Babson	21.84	9.30	17.03	0.00	0.00	0.00	241.00	45.24	9.36	17.03	0.00	0.00	0.00
10	J. French	37.99	13.86	34.28	0.00	0.00	0.00	347.00	75.90	31.72	68.36	0.00	0.00	0.00
11	A. Pattinson	81.49	36.30	78.80	0.00	0.00	0.00	568.50	111.34	51.69	111.70	0.00	0.00	0.00
12	A. Smith	32.40	14.11	36.49	0.00	0.00	0.00	208.00	64.67	28.22	60.90	0.00	0.00	0.00
13	E. Weston	46.40	14.83	31.66	0.00	0.00	0.00	220.00	92.06	29.30	63.22	0.00	0.00	0.00
14	J. Lambert	6.00	6.30	12.12	0.00	0.00	0.00	185.24	0.00	12.12	26.24	0.00	0.00	0.00
15	P.L. Jones	24.63	12.75	28.64	0.00	0.00	0.00	290.70	49.01	26.56	37.28	0.00	0.00	0.00
16	M.E. Bay	27.33	12.30	25.16	0.00	0.00	0.00	275.30	35.10	25.16	30.32	0.00	0.00	0.00
17	J.M. Lloyd	6.00	6.00	2.04	0.00	0.00	0.00	78.90	0.00	0.00	4.08	0.00	0.00	0.00
		322.28	141.51	298.62	0.00	6.30	5.70	3122.34	594.21	292.25	322.95	0.00	13.00	16.00

Figure III: Two parts to the payments summary

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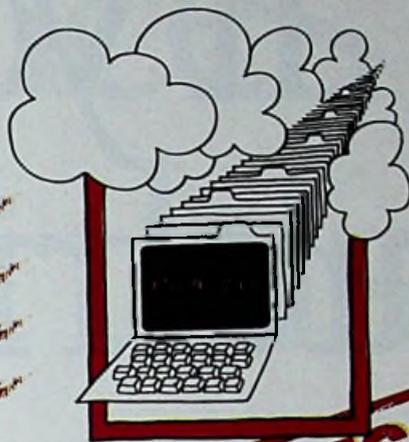
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Ease of Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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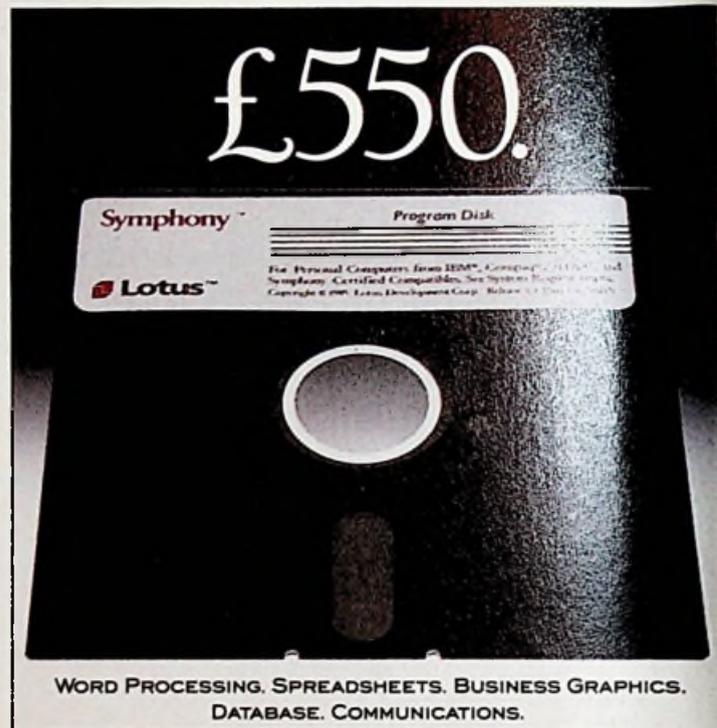
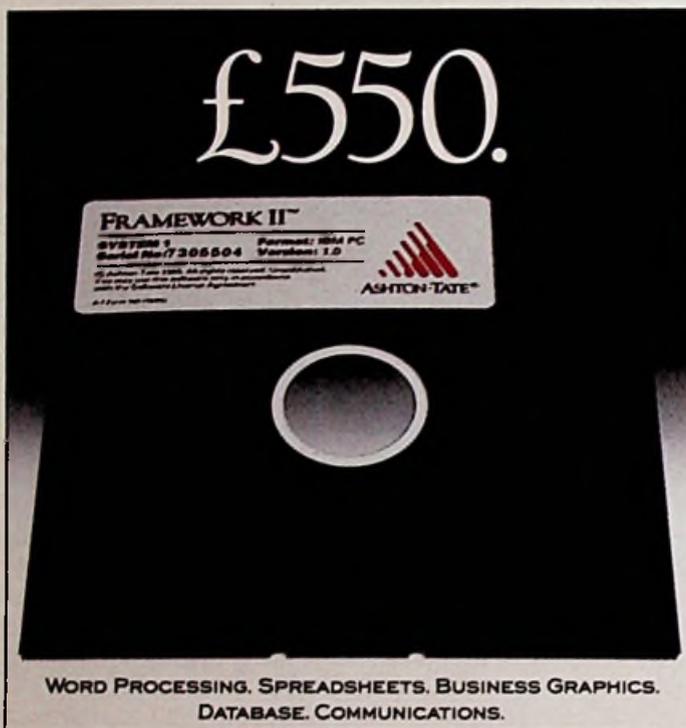
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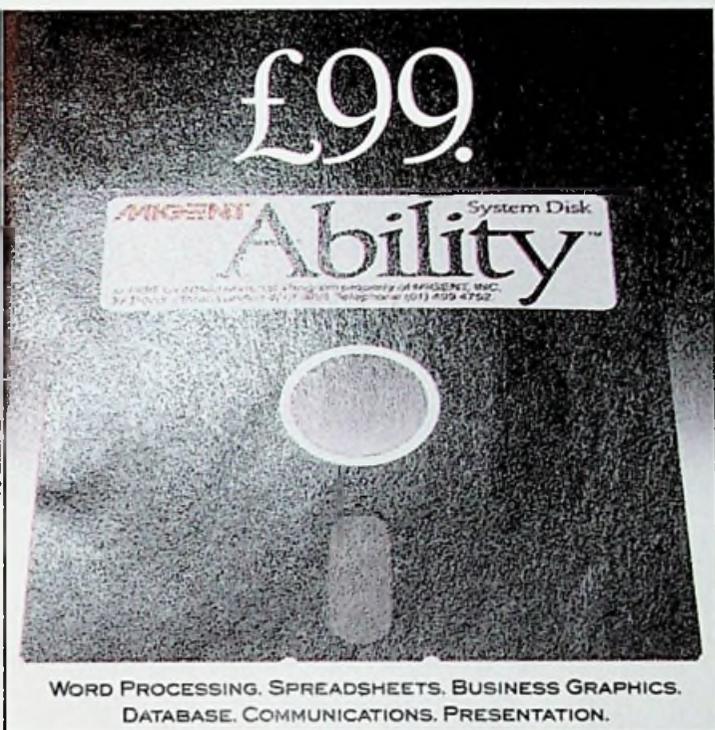
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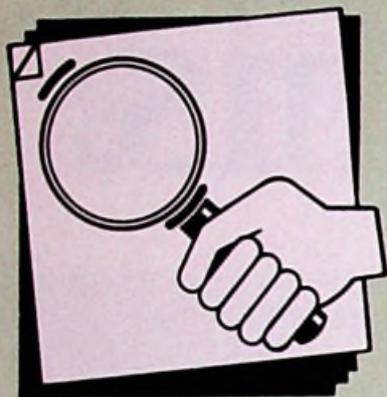
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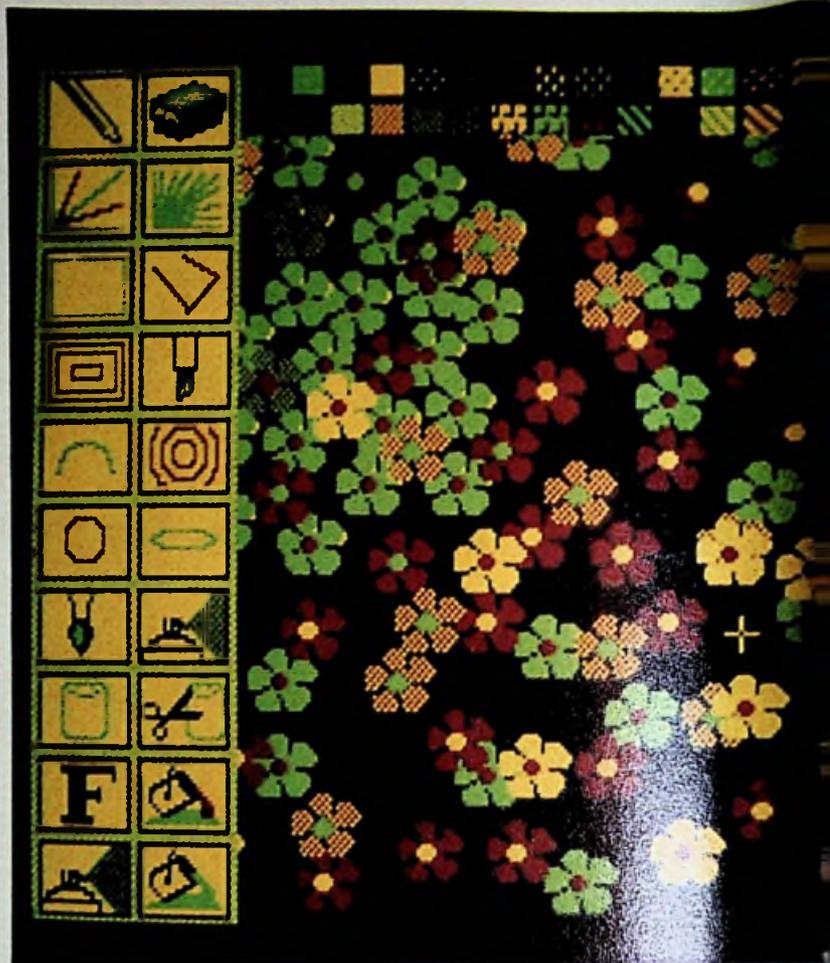
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APC

REVIEW



*Iolo Davidson
evaluates Art
Studio – an
alternative to
Gem Paint for
the PC*



PAINTING PRETTY

Since all Amstrad PC owners already have an excellent art program, you might wonder why they should even consider a rival package. Well, for the more committed user Art Studio provides some distinct advantages over Gem Paint.

Nevertheless, the first thing to notice about Art Studio is that the display is limited to only four colours at a time. This is because the program expects to see the IBM colour graphics adapter, which is limited to four colours in medium resolution mode.

Although you can change the colours, you're restricted to half a dozen foreground combinations, plus a separately chosen background. A high-resolution version is also supplied on the distribution disc, but then only two colours are available at any one time.

All this may seem a terrible drawback, given the Amstrad PC's ability to show 16 colours on screen simultaneously (and at least 10 of them distinctly different!)

But it could even be an advantage for some people because it means the Art Studio screens will be more readily exportable to IBMs or other compat-

ibles unable to display all the Amstrad PC's colours.

Another compatibility advantage is that Art Studio can import graphics screens from Lotus 1-2-3. So the graphs and charts created by this widely-used business package can be prettied up, re-labelled or even fudged to give a better impression at that important presentation.

The tools

The facilities offered by Art Studio are more extensive than those of Gem Paint. But there are a few notable absentees, including the equivalents of Gem Paint's Microscope tool and its Undo command.

Undo can be emulated by saving the picture to disc using Art Studio's Quicksave, before trying a tricky manoeuvre like a Fill. You can then recover the original by reloading it if your new idea turns out to be a disaster.

But the disadvantage of having to do this is not just that the process takes time – it is also that (unlike Undo) you have to remember to save before the disaster – which is probably how artists

Figure I: Colourful flowers (options displayed)



get that temperament.

Generally, however, the additional features more than compensate for the missing ones. The tools for drawing circles, ellipses and rectangles are more extensive than those of Gem Paint.

They allow identical copies of a shape to be created, as well as easy drawing of concentric circles, boxes and radial lines. And there is a facility which allows you to design and reproduce an arc repetitively.

Cut and paste are also more extensive than their Gem Paint counterparts, allowing you to store pieces of clip art to disc. These can then be reloaded at a later date and pasted into some new artwork.

Instead of a menu of tools for brush and spray-can, Art Studio lets you design your own. Although the spray is only adjustable for size and spray density, the brush can be made very complex (even a picture in its own right) using several colours.

Brushes can be saved to and loaded from disc. You also get a special spray-gun which sprays any of the font characters.

Character fonts are supplied on disc, each having two or three different sizes. Although the font size is less adjustable than with Gem Paint, the fonts themselves are more impressive and include two groups of special characters.

The arrows font consists mostly of arrows of different designs, but there are also stars and diamonds. The icons

font has a variety of symbols which will be useful in a commercial environment. All fonts can have a variable "drop-shadow" added to give a 3-D effect.

The menu bars obligingly disappear automatically after you have selected your tool, revealing an uncluttered, full-screen view of work in progress. This contrasts with Gem Paint in which only the patterns menu can be dispensed with, and only part of the full picture can be seen at a time.

What is more, the irritating time lag that plagues the drawing and pointing operations in Gem Paint is completely absent from Art Studio.

Response to the mouse movements and clicks is instantaneous and the screen image update doesn't lag behind a swiftly moving tool. This considerably helps the hand-eye coordination which is often a problem when screen-based icons are substituted for physical tools.

Printing

Art Studio comes with a printer driver suitable for an IBM or Epson compatible graphics printer. There is provision to install a different printer driver, but I had no opportunity to fiddle with this.

The driver supplied worked fine on my printer, a Brother dot-matrix which accepts Epson graphics commands. And although Art Studio's circles looked oval on the screen, being a little too tall for their width, they printed out perfectly round.

This is the opposite of Gem Paint, which produces printouts which seem

to stretch the screen image vertically. Variations in this "aspect ratio" are a perennial problem when printing graphics screens and your equipment may react differently from mine. But I was pleased to see Art Studio display nice round pie charts.

Instructions

The package certainly needs more documentation than the two pages devoted to Gem Paint at the back of the Amstrad PC manual, and what you get is very complete.

Its also just about right — there's a tutorial to get you going, and everything you need to know is there. It's readable, things are findable and though it runs to 100 pages it's still small enough for you to leaf quickly through to the bit you want.

The last judgement

In all I liked Art Studio. While Sunday painters needn't bother to change from the free Gem package, serious users of business graphics will find the extra facilities offered worth the cost.

Product: The Art Studio

Price: £49.95

Producer: Spectrum Holobyte, 1050

Walnut, Suite 325, Boulder, Colorado

British supplier: Mirrorsoft, Maxwell

House, 74 Worship Street, London

EC2A 2EN.

Tel: 01-377 4837

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Figure II: Pie Chart full-screen

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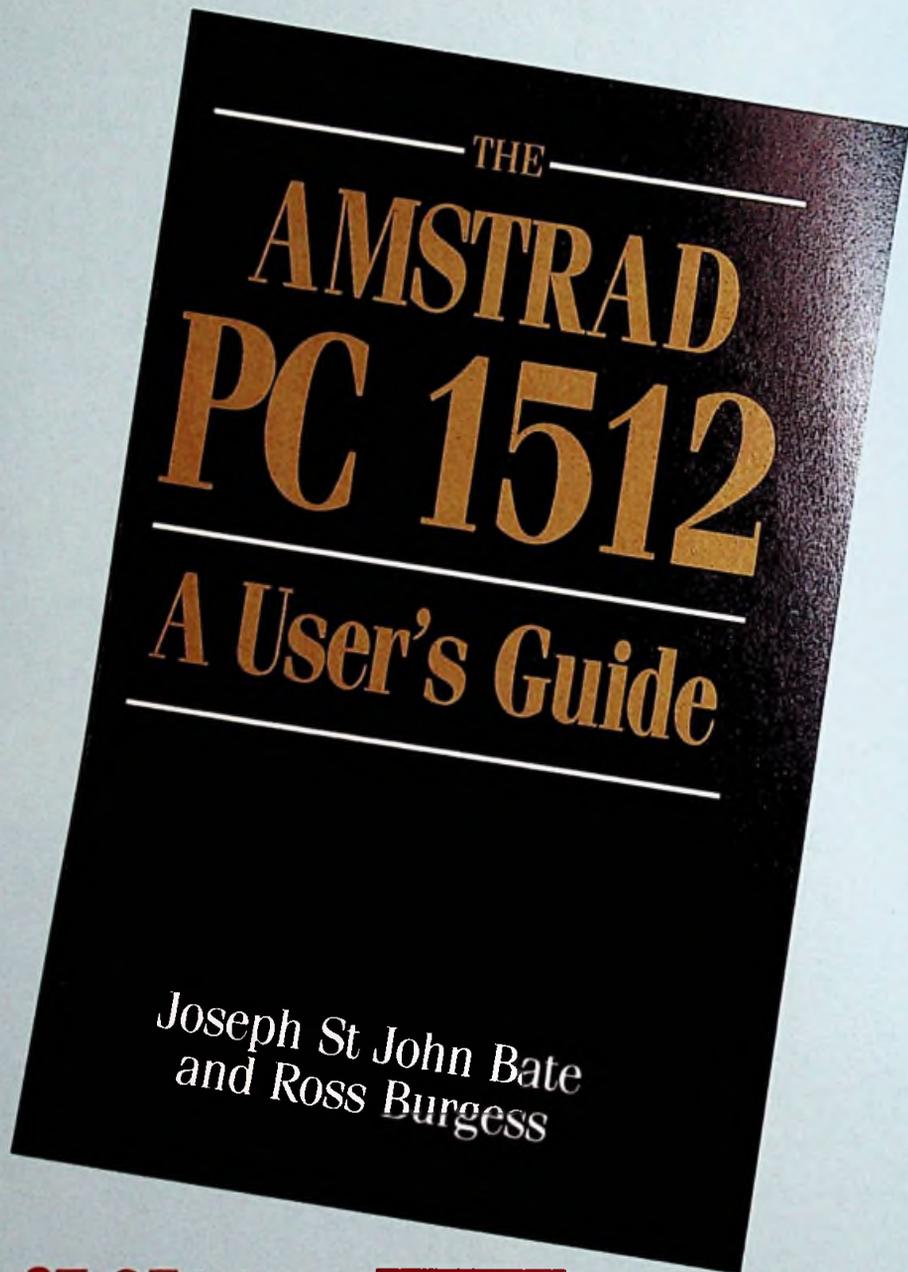
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PC magazine, February 1986 ”

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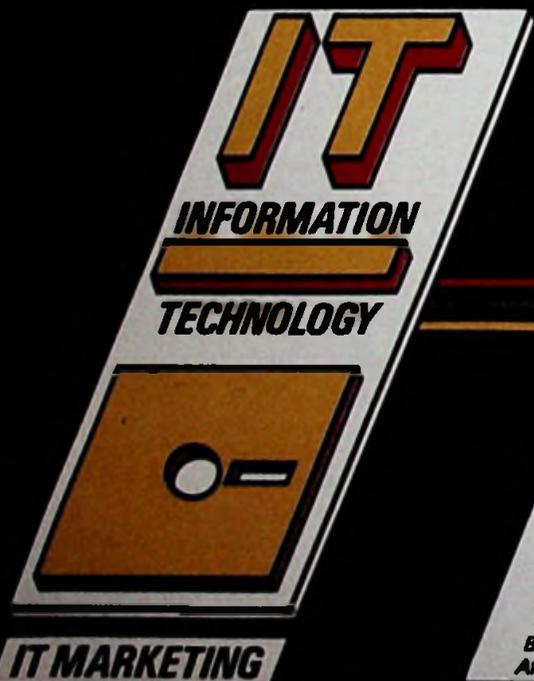
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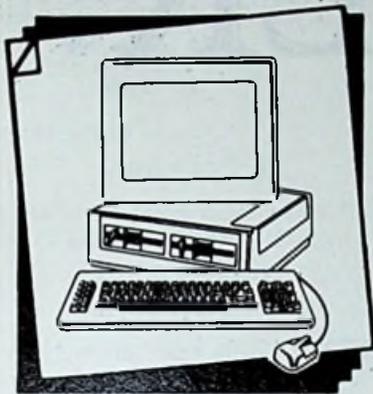
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SPECIAL



Continuing his exploration of the PC's Dos, Gordon Blaire unscrambles some of the complexities of batch files.



Automatic Dos

Batch files are a feature of both MSdos and Dos Plus which can significantly improve the quality of life with your PC1512. They can set your machine up just the way you like it each time you switch on, and reduce complicated routine operations to a single command.

If you've upgraded, or are thinking of upgrading, from a 6128 or a PCW to a PC, you may have already used the CPM Submit utility. The principle of the Dos batch file is the same, but it is built in rather than being dependent on an external command file such as Submit.com, and it is a more powerful tool.

Simple batches

A batch file is simply a text file with a filename that ends with the three letter extension .BAT. It can contain any valid Dos command – that is anything that you could legitimately type at the keyboard.

When you enter the name of a batch file at the > prompt Dos looks for it on the disc drive you have specified (or the default drive), and begins to read the commands it contains, obeying them just as if they were being typed at the keyboard. For example, if you create a file called CAT.BAT containing the single line:

DIR

then entering CAT causes Dos to examine the disc for a batch file called CAT.BAT, read it and obey the single command DIR. In other words, entering CAT will give you a directory listing – you have told Dos to CATalogue the files on your disc. Dos doesn't mind, incidentally, whether you use upper or lower case for commands.

You're not limited to one command. For instance, a batch file (let's call it Cleanup.bat) which contains the lines:

**DEL*.BAK
DIR**

will first delete all the files on the disc with the extension .BAK, then display the directory.

Once a batch file has begun its routine you simply sit back and watch. So it's worth knowing from the outset that a batch file can be stopped at any time by pressing Control + C, and answering Y to the "Terminate batch job?" prompt.

As we shall see, there are many extra batch commands which increase the range of possibilities. But before exam-

ining them, let's look at how you make up a batch file.

Batch files are like any other text file, except that each command must be followed by a carriage return (it's the equivalent of pressing Return or Enter if you were typing the commands in at the keyboard).

Actually creating them, however, can be something of a problem because many word processors include formatting codes in the text files they write to disc, and these will cause Dos to report errors. However most word processors have the facility to create simple Ascii (character) files, and these are what are required. For example, WordStar or New Word non-document files are fine as batch files.

It can sometimes be simpler, however, not to go to the trouble of loading a word processor. You can always use Edlin, the MSdos text editor, or ED, its Dos Plus equivalent. But Dos will also allow you to create simple text files directly with its internal COPY command.

For instance, to create the Cleanup.bat file above, you could enter the command:

COPY CON CLEANUP.BAT

This means "Copy to the console (write to disc) the lines I am about to type in and call the file Cleanup.bat".

You would then enter the lines **DEL *.BAK** and **DIR**, each followed by Return or Enter. Finally you would type Control + Z (this tells Dos that the last line entered is the end of the file), and follow this again with Return or Enter. Cleanup.bat will be written to disc, and Dos will respond with the message "1 File(s) copied".

Commands that you want to use repeatedly may contain slight variations each time. For example, at different times you might want to use any of **DIR**, **DIR *.BAK**, **DIR \BOOKS*** and so on. But each time you use the CAT batch file described above the result is the same – just a plain DIR command.

To get round this problem you can incorporate "parameters", which are markers for something that you will supply at the time you actually use the batch file.

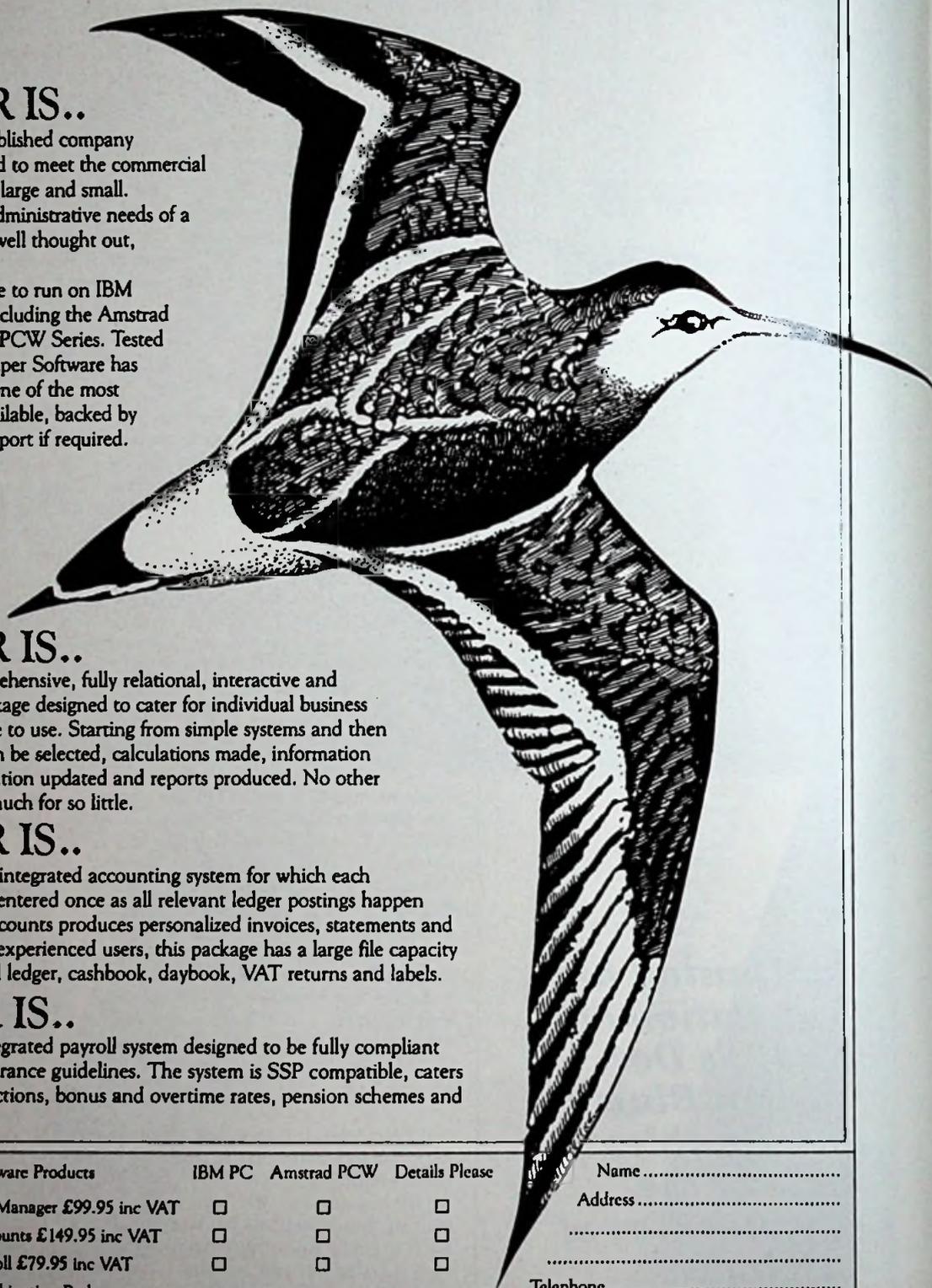
You can have up to nine parameters, and they take the form %1, %2, %3 . . . %9. These are replaced in the batch file by whatever you type on the command line – the first thing you type replaces %1, the second replaces %2 and so on. For example, if you change the CAT

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batch file to contain:

```
DIR %1
```

and then use it by entering:

```
CAT *.BAK
```

the %1 parameter is replaced by *.BAK, and the result is a directory of all the files ending in .BAK.

You can use more than one parameter per batch file and you can use each parameter as many times as you need. So, if the batch file Arc.bat contains the following lines:

```
COPY %1 %2  
DEL %1
```

then entering:

```
ARC *.TXT A:
```

results in %1 being replaced by *.TXT and %2 being replaced by A: giving:

```
COPY *.TXT A:  
DEL *.TXT
```

In other words, copy all the .TXT files to drive A and then delete them.

Any time you use a % sign in a batch file Dos expects a parameter number to follow. So if you want to use a % sign for any other purpose you have to use two (as we shall see in moment).

As well as the nine parameters %1 to %9 there is a special parameter %0. This is set to the name of the batch file itself. So if you use a batch name if it has a path, %0 would be set to CAT in the case of Arc.bat and ARC in the case of Arc.bat.

The purpose of %0 only becomes clear when you get to more advanced batch file applications, so I'll say no more about it here.

There are a number of Dos commands which, while they can be used directly from the keyboard, really only come into their own as part of a batch file. These are *ECHO*, *FOR*, *GOTO*, *IF*, *PAUSE*, *SHIFT* and *BREAK*. They're used either on their own, or in conjunction with other special Dos words, and they effectively extend Dos to a kind of programming language.

ECHO

The contents of a batch file are listed on the screen as they are obeyed. You can stop this by using the *ECHO OFF* command. The listing can be restored by using *ECHO ON*. The command:

```
ECHO This is a message
```

will print "This is a message" on the screen even if *ECHO* has been turned off.

Most batch files start with an *ECHO OFF* command, and helpful messages are then issued as required by using *ECHO*.

FOR... IN... DO

The *FOR* command can be used to repeat a Dos command as many times as required. The form of the command is: *FOR %%variable IN (set) DO*

command where %%variable is similar to a parameter but takes on each value in the set in turn. For example:

```
FOR %%a IN (MYFILE.BAK  
MYFILE.TXT) DO DEL %%a
```

will delete MYFILE.BAK and MYFILE.TXT as %%a takes on each value in the set. Notice here that a double percent sign is required.

The *FOR* command is really only useful when the set is specified using wildcard characters. For example:

```
FOR %%z IN (*.BAK) DO DEL %%z
```

will delete all .BAK files. In other words it is equivalent to *DEL *.BAK*.

A more useful example is:

```
FOR %%z IN (*.TXT *.CAL *.BAS)  
DO DIR %%z
```

which will give a directory of all the .TXT files, followed by all the .CAL files and finally all the .BAS files.

GOTO

The *GOTO* command can be used to transfer control to any command in the batch file. The point to which control is transferred is marked by a label - any word starting with a colon. For example:

```
:LOOP  
DIR  
GOTO LOOP
```

will give you a never-ending directory of your disc - a sure way to wear it out! The label is :LOOP, and the *GOTO* command forces Dos continually to return to the *DIR* statement. (As mentioned earlier, Control + C will stop it.)

IF

The *IF* command allows a Dos command to be carried out or not according to the state of some condition. The *IF* statement has the form:

IF condition command

where condition can be one of

ERRORLEVEL number

first string==second string

or

EXIST filespec

The **ERRORLEVEL** is a number returned by Dos programs which indicates how successful they have been. The only trouble is that most Dos programs either don't set an **ERRORLEVEL** or there is no information on what they set. But if, for instance, *MYPROG* sets **ERRORLEVEL** to 2 when it fails, the batch file:

```
MYPROG  
IF ERRORLEVEL 2 ECHO FAILED
```

will print **FAILED** when appropriate.

The other versions of the *IF* command are more useful. **IF string1==string2** can be used to test the value of a parameter. So:

```
IF %1==MIKE ECHO Hello Mike
```

will display "Hello Mike" if the first parameter is **MIKE** (notice that a double equals sign must be used, otherwise Dos will give you a Syntax Error message).

The final form of the condition simply tests if a file exists or not. For example:

```
IF EXIST %1 COPY %1 %2
```

will copy the file specified by the first parameter only if it actually exists.

You can also use the word **NOT** in front of all these conditions to execute a command only when they are not satisfied. For instance:

```
IF NOT EXIST %1 COPY %2 %1  
will only make a copy of %2 under the new name %1 if %1 does not already exist.
```

PAUSE

PAUSE is self-explanatory. The *PAUSE message* command displays a message and then waits for the user to press a key before the batch file continues its execution. So:

```
PAUSE Delete all the files on B?  
DEL B:.*
```

will display the message "Delete all the files on B?". Pressing a key will then cause all the files on B to be deleted. (To reject the delete command, press Control + C.)

REM

REM stands for **REMark**, and the *REM message* command allows you to include comments within a batch file. They have no effect but they are echoed to the screen if **ECHO** is **ON**.

SHIFT

The **SHIFT** command can be used to increase the number of parameters allowed in a batch file. Following a **SHIFT** command, the value of %0 is replaced by %1, %1 by %2 and so on to %8. So parameter %9 is set to the tenth item on the command line, which was previously inaccessible to the batch file.

You can use any number of **SHIFT** commands. For example, to list every item on the command line you could use:

```
:LOOP  
ECHO %1  
SHIFT  
GOTO LOOP
```

which displays %1, **SHIFTs** the value of %2 into it, displays it again, and so on for ever.

To make this display loop stop, apart from using Control + C, all we have to do is include an *IF* statement to test when %1 is empty, in other words when the last item has been listed.

Unfortunately you can't write %1== to mean %1 equals nothing, since Dos forces you to write something on the other side of the double equals sign.

The solution is to use a dummy piece of text on both sides of the equals, as in %1A==A. If this is true, %1 must

really be nothing at all. Thus the final version of the batch file is:

```
:LOOP
IF %1A==A GOTO FIN
ECHO %1
SHIFT
GOTO LOOP
:FIN
ECHO ALL DONE
```

To try this out create a batch file containing the above lines called, say, Test.bat, and enter TEST x y.

For information on the BREAK command, see the PC1512 manual, page 246.

Using batch files

There is a temptation, once you get to grips with batch files, to go overboard in your new-found enthusiasm. All kinds of Dos commands can be incorporated - CLS, EXIT, SET and so on.

Dos is not a full-blooded programming language and there are therefore some deficiencies in the range of commands for constructing batch files: For example there's no way of asking a question and receiving an answer. But you can make your PC1512 do all kinds of clever things automatically (and possibly spend more time working out the batch commands than would be saved by avoiding them).

In the main, most of the advanced batch file tricks are just that - tricks, and it is surprising what you can do

without getting too involved with them.

For instance, if you have an Epson or compatible printer, it is not difficult to write a relatively uncomplicated batch file that will send the appropriate control codes to set it into condensed or normal mode. This can be done by creating a file called, say, Style.bat containing:

```
ECHO OFF
IF NOT %1==C GOTO NORM
ECHO `O
GOTO FIN
:NORM
IF NOT %1==N GOTO FIN
ECHO `R
:FIN
```

Entering STYLE C will set the printer to condense mode and STYLE N to normal mode.

Notice that `O and `R in the ECHO commands are control codes entered as Control + O and Control + R. Each will display a symbol on screen and you can experiment to find ones for other batch files, but avoid the letters C, F, I, J, H, M, P, S and Z, all of which have special significance (`P may make the computer "hang"). `G will sound a beep (useful for error messages).

The most common example of a batch job is the Autoexec.bat file. Whenever your start Dos off (that is, boot up) it looks for the file Autoexec.bat which it automatically obeys as a standard batch file.

You can use this facility to set up

your machine ready for use every time you start work. Thus if your main work is word processing using WordStar in a directory WP then a suitable Autoexec.bat file might be:

```
ECHO OFF
CHDIR WP
WS
```

which will set your current directory and load WordStar every time you start up.

As an example of a more complicated Autoexec.bat startup, consider the problem of a number of different users working with the same machine.

Each user has a separate directory and it would be an advantage if this was made their working directory every time they booted up from Dos. This can be achieved by creating an Autoexec.bat file containing:

ECHO WHAT IS YOUR NAME ?

and a further batch file for each user with a filename the same as their own name. So user Jones's batch file would be called Jones.bat and might contain:

```
ECHO Welcome
Mr Jones
CHDIR JONESDIR
DIR
```

● The next topics to be covered in this exploration of Dos facilities will be the curiously named Pipes and Filters.

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Allows you to enlarge or reduce a screen image in both the horizontal and vertical plane.

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This function enables you to define any size area of screen as a symbol which can then be saved as a file. Once stored this symbol or image can be merged on to the main workscreen.

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These functions can be used to manipulate a defined area of screen in the appropriate manner, i.e. reverse/mirror an image, rotate an image by 90°, etc.

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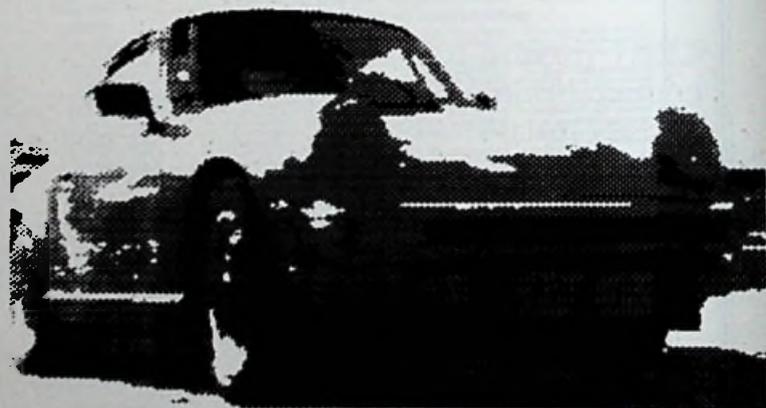
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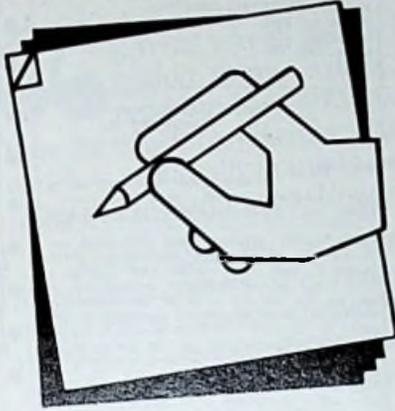
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APC

FORUM



WordStar 1512 - what others say

The review of WordStar 1512 in our January issue ruffled a few feathers.

You may remember that from the point of view of someone with long experience of the established WordStar product, Dave Osborne complimented certain features of the new package, but overall was quite critical.

Many other magazines have published favourable reviews of the product. Some of their comments are shown below.

WordStar 1512 is cheap at £69.95, but it also offers virtually all the attributes of traditional full-price word processors . . . it is a word processor which could be useful to most organisations. It has advantages for beginners, for occasional users and for some old hands.

The package requires minimum support during installation and use, yet it can do full word processing tricks when needed.

PC Management, December 1986.

The program's great ease of use suggests that many users hitherto afraid of word processing will be able to learn and use WordStar 1512 with little difficulty - and at a low cost.

WordStar 1512 could bring word processing onto many new desktops.

PC Week

WordStar is the best known and most successful of the earliest word processing programs for personal computers and has continued to sell well even in the PC market alongside WordStar 2000. This curious situation could bode well for the success of MicroPro's latest offering, WordStar 1512.

WordStar 1512 succeeds in its attempt to provide a good range of word processing features in an easy to use package at a competitive price.

PC User, November 1986.

WordStar 1512 has some of the power potential of WordStar, and uses the WordStar 2000 spelling dictionary and mailing list system.

This will mean little to potential users who know nothing of the earlier Micropro products - the important point is that WordStar 1512 has an excellent pedigree and is compatible with the world's most widely-used word processing programs . . . it has the potential to become a mainstream business word processor.

What Micro, October 1986

WordStar 1512 is far more than a basic word processor, since the package includes both a sophisticated spell-check program and a database tailored to the needs of users with a requirement to build files of customer names and addresses.

The secret to the user-friendly nature of WordStar 1512 is the fact that the majority of often-used text manipulation commands are available from a series of drop-down menus in much the same way as Locoscript on the Amstrad PCW. In addition, a series of in-context help files is available.

Your Computer, November 1986.

We were not entirely alone, however, in our view of WordStar 1512:

If it doesn't obey Wordstar commands, and doesn't look like WordStar, one had to ask - seriously - whether MicroPro is entitled to call it WordStar.

That's a quotation from Personal Computer World, November 1986. And the reviewer ended by asking:

Am I the only person in the world who thinks the company is mad?

What do you, our readers, think about the product?

Keep writing to us. Our address is: APC Forum, 169 King's Road, Brentwood, Essex CM14 4EF.

The Cambase controversy

The review of Cambase in the December 1986 issue of APC provoked a number of responses from readers.

The reviewer, Eric Fenster, is an American journalist who was living in France when he wrote his article. He has since returned to the States, where at present he does not have access to either Cambase or a PCW.

It would normally be our policy to wait for his considered reaction, but since this would cause too long a delay in allowing views to be aired, we publish below substantial extracts from a letter written to us by Roger Grenyer, Managing Director of Camsoft, together with our reply.

We have to take exception to your review of Cambase. The article was completely unbalanced, concentrating solely on mostly inaccurate criticisms of the software. I take them up in the order they appeared in the article.

By using the memory drive Cambase frees all the disc capacity for data. According to your reviewer, this is still not enough.

If he can advise us how to write data to more than the disc capacity of the computer, we shall be pleased to incorporate his idea!

The so-called problem of changing printer codes is invalid, and may be accomplished by setting the default drive to B.

Cambase is criticised for having fixed file sizes. But records can only be accessed quickly if they are of a constant size. This is an example of a trade-off during software design, of which any reviewer should be aware.

It is nonsense to say that if you have a record consisting only of a client's name you then have to hit Return 38 times. The number of fields in a record is fixed by the user. And if you have set validation parameters for certain fields, of course you have to adhere to them during input.

The review takes four paragraphs to criticise the reasonable limitations on the use of conditional fields, without mentioning that most databases do not provide any form of conditional relationship between fields.

The criticism that the user can only designate up to 16 fields to select or sort on at the same time is an indication of the bias of the review. Show me an application where a user often needs more than 16 different criteria for selection!

By saying that "the real weakness of Cambase is its processes", your reviewer condemns a whole range of powerful options missing on most databases by focusing on one or two very detailed areas of apparent complexity.

He has missed the complete purpose of processes, which are options open to the user for rapid updates and analyses. And the suggested option to

use only part of a process would defeat the object of its being a quick automatic standard operation.

Of course powerful processes have to be used carefully, and you should always test them on dummy data, as the manual emphasises.

Jaguar cannot be blamed because their XJS does 150 mph and is therefore dangerous if drivers do not use the power with care.

If you have designed a process to allow input to a field, it is daft to set that field as protected and therefore prevent input!

Your reviewer failed to mention many notable features of Cambase, such as the free 90 day Hotline, the Test Filespec facility, help messages, password protection, automatic sort of record key and so on.

Roger Grenyer,
Managing Director,
Cambrian Software Works Ltd.

Gabriel Jacobs replies: I accept your point about balanced reviews. All I can say is that the title "A closer look at Cambase" was obliquely intended to indicate that the qualities of the product had been taken for granted. This did not come across strongly enough.

Some of your other criticisms, however, call for more defensive comments – though always in the light of that acceptance of the unfortunate lack of balance.

While it is true that using drive M frees a complete disc for data, the point made in the review still stands. It was that Cambase is unusual in having such an intimate link between program and data files.

A power failure with most databases using drive M simply means loss of updates. In Cambase it can mean corruption if you are performing certain operations.

Fixed file sizes do mean faster access, but most applications are open ended. To ask the user always to fix in advance the maximum number of records which will ever be required is too much of a constraint. In my view Eric Fenster was right to consider it a minus point.

He was wrong to imply that all 39 fields must be used in a record – though his real point was that you can't go back to a field to edit it without invoking the Amend procedure.

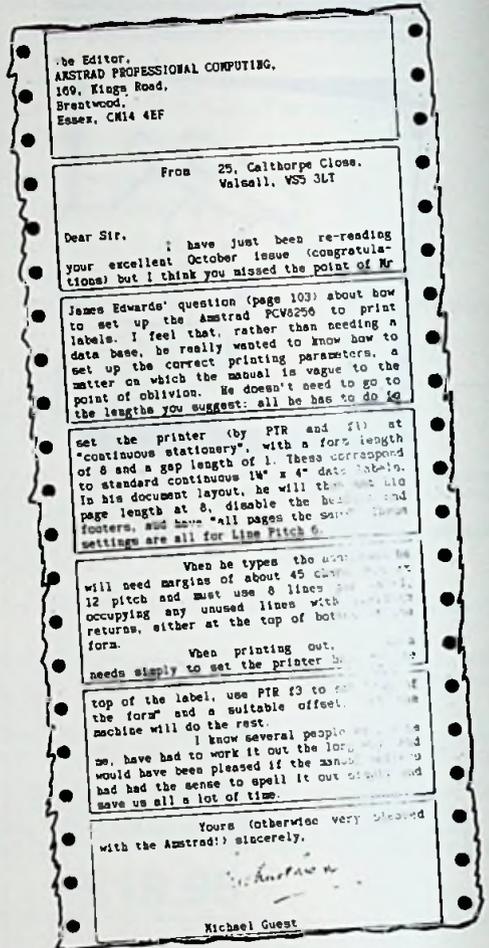
And while you are obviously right that validated input must mean just that, is there any fundamental reason validated?

I can see the space-saving advantage of setting just one bit for a logical field, but surely it would have been possible, for very little overhead, to allow a yes/no field to be skipped?

I would not recommend a Jaguar XJS to an inexperienced driver who wanted a run-about to do the shopping. Eric Fenster surely had the right to warn of the dangers inherent in a powerful system, though I of course accept your general point about processes being optional.

Since reading all the correspondence on this subject I have had a closer look at Cambase myself. At £49.95 it has to represent exceptional value for money. It is not perfect, but no database is.

A labellous statement



APC: We receive letters written on postcards, backs of matchboxes, even toilet paper.

But this is the first time we've received one in which the stationery used says as much about the content as what the writer has actually written.

Thanks – we're sure it will be useful.

Forum and Techlet generate a bulging mailbag each month and it simply isn't possible to publish more than a small fraction of the letters we receive.

All the letters are read carefully – you have our assurance on that – but we simply can't reply individually to every one not published, or we would be spending more time writing letters than designing and producing APC.

We do our best to write back, but we can't commit ourselves to providing a personalised readers' service even if a stamped addressed envelope is included.

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Punch
WEEKLY
March 28 1984

“...What you all need is BrainStorm, a remarkably intelligent notion from Caxton Software...The principle behind the program is so obvious that one wonders why it hasn't been thought of before. It is this: when you start thinking about something which is eventually going to be structured and ordered, you initially think in random jumps. Unconnected ideas flash into the brain...

Then begins the long slow laborious business of putting them together in some sort of order. Does this bit go with that bit or the other? Have I already made that point? Do I need to remind them of this when I mention that a second time? How much longer can I walk around scratching my bum and smoking before someone asks why haven't I finished?...

BrainStorm answers all these questions with great simplicity. Essentially it is a *list organiser*. You start with a more-or-less blank screen. You can either plan your main headings now, or start entering jottings at random. Most people go for a half-way house; perhaps you can put down "Beginning, Middle, End", as your three headings. Then start putting down your ideas. Pretty soon BrainStorm will follow your thoughts and start making interconnections on the basis of word-matches...

Using it while writing this review has been a salutary experience. Couldn't manage being without it now, whether for organising production schedules for these pages, planning our longer articles elsewhere in the magazine, or writing speeches...

Hitch-hiker wizard *Douglas Adams* is said to be delighted with his...

Takes about 30 minutes to learn to use it...

Because our products are so simple to use, we are able to offer **FREE** and **UNLIMITED** telephone support on all of them. Should you need help with BrainStorm just call us. Your call will be welcomed and your query will be answered in a pleasant, helpful and efficient manner – because that's the sort of people we are.

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Available for Amstrad 6128, 8256/8512, IBM PC and all compatibles.

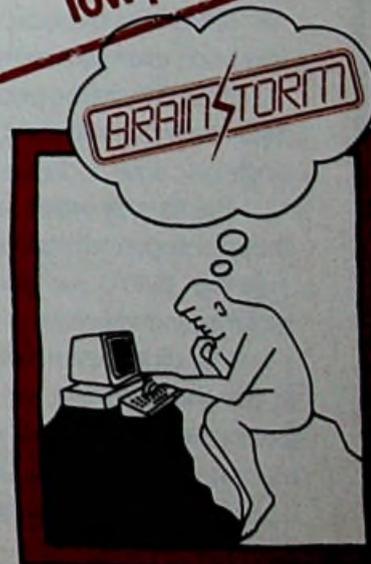
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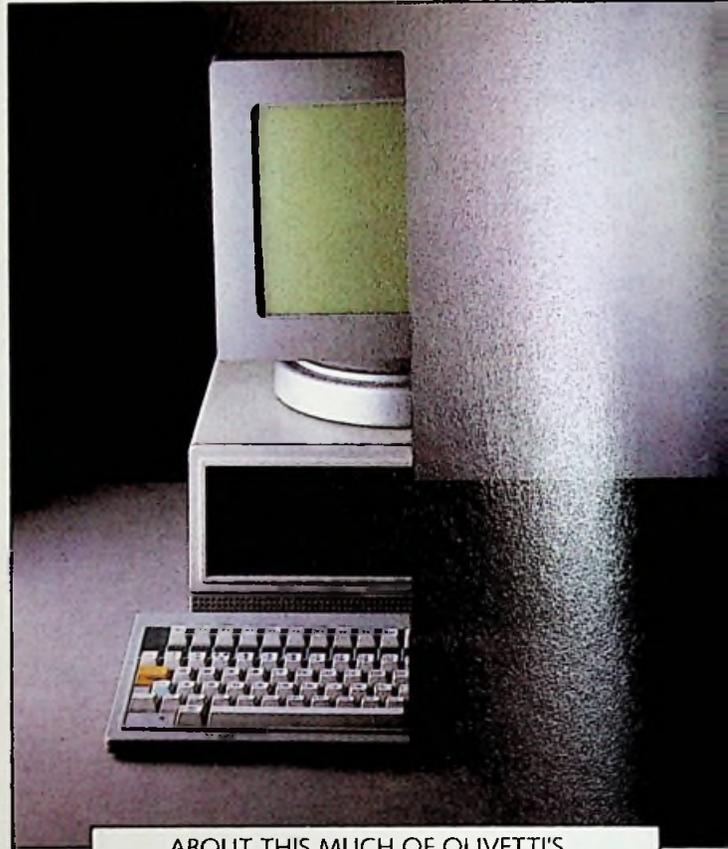
The Ideas Processor

?

HOW MUCH CAN YOU BUY



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£449 for a personal computer does seem an incredibly low price, even by Amstrad's standards.

Especially as the price of an Amstrad PC 1512 includes a 512K memory, keyboard, processor, monochrome monitor, single disc drive, inclusive software and a mouse.

But it's only when you compare it to the competition that you appreciate its true value. Which is what we've done.

We didn't compare our prices with competitors' recommended prices.

We didn't even compare them with average prices in the shops. In fact, we scoured the country to find the lowest discounted prices we could for IBM (PC) compatible machines with as many features as Amstrad's.

Yet even with this generous view of our competitors'

prices, the least expensive came out at very nearly twice the price of ours.

Some were more than three times the Amstrad price.

But the Amstrad PC1512 isn't just cheaper than the competition, in many respects it's better.

For example, even our most basic model gives you superb graphics, with 16 shades of grey. And if you buy a colour monitor, you get 16 colours to play with. (Many other PC's only offer 2).

What's more, the Amstrad will run your software much faster than many standard PC's.

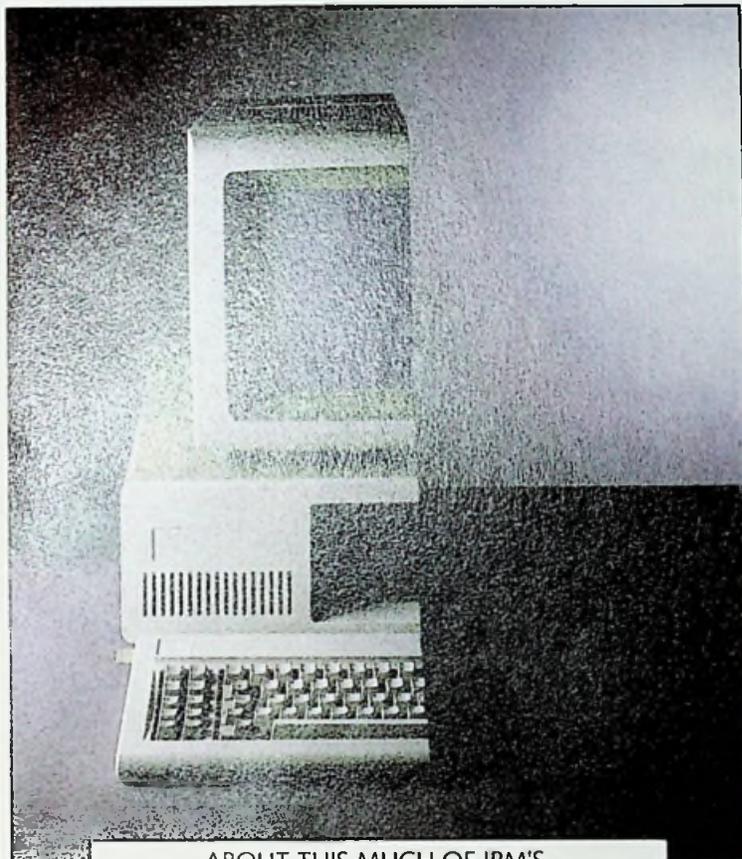
Talking of software, the Amstrad can use all the famous industry standard programs that can run on an IBM PC.

So there are literally thousands of business titles to

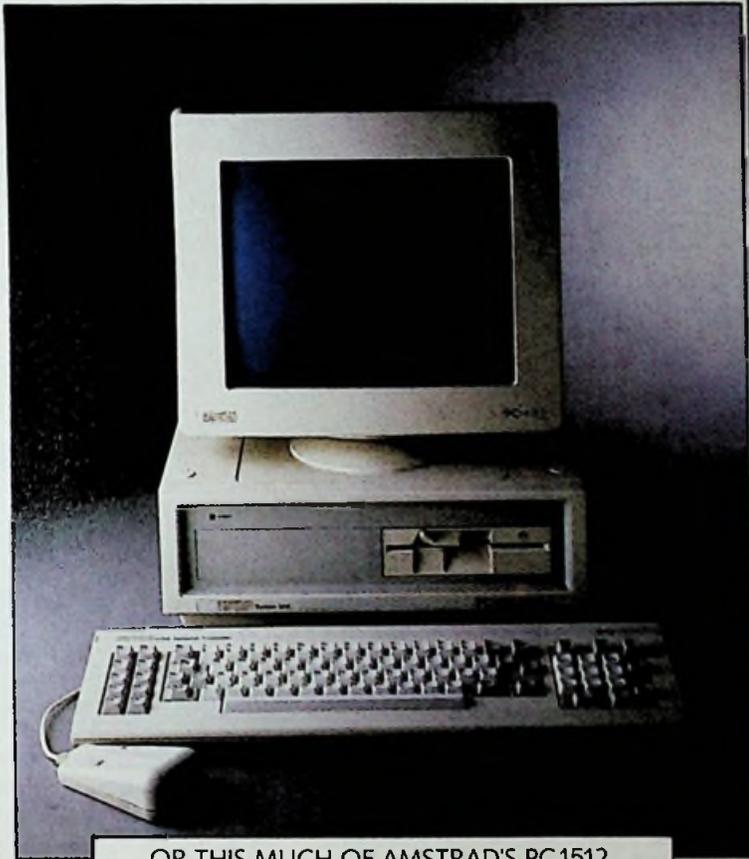
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choose from, including the top selling Lotus range. (Incidentally, it will also run some of the most sophisticated and mind-boggling games ever devised).

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The Amstrad also comes with a mouse as standard, which is not a gimmick, it's actually a great way to get into computing without having to become a world class typist.

You can link your 1512 to modems, network them or upgrade them with printers and hard discs.

And the 1512 comes with all the back-up you might need, including optional on-site maintenance contracts.

There are eight models in the Amstrad 1512 range,

costing from £449 plus VAT to £1,069 plus VAT for a 20 megabyte hard disc version with colour monitor.

Remarkable as it may seem, the models at the top of the range are even better value than the less expensive models.

No wonder the competition's feeling a bit cut up.

Please send more information about the Amstrad PC 1512.



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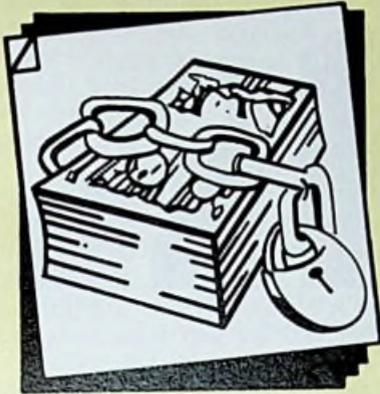
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APC

FINANCE



The story so far . . .

In the first part of this series (*APC* January), I pointed out the extraordinary number of things you could ascertain about a company by using financial analysis.

I explained that a financial ratio could be expressed as "Times", a percentage or in days.

And I demonstrated how to set up a *Format* spreadsheet for a retail, wholesale or manufacturing company (one with an inventory), and provided an *Example* version of the spreadsheet with numbers in it so that you could check that you had entered the formulae correctly.

I also suggested that you obtain the balance sheets and income statements for a company for five years,

plus the accounts receivable and inventory figures for a sixth year.

Last month I provided a glossary of definitions of the items on the spreadsheet to help you make correct entries. I explained that the ratios produced by the spreadsheet should be examined for trends and compared with others in the company's industry.

I also mentioned that reference to a high ratio means higher than the ratio for the industry, or a trend to a higher ratio over the five years' of the company's results (and conversely for a low ratio).

And I spelled out the meanings of the first five ratios, those for analysing liquidity.

Charting your firm's finances

Although with experience you can quickly interpret a company's strengths and weaknesses from the outputted page of ratios, it makes for a better presentation to a board meeting, or from a more quickly understood printed report, if you convert the results to charts.

The numbers provided in the *Example* version of the spreadsheet are the actual results for a company running a small chain of stationery shops. The Liquidity chart (Figure III) was generated from cells A40 through G47 of the spreadsheet.

The numbers are the same as those shown in a table in the last issue: The industry ratios are the median for stationery shops.

To create the Leverage and the Activity (Times) Ratios, add the formulae shown in Figure I to the foot of your *Format* and *Example* spreadsheets. On the latter, if you've entered the formulae correctly, you

should get the results shown in Figure II.

The Leverage and Activity graphs (Figures IV and V) reflect the same results.

Analysing leverage

The next three ratios – all Percent ratios – measure the utilisation of debt by a company.

Debt to Equity: The higher the ratio, the more the company may be extending its debt beyond its ability to repay.

If this ratio increases from year to year, reflecting a higher percentage increase in pounds of net worth, then the annual charges for interest will add to overhead (even if interest rates stay level).

Additionally, if the owners have a decreasing interest in the business and the creditors have an increasing interest, management can find itself spending more time with creditors than

**Part 3 of
Stephen Wells'
course on using
a spreadsheet
for financial
analysis**

LEVERAGE RATIOS (%)						
Debt to Equity	112.84	104.40	153.96	234.29	136.15	59.60
Fixed Assets to Long-Term Debt	328.22	262.81	152.03	111.81	103.32	
Long-Term Debt to Working Cap.	16.73	18.69	44.33	64.04	18.24	
ACTIVITY RATIOS (TIMES)						
Inventory Turnover	4.35	4.88	4.28	4.89	4.91	
Sales to Stock	5.86	6.56	6.44	5.52	6.60	3.90
Plant Turnover	20.26	23.87	18.99	15.41	51.37	
Working Capital Turnover	11.12	11.72	12.80	11.03	9.68	4.90

Figure I: Cells A47 to G58 of the *Format* spreadsheet

CPC PCW PC

with customers.

If the ratio is very low, it may indicate that management is too conservative and is resisting the potential of the business. Ideally the ratio will stay about even from year to year, and in line with the company's industry.

Summary: The Debt to Equity ratio is a comparison between the amount of money invested in a company by all creditors, and the amount invested by the owners or stockholders. It is an indicator of whether the company is carrying too much or too little debt.

Fixed Assets to Long-Term Debt: If this ratio is high or increases from year to year, it indicates a decreasing dependence on long-term debt to finance plant and equipment acquisitions.

It also indicates that less of the company's capital is used for plant and equipment and more is available for current use.

A low or decreasing ratio indicates some loss of protection to long-term creditors. It also shows that more of the company's capital is used for plant and equipment and less is available for working capital.

Summary: This is a useful criterion for a company to use when deciding whether to invest in new plant and equipment. Fixed assets which may appear to be a good investment are no bargain if they tie up needed working capital.

However, a very high ratio would suggest an under-investment in plant and equipment.

Long-term Debt to Working Capital: If this ratio is more than 100 per cent, the company finds that much of its capital is tied up in relatively fixed assets, and management will need to incur even more debt in order to operate.

A low ratio is the more favourable position.

Summary: This is another ratio (Inventory to Working Capital was the first) for which no industry figure is usually collected.

And again this is because it is so closely related to another ratio – in this case Fixed Assets to Net Worth, which is among the Activity Ratios.

When the latter is exactly 100 per cent, the Long-Term Debt to Working Capital ratio will also be 100 per cent.

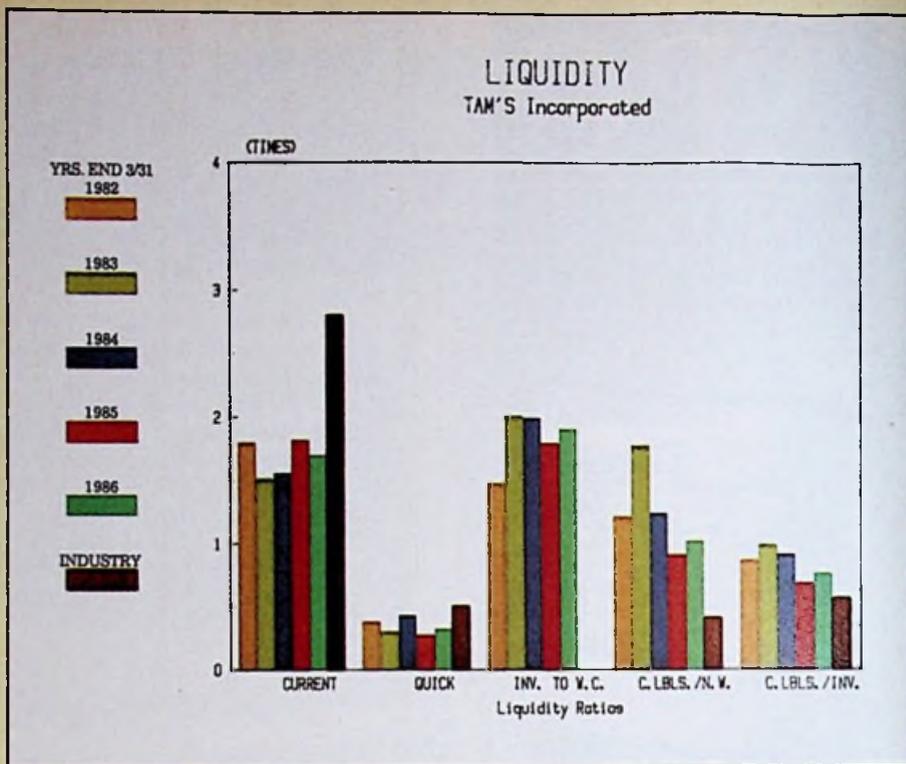


Figure III: Liquidity ratios

However, it is a useful measurement of the amount of long-term debt that the company can comfortably handle.

The activity (times) ratios

Now we get into the day to day activity of the company.

Inventory turnover: This ratio varies widely from one industry to another. A high volume, low margin business such as a supermarket, has to turn over its inventory more often than a low volume, high margin business such as a furniture store.

But a high turnover for a particular industry is usually a sign of good management.

Inadequate inventories may result in higher costs due to buying in smaller quantities, and the possible loss of business if what the customer wants is not on hand.

A low turnover figure (low for the industry that the company is in) is a sign of excessive inventories. These can be an abnormal drain on working capital and that can lead to financial diffi-

culties.

The greater the inventory, the greater the amount of money tied up. Extra space is required, there are extra handling costs and an increased possibility of loss through shrinkage, style changes or other factors.

Summary: Inventory Turnover is the number of times the inventory was replaced during the year. The ratio is useful for spotting understocking, overstocking, obsolescence and the need for merchandising improvement. **Sales to Stock:** A high ratio doesn't necessarily mean that physical turnover is high, but it is a positive sign if this ratio is higher than that of similar businesses.

Nevertheless, no inference should be drawn about the company's financial structure based upon the result of this single ratio. It should be monitored in conjunction with the Inventory to Working Capital ratio.

If the Sales to Stock ratio is declining, or lower than the median for the industry, it can be increased in a number of different ways – some of them more profitable than others.

Speeding up the turnover rate by increasing prices may not be profitable, nor would increasing advertising or other costs to a disadvantageous level. Nor keeping net sales constant and reducing inventory. Nor even increasing the net sales by a greater percentage than a simultaneous increase in inventory.

The most profitable ways of increasing the turnover rate are by maintaining a constant inventory while increasing net sales, or by simultaneously increasing net sales and reducing the inventory.

Summary: Because it is so widely used, the Sales to Stock ratio is useful for comparison with other companies in

	A	B	C	D	E	F	G
47:							
48: LEVERAGE RATIOS (%)							
49: Debt to Equity		D10/D198100	C10/C198100	D10/D198100	E10/E198100	F10/F198100	
50: Fixed Assets to Long-Term Debt		D10/D178100	C10/C178100	D10/D178100	E10/E178100	F10/F178100	
51: Long-Term Debt to Working Cap.		D17/D358100	C17/C358100	D17/D358100	E17/E358100	F17/F358100	
52:							
53: ACTIVITY RATIOS (TIMES)							
54: Inventory Turnover		D27/D37	C27/C37	D27/D37	E27/E37	F27/F37	
55: Sales to Stock		D22/D26	C22/C26	D22/D26	E22/E26	F22/F26	
56: Plant Turnover		D22/D10	C22/C10	D22/D10	E22/E10	F22/F10	
57: Working Capital Turnover		D22/D35	C22/C35	D22/D35	E22/E35	F22/F35	
58:							

Figure II: Cells A47 to G58 of the Example spreadsheet, without border. The Industry ratios (in the last column) are the median for stationery shops.

the same line of business.

However, it is not an accurate measure of the true turnover of inventory (see Inventory Turnover). Generally, an increasing Sales to Stock ratio is desirable, although some ways of achieving it are more profitable than others.

Plant Turnover: If this ratio is increasing it indicates that a company is using its investment in plant and equipment with increasing efficiency. But the plant and equipment may also be reaching their capacity level.

If this ratio has declined over a number of years it suggests that sales have not kept pace with increases in plant and equipment.

Summary: The higher the sales level with existing equipment, the more profitable the company will be. But it is important to recognise the point when plant and equipment is reaching its capacity level.

Working Capital Turnover: A high ratio can indicate that the company is over-trading for its industry. If sales increase dramatically, more working capital will be required. But if the higher turnover rate of working capital can be sustained comfortably, then a low Current Ratio may suffice.

The lower the Working Capital Turnover ratio, the less vulnerability there is to creditors. But low turnover of working capital may indicate that the company is carrying more liquid assets than needed for its volume. A low working capital turnover, however, should be compensated by a higher Current Ratio.

Summary: This ratio shows how many £s of sales the company makes for each £ of working capital.

Working capital is needed for stock, work-in-process inventory, and to carry ensuing receivables after merchandise is sold and until the receivables are collected.

However, if this ratio is lower than is customary for the particular industry,

it indicates an unprofitable use of working capital.

● This covers all the basic "Times" Activity Ratios. Next month, I'll get into the Activity Ratios which are usually expressed as a percentage and those which are usually given in days.

APC

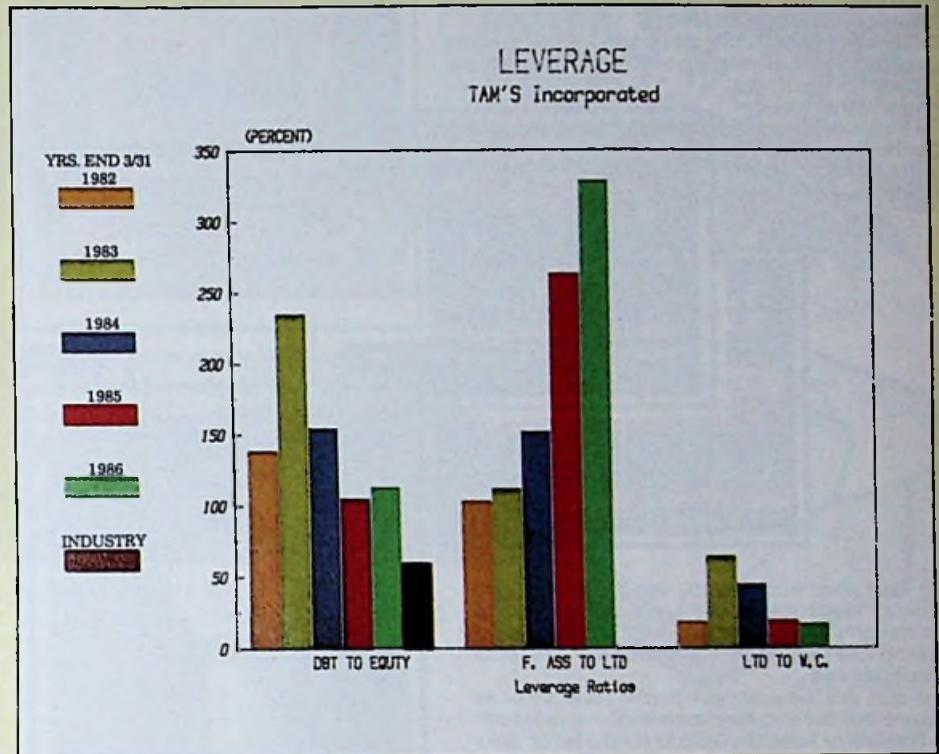


Figure IV: Leverage ratios

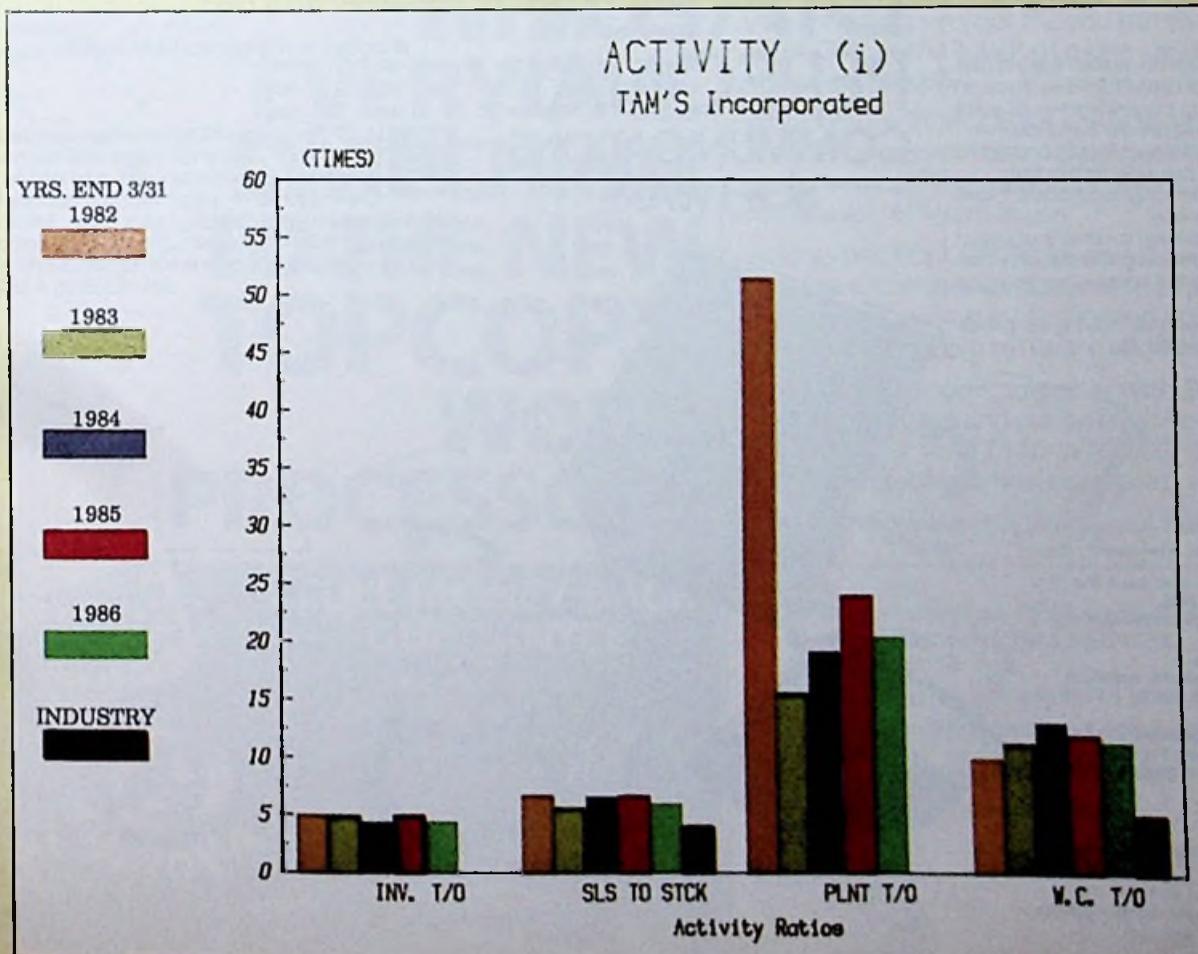
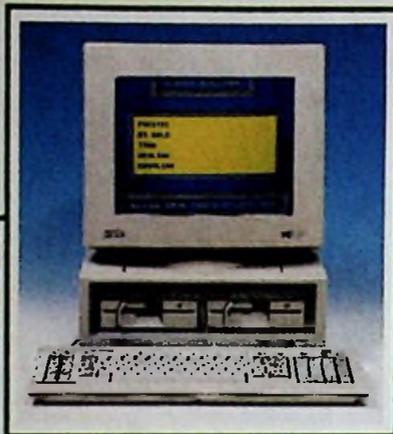
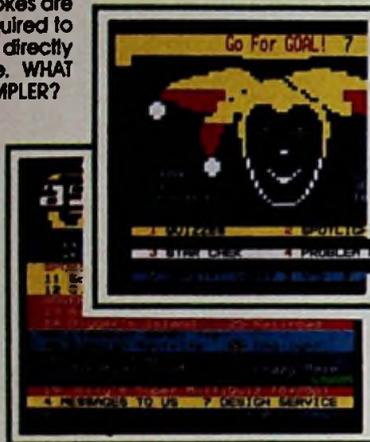


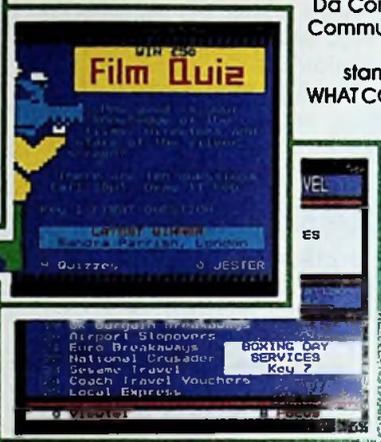
Figure V: Activity ratios

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It is also very economical. Using a Multistream account (available from BT), you can connect to the majority of services in the UK and only local dialling rates will apply. A definite saving on your telephone bill! You can not only access Prestel type services (Viewdata) but also electronic mail services such as Easylink or Telecom Gold to send a letter, telex or other documents to a friend, colleague or company. A whole variety of transactions and purchases will be possible from your armchair. **WHAT COULD BE EASIER?.**

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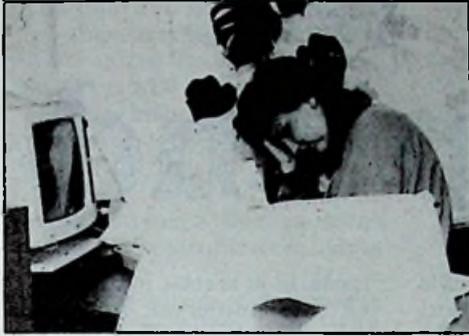
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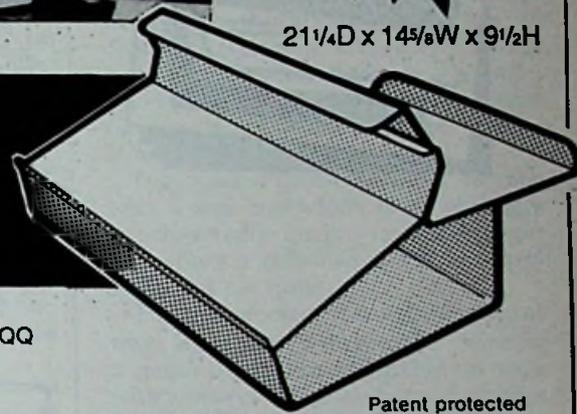
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APC

EDUCATION



Pushed in at the deep end

One of my least favourite nightmares is finding myself with a sadistic ski instructor at the top of the Olympic ski-jump at Garmisch-Partenkirchen.

The instructor is intoning with ill-concealed relish: "Here we are ready for your very first lesson on this nursery slope." Talk about being flung in at the deep end!

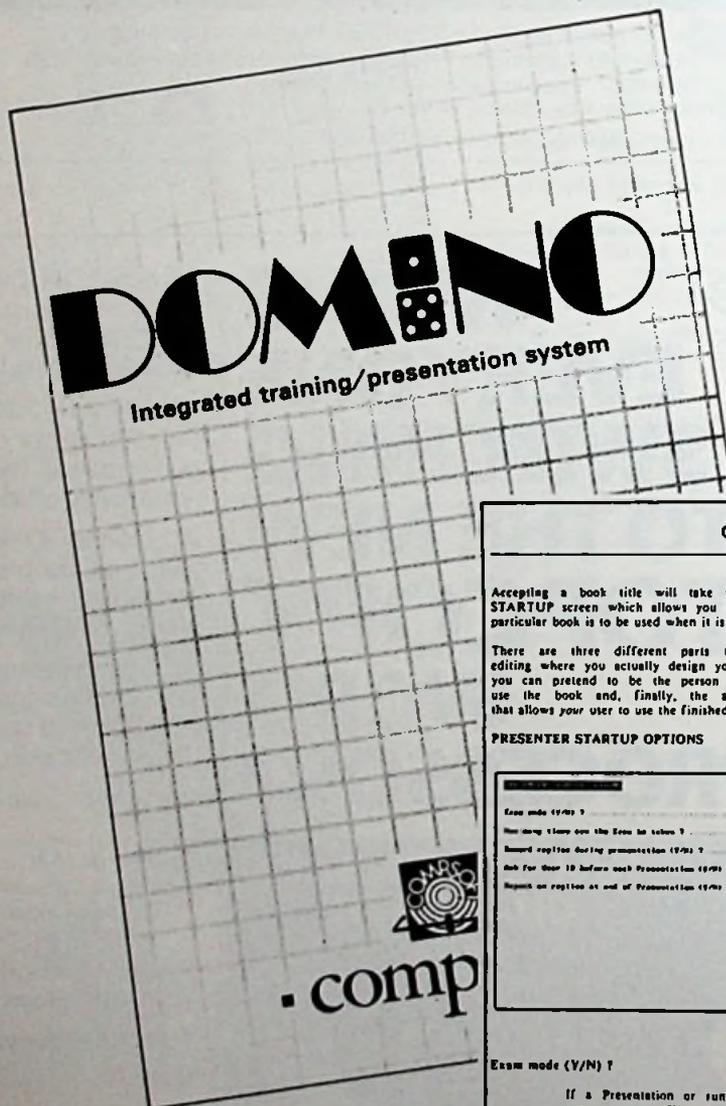
Some packages give me exactly the same kind of vertigo when I'm trying to cope with graphics, lines, fonts, insert

mode, book marks, indexes, replies and all the mini-jargon they accumulate about themselves.

At first blush, Domino (for the PC1512) can transmit that daunting kind of impression. It's a compliment, really, since any worthwhile package demands a certain irreducible amount of time for the beginner to come to terms with it.

All the same, it would be rather nice if the distribution disc had contained a

Rex Last looks at an authoring package for the PC, problems of inexact matching and an old but up-to-date book.



GETTING STARTED

Accepting a book title will take you to the PRESENTER STARTUP screen which allows you to tell DOMINO how this particular book is to be used when it is finished.

There are three different parts to DOMINO. These are: editing where you actually design your book, reviewing where you can pretend to be the person who is actually going to use the book and, finally, the actual presentation system that allows your user to use the finished book.

PRESENTER STARTUP OPTIONS

```
Exam mode (Y/N) ? .....[Y]
Review time over the Exam in volume ? .....[4]
Sound output during presentation (Y/N) ? .....[N]
Ask for user ID before each Presentation (Y/N) ? .....[N]
Repeat on register at end of Presentation (Y/N) ? .....[N]
```

Exam mode (Y/N) ?

If a Presentation or run-time system is to be an exam, answer Yes. A full explanation of what EXAM MODE entails can be found in Chapter 7.

(c)Compton PLC 1986 DOMINO

Chapter 1 Page 9

The choice you have when starting a new Domino book

Amstrad Professional Computing March 1987

CPC PCW PC

couple of demonstration programs or a tutorial guide for the greenhorn.

Domino is a complex package which takes the no-code tutorial or presentational mode authoring program about as far as human ingenuity can stretch it.

In fact it's so bristling with bolt-on goodies that the best recommendation for the first-time user is: Try the simple stuff first, then graduate to graphics, colours, alternative fonts and the rest.

The basic concept of Domino is the "book". Each presentation or exercise (which you write yourself) is an electronic book.

And like old-fashioned books, it breaks down into pages. Each page has a name, and the path between pages can be specified.

When devising a book, you can write replies to questions you pose, with marks allocated and facilities for jumping to a particular page depending upon the response offered.

A word of caution here. Don't be too seduced by this branching feature – it can lead you into all kinds of complex routes within a given book and can also be counter-productive.

My experiences with branching programs is that learners can resent being obliged to take a specific path through a program when something wrong.

And this particularly holds true if the program is obliged to repeat material time and again until they get it right.

So I was impressed by the claim in the manual that "the teaching and learning process can be enhanced by forcing the reader to follow a set route until you are satisfied that he/she has grasped the point".

In Edit Page mode, a whole range of functions is available, though I was irritated by having to hop hither and

yon from screen to "Press ESC for commands" and back again.

The penalty for blundering is a message in red caps which sits on the screen for a few seconds until it is ready to switch itself off.

Incidentally, do resist the temptation to go mad with the colour scheme: I was soon in migraine country with red letters on a black ground with a cyan surround!

You also have at your disposal time limits, fonts and icons, a review facility. And with numeric replies you can specify the degree of precision you allow for an individual response.

When it comes to the graphics, drawing a box can be fiddly – get it wrong, and the error message NO MARKER appears disapprovingly.

But the circle drawing facility is splendid, as are the colour filling commands. And it's very useful to be able to erase, which Domino permits, not just the whole screen but also the last piece of drawing you've done.

As for the manual, it gets two and a half cheers from me for being pretty straightforward. But why bury the information on how to set up user discs in an appendix?

And there should be a law against manuals without indexes to them, especially when a package is as complex and mature as this one.

I have spent some time with Domino and having become more or less familiar with the way it works, I can visualise it as a powerful tool in presentation of material and testing of knowledge in a whole range of different fields.

So a few minor quibbles apart, in my book it's Domi-yes.

Striking a fuzzy match

Whether you're designing your own educational software or building exercise suites from off-the-peg authoring packages, you'll find that the most difficult part of the enterprise is coping with the way users respond to the program.

It's not just a matter of ensuring that where appropriate the program is trained to ignore superfluous spaces, punctuation and the rest, keyed in by the naive user.

It should cope with learners who accidentally hit the Caps or Num Lock keys, or press combinations of keys which normally crash or reload the system.

And it should also be capable of grappling with those rascals who try to obliterate the entire screen by pressing a key and holding it down – or who, when invited to enter their names, type Genghis Khan, Adolf Hitler or Michael Mouse.

The most difficult problem to cope with – and one which most packages faintheartedly duck – is the learner who offers a response which is nearly right, but not quite.

The real problem is how to determine what is or is not "nearly right". Writing a general-purpose algorithm to cope with answers which are almost right is not easy. Something which is just about acceptable in one set of circumstances may be the wrong answer altogether in another.

Say, for example, you set up your nearly right routine to accept one pair of transposed characters in the answer.

That's no crime in "Londno" as the capital of the UK, but "cieling" is about as wrong as you can get in a test of "i before e except after c".

The notion of so-called fuzzy matching – accepting an answer which approximates to the correct response within certain tolerances – can be a dangerous game to play.

I suspect that a general-purpose algorithm for satisfactory fuzzy matching is neither attainable nor desirable, but there are other much simpler ways of skinning this particular cat.

One such approach which I've tried with some success is to indicate to the learner the point at which the match failed by putting an up-arrow under the first non-matching character.

The message "This is where you started to go wrong" is displayed on the screen, together with an invitation to have another attempt at the response.

In my view this is a much more satisfactory kind of interaction than the blunt "Correct" and even blunter "Wrong" type of response in much question-and-answer software.

It allows the learner to have another stab at an answer with some kind of clue as to how near or far he or she is from the expected response.

There are pitfalls, of course: Care has to be taken to cope with a totally wrong response, and also where the learner

THE EDITOR COMMAND

SETTING UP REPLIES (ALL MODES)

From the Main Command Line, select **REPLIES** to display the Replies list

SET UP REPLIES FOR: [TEXT]

REPLY TYPE: [S]ingle character [D]ate number, [0,1,2,3,4] decimals [P]ositional: [C]ursor-keys [M]ouse [L]ight-pen, or [R]olling demo [I]

REPLY TYPE: [T]ext [S]ingle character [D]ate number, [0,1,2,3,4] decimals [P]ositional: [C]ursor-keys [M]ouse [L]ight-pen, or [R]olling demo [I]

Each Replies list allows up to ten possible responses, which will send the reader to ten different pages

DOMINO asks you whether the reply is to be TEXT, a SINGLE CHARACTER, DATE, NUMBERS, POSITIONAL (with or without a Mouse or Light pen) or a ROLLING DEMONSTRATION

REPLY TYPE: [T]ext [S]ingle character [D]ate number, [0,1,2,3,4] decimals [P]ositional: [C]ursor-keys [M]ouse [L]ight-pen, or [R]olling demo [I]

DOMINO will always assume Text as the default option. Select any other option you want to use by typing in one of the following

S, D, 0, 1, 2, 3, 4, C, M, I, or R

© CompSoft PLC 1988 DOMINO Chapter 3 Page 51

Setting up a list of replies to a question – in Domino you're allowed up to 10 different responses, which can send the user to as many different pages

Amstrad Professional Computing Magazine 1987

Product: Domino

Price: £99.95

Supplier: Compsoft, Compsoft Manor, Farncombe Hill, Godalming, Surrey GU7 2AR.

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THE EDITOR COMMAND

TEXT REPLIES (ALL MODES)

Text replies may be up to 40 characters long however, as a long reply makes the reader more prone to spelling or typing errors, it is advisable to keep them as concise as possible

No precision is required with text replies.

Replies appear in the Replies column in upper case, but as case is ignored, it does not matter whether the author or the reader enters them in upper or lower case.

Let's look at an example of a TEXT reply

This is the page the reader sees

DOMINO WITH DOMINO

WELCOME TO THE CAPITAL OF FRANCE

Enter your answer here: []

↑

Chapter 3 Page 54 © CompSoft PLC 1988 DOMINO

A sample Domino question and answer page

has typed in half the correct answer – otherwise the helpful up-arrow will appear in the oddest of places!

More than a trifle

All sorts of strange things turn up in Christmas stockings: Among the nuts, oranges, party poppers and the rest last year, I found in mine a book which had sadly been remaindered in the local bargain bookshop.

Sadly, because it's full of powerful insights into the educational impact of computers on the up-and-coming younger generation and the way in which they influence the learning process.

The author is Sherry Tuckle (I kid you not; cutting-edge computer technology spawns delightful appellations like Winograd, Feigenbaum and Yazdani), and the title is *The Second Self: Computers and the Human Spirit* (Granada Publishing, London 1984).

No – it's not another social survey of the sort that proves that an almost equal number of men and women got married last year.

The book reaches way beyond the much-maligned descriptive sociology which stalks the pages of the quality press. It offers a fascinating and informative account of how computers are affecting the lives, attitudes and

learning patterns of children.

It's the best study I've read on the subject.

It has a particularly interesting section on video games, which like many others I've tended to dismiss as mindless enslavement to joystick and colour display.

They offer, according to Sherry, "a chance to live in a simulated rule-governed world". In that little phrase is encapsulated all the potential for good and ill of the electronic learning machine.

On the plus side, children can become involved with computers (not just at arcade game level) in an active, participatory manner, far beyond the square-eyed passivity of the junior telly addict.

You get far more interaction from a computer than the classroom situation. And there's another aspect of computer-assisted learning which the teacher or instructor should bear in mind: There are many occasions when it is most profitable to place a group of learners round one terminal.

Apart from being economical with equipment, the principal benefit is that the peer group interaction (sorry for the jargon) enables learners to share with others the experience of learning.

Learning dates, foreign verbs, chemical formulae and such like tends to be an isolated and tedious activity,

but the computer can turn it into a lively social encounter.

The negative side, however, is that the computer operates within a clearly-defined set of rules. It's a nice safe place for those who find it difficult to cope with the unpredictability and uncontrollability of real life.

That's why it can be dangerous for youngsters to become so caught up in computers, losing all sense of time and all awareness of reality.

Sherry Tuckle digs deep into issues such as the problem of free will, and into the vexed question of whether the computer can be said to be "alive". Her conclusion is that it possesses aspects of humanity, but only aspects: It "thinks, but doesn't feel".

I'm not convinced myself that we should seek to make the computer go beyond that point.

The trouble with the intelligent fifth-generation machine is that it may well come to acquire characteristics that are all too human – paranoia, depression, anxiety complexes and mental encumbrances that flesh is heir to.

If you come across a copy of Sherry's book, take time out to read it. It's far from dry (if I can put it that way) and sets down valuable markers for all engaged in designing or using educational software.



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- A description so that you can see what each transaction was for, e.g. "New gearbox" or "Box of 10 discs".
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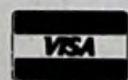
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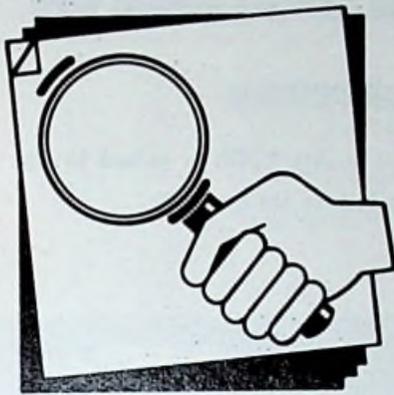
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APC

REVIEW



The curiously named FT=DB could be a precious utility for some PCW owners. Gabriel Jacobs explains why.

PCW

A free-format database for the PCW

Every now and then a new Artificial Intelligence language makes its appearance and its devotees spend much of their programming time proving how much better it is than Prolog at handling unstructured data.

But the fact of the matter, as any honest AI expert will tell you, is that the human race is likely to obliterate itself before it produces a computer language capable of simulating the way our brains retrieve stored information.

We don't know how we do it, and that's why no database query language comes anywhere near our supreme mastery of (at least apparently) disorganised data.

Computer programs which don't rely on a fairly rigid structure of records and fields simply don't work as quickly or as efficiently as those which do.

For rapid access to digitally stored information it looks as if we're stuck with databases which expect it to be neatly pigeon-holed.

Unless, that is, we're willing to accept that we have to do most of the thinking, not only in the planning stages but also while actually interrogating a database. Only then does a free-format system come into its own.

FT=DB (Free Text Data Base - the equals sign is silent) is such a system, specifically written for the PCW.

What FT=DB does

The thinking behind FT=DB is very simple. You produce text files on a word processor such as LocoScript, flagging as many key words or phrases as you wish. You don't need to worry about the length of the files or their structure - they can all be different from one another.

The only limitations are that you must keep them all together on one data disc, and that LocoScript files and those of some other word processors must be in Ascii format (FT=DB can read unstripped WordStar files directly).

FT=DB then scans the files and produces an alphabetical list of the words you have marked, with a note of their location (line number) within a file.

You can add files to the index or delete them from it as often as you like, and only the index itself will be affected: The program only reads files, it never writes to them.

Unusually, therefore, your database consists of textual records which can only be altered outside the controller program. In that way their integrity is always protected.

Having created your list, if you then want to produce an index for (say) a book, you can output it to the printer and instruct the program to generate page numbers corresponding to those in your text. So, in creating an Ascii file from LocoScript you use the Page Image option.

It has to be said that FT=DB can't compete on an equal footing with dedicated indexing programs, which generally provide far more flexible options. But its book indexing facility is simply an added feature.

FT=DB is primarily meant to be used as a creative tool, an add-on to your word processor which allows you to retrieve bits of text - perhaps just rough jottings - without having to remember the filename under which you stored them, where in the file they occur or even if they still occur.

So the program is a kind of ideas processor, but one which does not impose any structural constraints on either the user or the data. In this it differs from other ideas processors, which generally try to organise information into a tree-like structure.

With FT=DB you do all the thinking while the program carries out the purely mechanical work. It's not a breakthrough in AI, but it is a good idea if only because computers are best at routine tasks. What's more important, it works well in practice.

This is best shown by example: You're a freelance journalist and you spend half your working time thinking about what to write. Every now and then an idea comes to mind, not enough for a full-blown article, but something you could eventually include in one.

You write up the idea as a couple of paragraphs on your PCW, marking some key phrases so that searching will be easier when you've forgotten the

idea and even that you wrote it up. You then add the file to your FT=DB index.

A year or so later a magazine editor asks you for a piece on a particular topic. You scan your alphabetised list for likely key phrases, view the parts of the files which contain them by going directly to the appropriate line numbers, and export the relevant paragraphs to your word processor.

If you've been prolific in your jottings, all you need then do is cut and paste, add a few link sentences, tidy the whole thing up, and (if like any good journalist you refuse to use material twice) delete from the index the paragraphs you've used.

In other words, FT=DB is a writer's friend, one of the few that the PCW has generated despite its initial intended market and its enormous success. Whether you're composing your memoirs for posterity or essays for your teacher, it will comfortably complement your word processor.

In fact I have no doubt that to many writers it will be what Trigger was to Roy Rogers – and if you're old enough to know what that means, the chances are you'll find it useful as a memory jogger if nothing else.

How you do it with FT=DB

FT=DB has been carefully designed to make life as easy as possible for the PCW user. Installation consists only of creating a self-booting disc which puts the program files on drive M, and choosing between continuous or single-sheet stationery.

Once that is done you move on to the disc-based tutorial (there's no printed manual) which itself consists of an FT=DB index and eight tutorial files, so you're working with the real thing as you learn. The tutorial is superb – carefully thought out and extremely well written.

Key words or phrases in the text are marked by using curly brackets ({}). They appear in reverse video on the screen when you view a file or the index, and in boldface on the printer.

A phrase can consist of up to 24 consecutive characters, and within it you can mark with a squared bracket either one or two words which are to be added to the alphabetical index. So the phrase "PCW add-ons" could be made to appear under both "PCW" and "add-ons" with the same reference.

Most of the keyboard input apart from filenames (and you can use wildcards when adding files to the index) is done with single keystrokes – creating an index file, adding or deleting text files, searching, jumping to a line number or scrolling through a file, changing the logged drive, importing or exporting files and viewing a disc directory.

The program splits the directory listing into indexed and un-indexed files and ignores any with the extensions .COM, .EMS, .SUB, .BAS or .DEX (the FT=DB system extension), so you see

FT=DB Main Menu

- D - Default drive I.D.
- C - Create index files on disk
- F - File catalogue
- Z - Zap (Delete) textfile from index
- A - Add textfile to index
- S - Search through index
- V - View textfile on screen or printer
- L - List complete index to printer
- T - Transfer files (Import/Export)
- X - eXit to CP/M

Current drive is A

Press the key of your choice V

Display textfile at chosen point

Key S to view on Screen, P to send to Printer - or just RETURN to go back to menu S

Enter the textfile name here - or RETURN to go back to the menu - █

Drive is A:

Figure I: FT=DB main menu with the View a file on Screen options selected

MY LIFE

One of these days I'm going to write the **story of my life**. I read **autobiographies** which frankly are simply boring. My life may be **epic**, **kitchen-sink** and trivial on the outside, but deep down there swirls a **pool** of **memories** which many readers would find fascinating. I certainly

As I look back over 80 years of existence I see trailing behind me **loves** and **hates** which I would be hard pushed to forget even if I **wished** to. They have left a permanent impression on my whole being.

Young people today seem to feel they have a monopoly on **amusement**. They seem to believe that if you're **old** you can't ever have been **young**. I suppose I felt the same way myself when I was just a slip of a girl. I looked at my elders and found it hard to think of them as my **bettors**.

That was before the **first world war**, before that **holocaust** that made us all think differently about our future. That **1914-1918** period was one of **upheaval**, a time when for so many of our **boyfriends**, husbands and **brothers** life hung in the balance. How can I expect those who have never **suffered as I did** even to glimpse the way in which those troubled times changed my entire outlook?

So I shall write my **memoirs**, and hope that those who read them will learn something from my **mistakes** and my **triumphs**.

Bottom line is 35

End of file

Do you want to see more - N/L ? █

Drive is A:

Figure II: A text file with key words and phrases flagged

only what you need to see.

The whole system is thoroughly – and intelligently – error trapped. For instance, when you add a file to the index the program first checks whether it is already there.

If it finds any references to it, it erases them before adding the file because it assumes that those references must now be out of date. So there's no need to delete a file before adding one of the same name and you can't confuse the program by giving it double references.

One final plus point is that FT=DB works at lightning speed. This is surprising since it's written in Basic. It just goes to show the power of Mallard Basic's Jetsam file handling – more programmers should make use of it.

Though the price of FT=DB is all inclusive, and though at least one of its direct competitors costs twice as much, £25 is not cheap these days for a rather amateurishly packaged little PCW utility not even written in machine code.

But who cares what it looks like or how it was written if it does its job well? For many people it will be money very well spent.

Product: FT=DB
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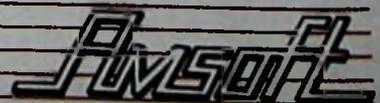
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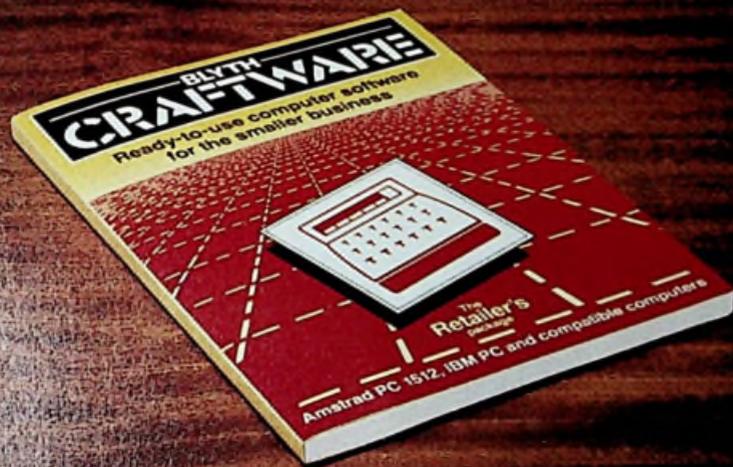
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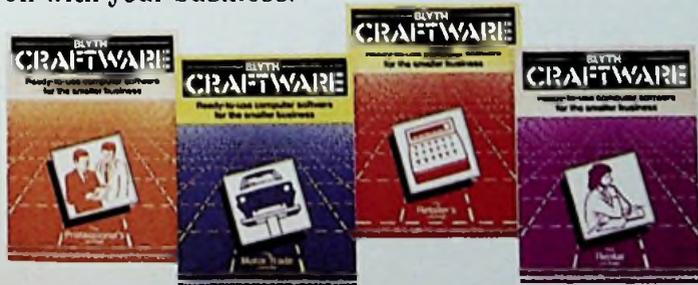
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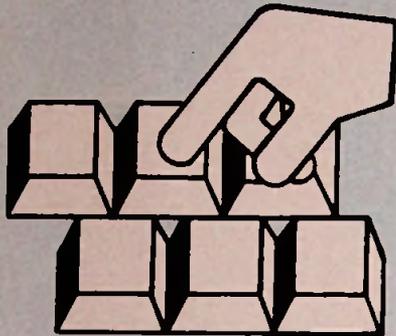
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On target for more loops

I wound up Part 1 last month with this program:

```

◆CLS:LET x=7
◆REPEAT
◆CIRCLE 2500;2500,x*350 FILL
-L WITH 8 COLOUR x
◆LET x=x-1
◆UNTIL x=0
    
```

It makes a good starting point for Part 2, so if you didn't save the program, the first thing you have to do is type in those lines. Run it as a check that it's free of mistakes – it should draw a colourful target on screen.

The program is a simple loop with just one variable, although that is used for three separate jobs. We'll now complicate things by putting this loop inside another, and introducing another variable.

So far we've used only the REPEAT . . . UNTIL loop. There are other sorts of loop in Basic, and this time we'll use a FOR . . . NEXT construction. Actually, these two types of loop work in almost exactly the same way, differing only in the point at which they test the loop counter.

FOR . . . NEXT checks it before performing the contents of the loop, while REPEAT . . . UNTIL checks afterwards.

Move the edit cursor to the top of the program and without deleting anything that is already there enter this as a new first line:

```
for i=2500 to 5500 step 1000
```

Now move to the end of the program and enter this as the last line:

```
next i
```

This new variable is more than a

simple loop counter. It will vary from 2500 to 5500 in steps of 1000. We don't even have to put in a line which adds 1000 each time around the loop – that is all set up in the FOR statement.

This loop will only execute four times, but the main use of variable *i* is not to count up to four. Rather, it provides a nicely spaced set of centre coordinates for a spread of four targets.

So, to use *i* for that purpose, edit the line that begins CIRCLE, removing the first 2500 and substituting the variable *i*. The line should now look like this:

```
◆CIRCLE i;2500,x*350 FILL W
-L WITH 8 COLOUR x
```

Now run the program – remembering to move to the dialogue window first – and you'll find that it doesn't do what it's supposed to.

The CLS instruction which used to be at the beginning of the program is now inside our new loop and so is executed every time the target is drawn – this is a bug!

To see what I really wanted the program to do, delete the CLS and the colon following it from its present location and retype it on a new line at the very top of the program.

Now when you run it you should see an overlapping series of targets disappearing out of the side of the screen.

Clearing the clutter

If you want to see the Results window displayed across the whole screen, click the pointer once on the Results-1 bar to bring it to life then click on the diamond in its upper right corner. The window will be redrawn full-screen.

This can also be achieved with instructions in a program, which is a lot

The second part of Iolo Davidson's tutorial series

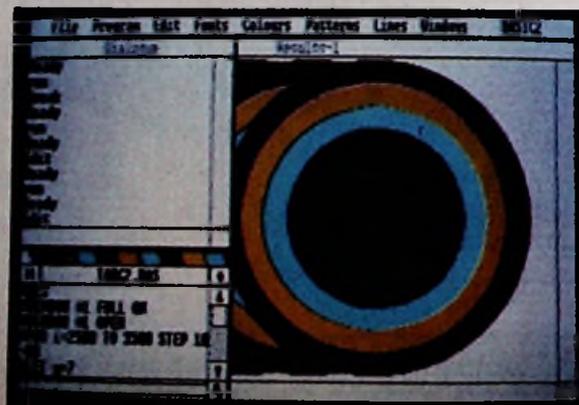


Figure 11: Hit a bullseye every time with the mouse

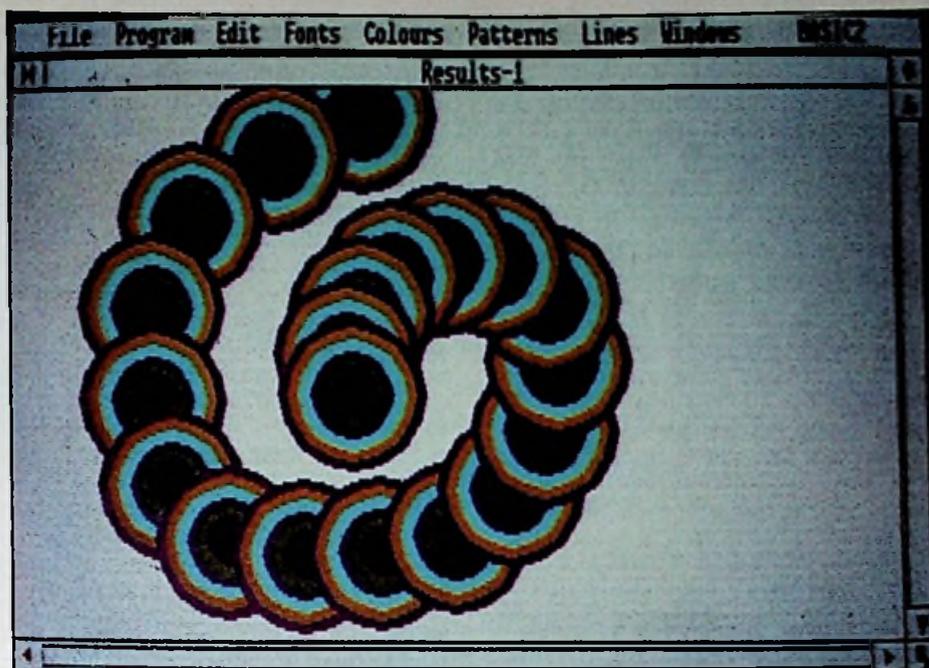


Figure 1: Loops within loops gives you more of the same

more convenient. Enter these two lines between the CLS and the rest of the program:

```
window #1 full on
window #1 open
```

The first of these makes the Results-1 window fill screen size. The second makes it be the window, covering the Edit and Dialogue windows, although the latter reappears itself when the program ends.

Setting the trap

So far we have given the program all its instructions in program lines. It's time that we made the thing respond more readily to our every whim.

We can easily program it to accept user input while the program is running. With most computers this would involve the program prompting you to type in some numbers, but the PC1512 has a mouse and Basic2 knows how to use it.

This is one of the better aspects of Basic2 – you have access to the Gem graphics environment.

First, let's reduce the size of the targets by editing the CIRCLE line again so that the $x*350$ part reads $x*100$.

If you have trouble with the Dialogue and Edit windows disappearing all the time, just remember that the f10 key will bring them back and "toggle" switch between them.

While you're in that line, change the i to a , delete the remaining 2500 and replace it with a b . The line should now read:

```
◆CIRCLE a;b,x*100 FILL WITH
- 8 COLOUR x
```

You'll notice that as we have progressed, this line has lost most of its constants. They have been replaced by variables, which allows us to feed values into the instruction from another part of the program.

The variable x is still being used to get multiple circles, but we're now

going to use a and b to put targets wherever we want on the screen (i is about to be demoted to a mere loop counter again).

First we have to make the program get values for a and b from the mouse. Change the line that begins with FOR to read:

```
◆FOR i=1 TO 20
```

It is not necessary to specify a STEP when we want a simple step of +1, since that is the default – it will always be +1 unless we specify something else. Now enter this series of lines right after the FOR line:

```
repeat
until button(1)=0
a=(xmouse-xplace)*xpixel
b=(ymouse-yplace)*ypixel
```

This sets up yet another loop, which will read the mouse input until the left button is pushed. At that point the loop stops looping and the position of the mouse pointer is read and stored in variables a and b .

Unfortunately, the mouse position is read in pixel units (a pixel is a single point of light on the screen), while the circle command works with a different unit called user coordinates, so we have to convert the one to the other.

This is done by taking the mouse's pixel position, (returned by XMOUSE and YMOUSE), subtracting the difference between the edge of the window and the edge of the screen (using the functions XPLACE and YPLACE, which also come in pixel units), and multiplying by the number of user coordinate units per pixel (given by the XPIXEL and YPIXEL functions).

Gobbledygook and how to use it

XPLACE and YPLACE are offset values that take account of the fact that the edge of the Results-1 window is not always the same as the edge of the

real screen.

Pixel units are real screen coordinates, while user coordinate units are virtual ones, which move around when their windows are moved. If that sounds like gobbledygook, don't worry about it for now, just type the lines accurately and everything will work fine.

The whole program should now look like this:

```
◆CLS
◆WINDOW #1 FULL ON
◆WINDOW #1 OPEN
◆FOR i=1 TO 20
◆REPEAT
◆UNTIL BUTTON(1)=0
◆a=(XMOUSE-XPLACE)*XPIXEL
◆b=(YMOUSE-YPLACE)*YPIXEL
◆LET x=7
◆REPEAT
◆CIRCLE a;b,x*100 FILL WITH
- 8 COLOUR x
◆LET x=x-1
◆UNTIL x=0
◆NEXT i
◆
```

When you run this you'll be presented with a blank window filling most of the screen. Move the mouse from place to place, pressing the left button (it needs a fairly long press), and you can plant 20 targets almost anywhere within the window.

There are three loops operating in the program. See if you can find the top and bottom of each. It's pretty easy to tell which one sets 20 as the number of targets you get to play with.

The bells, the bells . . .

If you want to get a feel for how these loops operate together, here's a little trick you can try.

Place a sound command at various places in the program and you will hear it every time that part of the program executes. In some places in this program it will sound continuously until you press the button, in others it will sound only while the target is being drawn.

There is only one sound command in Basic2, the one which prints the BELL "character". This is the character you get when you press Control+G: It doesn't print anything on the screen, but just sounds a beep.

You can't type it into a program line, so we have to use a different method of entering it, as a character code. This is the line:

```
print chr$(7);
```

Don't forget the semicolon at the end. The bell character doesn't print on the screen, but the PRINT command always ends with a carriage return unless you suppress it with a semicolon. Without the semicolon you'll soon find your targets being scrolled off the screen.

Bringing on the sub

Now there's nothing wrong with this program, really, from the point of view

of structural programming dogma, but it could be improved.

Loops inside loops are OK, but it's easier to see what goes on if you do some separating and labelling. Don't worry - structural purity can be preserved without resorting to line numbers.

First let's delete the last line of the program, the one that reads **NEXT i**. Then retype it right under the **FOR i=1 TO 20** line.

Right under that type **end**, which isolates the remainder of the program - when Basic2 gets to an **END** command it stops, just as if it had come to the last line of a program.

We still want the remainder of the program to do its job, but we're going to split it up and label it, then call it as a couple of subroutines.

The **END** command will stop the execution from inadvertently carrying on into the subroutines when the main loop has finished.

The command that calls a subroutine is **GOSUB**. Between the **FOR** line and the **NEXT** line, enter these two **GOSUBs**:

```
gosub readmouse
gosub paintit
```

Readmouse and *paintit* are the labels I have made up for the subroutines that read the mouse and paint the target.

Using labels that describe the functions of subroutines actually does make a program easier to understand. Basic2 will let you use line numbers as

labels for **GOSUB** and **GOTO**, but labels that convey meaning are much better.

We haven't actually labelled the subroutines themselves yet, so put this new line between **END** and the first **REPEAT**:

```
label readmouse
```

And this one just above **LET x=7**:

```
label paintit
```

That leaves one more job to do. We have to enter **RETURN** instructions at the end of each subroutine, to pass execution back to the main loop when the subroutine is completed.

One goes just above the **LABEL** line you have just entered, and the other goes right at the bottom of the whole program.

The program should now look like this - note that I have also edited in extra blank lines separating the parts of the program to improve clarity:

You can expand the Edit window to

```

◆CLS
◆WINDOW #1 FULL ON
◆WINDOW #1 OPEN
◆
◆FOR i=1 TO 20
◆GOSUB readmouse
◆GOSUB paintit
◆NEXT i
◆END
◆
◆LABEL readmouse
◆REPEAT
◆UNTIL BUTTON(1)=0
◆
◆a=(XMOUSE-XPLACE)*XPPIXEL
◆b=(YMOUSE-YPLACE)*YPPIXEL
◆RETURN
◆
◆LABEL paintit
◆LET x=7
◆REPEAT
◆CIRCLE a;b,x*100 FILL WITH
- 8 COLOUR x
◆LET x=x-1
◆UNTIL x=0
◆RETURN
◆

```

fill the whole screen by clicking on the diamond in its upper right corner.

The program is now a little too big to display all of it at once even in a full screen window, but it is easier to figure out than it was before. This readability becomes more important as your programs grow larger and more complex.

There is another advantage to using subroutines. In this program you have a routine that reads the mouse, which is now available to be called by other parts of the program.

If this program continues to grow, you may want to read the mouse again in another part of the program. All you will have to do is call the name of the subroutine.

Before, when the mouse reading was a loop in a loop, there was no way to do this, and you would have had to type those rather complicated lines again.

● Next month I will explore some more graphic commands



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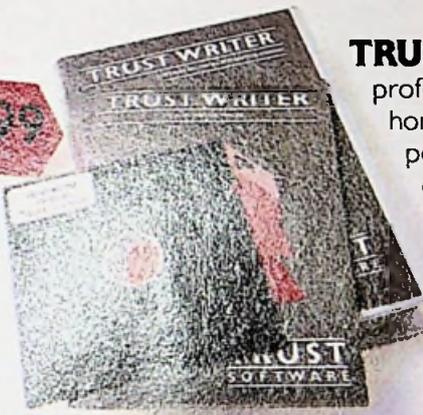
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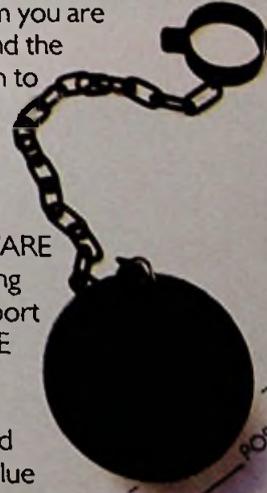
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REVIEW



**Kathy Lang
reviews First
Choice, an
integrated office
management
system for the PC.**

Not a lasting choice?

As an integrated package, First Choice aims to provide basic facilities in data management, word processing, spreadsheet analysis and communications at a very competitive price.

The supplier, Software Publishing, has had its PFS: series packages available for the IBM PC for quite a while, and they have proved popular as individual modules.

First Choice represents the first of a two-stage change of direction by Software Publishing. The second stage is to bring out upgraded versions of the existing packages, renamed the PFS: Professional series, to provide an upward path for First Choice users who need more sophisticated facilities.

First Choice works best with at least 384k of memory and needs at least a double-drive system. The more memory available the better, because both word processor and spreadsheet only work on information in ram.

The package also allows you to make some use of the mouse – and full use of colour. The Amstrad PC is therefore ideal for running it.

An unusual but welcome feature of the new integrated product is the availability of a free hot-line telephone support service with no time limit.

Data management

First Choice provides a limited but easily used set of facilities for handling single "flat" files – you cannot link two files together during processing. Simple retrieval and sorting features are included and columnar reports can be produced.

No limit is specified on record size, but a maximum of 16,000 records may be created on a hard disc; the floppy limit depends of course on record size.

A file format is defined using paint-a-screen techniques to lay out field names. There are no data types as such: Numeric fields are just fields with numbers in them, while dates must be entered as YY/MM/DD for sorting to work correctly.

In reports, however, you can specify that a column is to contain numeric data and produce totals, sub-totals and averages from it. Using this approach, of course, it is impossible to validate data as it is entered.

A format is stored once it has been defined, but can subsequently be modified by adding or removing fields and by reorganising the screen display. The format can also be copied, so you can create a record format by editing an existing design.

No indexing is used – to select a record for editing you use the module's

retrieval features. This means that while you can select a subset of records for editing, you cannot browse through a file in a particular order.

The First Choice file manager is controlled through pull-down menus, together with editing keys as appropriate. A Clipboard feature can be used to enter common information.

For example, if every record entered on a particular day must contain the current date, you could copy that date from the first record into the Clipboard and then paste it into each subsequent record.

There are no facilities for making repeated changes automatically, for recording frequently used sequences of keystrokes or for carrying out more complex processes using a command language approach.

Once data is entered, it can be retrieved selectively for display or printing. And selection criteria are quite flexible within a field.

You can choose records containing a set of characters within a starting or ending a field, as well as the conventional relational operators such as less than and greater than, and any condition can be negative.

However, you can have only one condition attached to each field and all conditions must be met before records are chosen, which limits the scope for setting up complex combinations of criteria.

When setting up a report, you can ask for up to 20 fields to be displayed in a columnar format. However, apart from specifying the order in which columns are to appear across the page, you have no control over layout.

Records are usually sorted in order by the first field chosen for the report – you cannot specify more than one sort field.

You can, however, request sub-totals and sub-averages when that field changes value, as well as totals and averages. You can also carry out calculations, and print the results.

Once created, a report format may be stored for future use.

Summary: The data manager is quite adequate for simple applications, such as handling name and address lists, but the absence of many desirable features puts it in the cheap and cheerful rather than the powerful and flexible category.

Word processor

Cheap and cheerful is a phrase that can also be applied to the word processor module.

Since text is stored in memory your

documents can only be of limited length, though you can chain files together when printing. Beyond the spelling checker there are no special extras.

First Choice lets you define your own margins and tabs but these apply to a whole document – you cannot vary margins within a document.

Text can be entered, inserted and deleted. Editing uses the cursor key pad, together with options from the drop-down menus.

Once you have got used to the package some of the editing features can be invoked directly from the keyboard, using Alt+character keys.

Blocks of text can be copied or moved within the word processor via the Clipboard, and the Search and Replace facilities allow you to carry out tasks such as changing all the occurrences of a word. But there are no column handling features other than tabs.

A document is automatically split into pages, using the page length defined for it. A page break can also be forced – but is then activated only at print time; during editing “standard” page breaks are shown on the screen!

As there is no automatic control over widows and orphans, it could take several minutes to get the page breaks right in a document of more than 100 pages.

Words and phrases may be embedded or underlined and characters may be subscripted or superscripted. If the printer supports it, you can print complete documents in condensed mode or NLQ.

Other special attributes, such as double width or alternative fonts, can be selected by embedding printer codes in the text. Line spacing is restricted to single or double.

Using the word processor you can set up form letters and fill them with information from records stored with the First Choice data manager.

The process is very simple – just include the field names in the letter, bracketed with asterisks.

The name of the file containing the data is specified when you print the

form letter and you are then given the opportunity to specify which records are to be selected for inclusion, using the same process as that in the data management module.

Summary: For basic word processing, First Choice provides an adequate range of facilities.

Certainly, people who need to do little more than type memos, letters and perhaps short reports should find the package easy to use and sufficiently powerful for their needs.

But there is no way a secretary requiring professional word processing features would find the layout facilities adequate and the editing facilities are not really powerful enough for wordsmiths who create text on the screen.

Spreadsheet

Of the four modules, the spreadsheet probably takes you farthest down the facilities road.

As with most spreadsheet packages (though not with all integrated package modules), your sheet must fit into memory.

The First Choice manual suggests that while the exact size available depends on the formats and formulae in

use, the theoretical maximum size is 1024 rows and 768 columns for machines with 640k memory.

The program also includes a “% Full” message, to show you how much space you have used.

Data can be entered directly into cells or copied via the Clipboard; formulae can be copied in this way too. Recalculation can be automatic or manual.

Cells, rows, columns or blocks can be defined and named, and formulae can be replicated so that they are applied to a group of cells or copied across a row or column.

A reasonable range of mathematical and financial functions is provided; not, of course, as extensive a capability as with a specialist product such as 1-2-3 or Supercalc, but enough for basic needs.

You can also use a Lookup facility for coding values and a conditional command to control the entry of data values.

There are no facilities for linking spreadsheets together.

Summary: The First Choice spreadsheet is probably the most powerful module, relative to special purpose programs.

It should be adequate for most simple

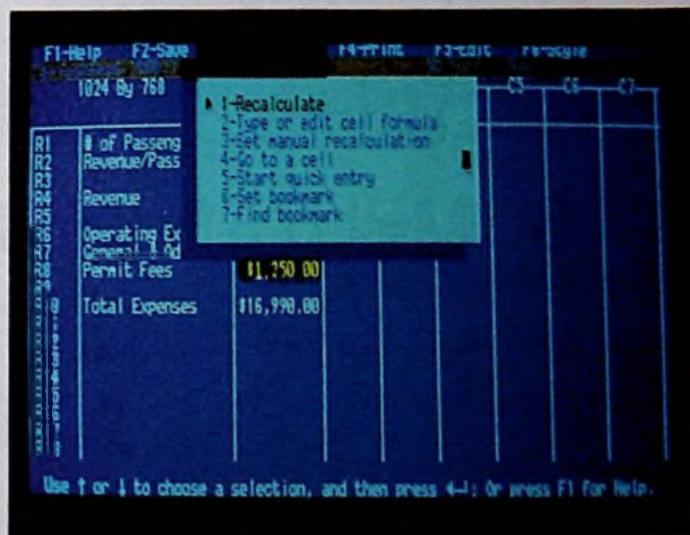


Figure II: Spreadsheet pull-down menus

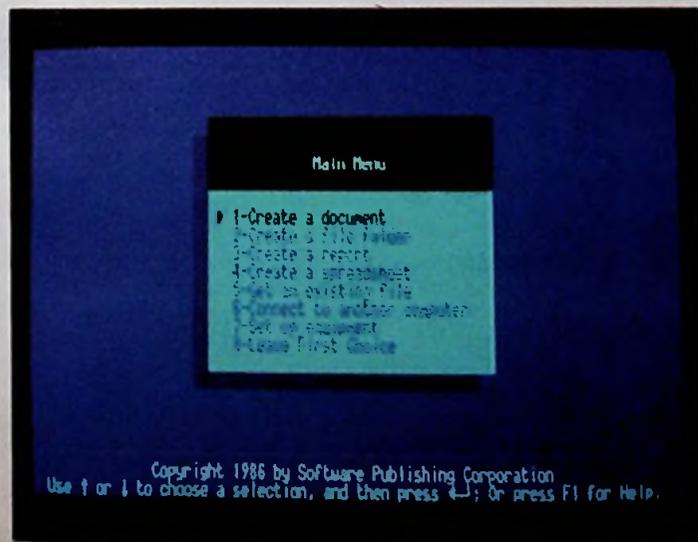


Figure I: The First Choice main menu

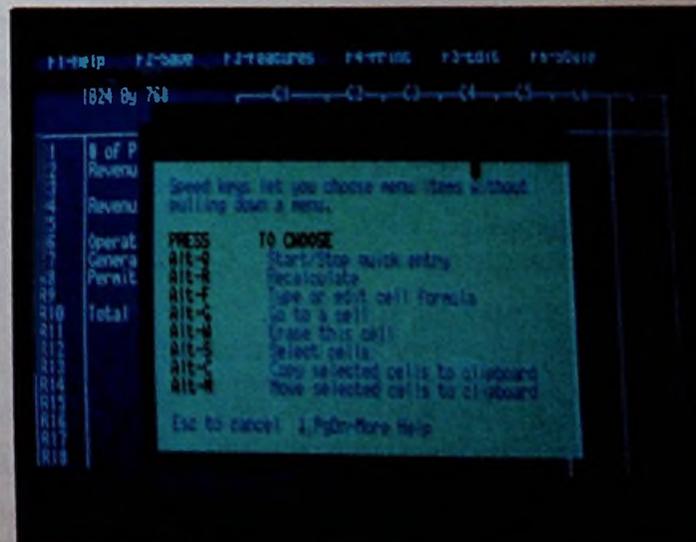


Figure III: The spreadsheet has a useful help menu.

forecasting applications, although the range of functions is not nearly as wide as you would find in a specialist package.

The complete absence of graphics facilities is a real disadvantage – although you could complement First Choice with a simple graphing program to get round this problem.

Communications

First Choice communications are as basic as the rest of the package. Simple dial-up to electronic mail is straightforward enough.

The facilities include autodial if your modem will handle it – anything Hayes compatible should work. But as with most US comms packages, there are no mixed speed facilities.

So unless you have a speed-buffered modem, you could not use it to communicate with, for example, Prestel.

First Choice as an integrated package

While each module is used in a very similar way, the integration of information is not as intimate as it would appear.

Data can be transferred directly from the file manager to the word processor for merging into a form letter. Apart from that, however, there are only two

other ways of passing information between modules.

Small amounts may be moved via the Clipboard – for example, about 90 cells may be cut from a spreadsheet for merging into a document in the word processor.

The process of moving around between modules while copying information to and from the Clipboard is aided by the use of “bookmarks”, which allow you to return to a specified place in an open document, file or spreadsheet.

Copying larger amounts of data requires transfer via a file: A spreadsheet or report may be nominally printed to a file and that file merged with the current document in the word processor.

But there does not seem to be a way to get data between the file manager and the spreadsheet; presumably this is a side effect of not being able to define a field as being inherently numeric.

On-screen help throughout First Choice is good. The menus are clear and simple and it is a wise move to allow people to choose options using a mouse if they wish.

But having taken that approach, I found it rather off-putting not to be able to use the mouse to select material to be copied to the Clipboard.

And I do like to be able to choose my own colours – not that the First Choice selections are too garish.

The documentation is excellent:

Clear, well laid-out, with a good quick introduction using sample files.

Illustrations and a second ink colour are used just enough to make it easy to read and understand, without being too gee-whiz. How nice it is to be able to praise a manual!

But this just emphasises the trade-off between ease of use and power. Without detracting from the excellence of the manual, it is much easier to describe simple facilities in a comprehensible way than to provide clear and simple documentation for a large and powerful package.

First Choice is a good basic package. It provides a reasonable subset of facilities and is very easy to use.

But none of the modules is sufficiently powerful to rival specialist packages in its area and many people will grow out of First Choice quite quickly.

That said, casual users should find it much easier to use than more powerful products and others will find that it gives them sufficient confidence to go on to use the more powerful products later.

Product: First Choice
Price: £149
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A Comparison of Amstrad Word Processors

Benchmark timings

All tests were carried out on a standard 1817 word document. Tests 7 to 10 were carried out on a standard 262 word paragraph. All times are in seconds.

	Protext	Loco- script	Tasword 8000	Newword	Pocket Wordstar DeJulle
Version:	2.00	1.20	1.00	2.17	3.05
Computer:	PCW8256	PCW8256	PCW8256	PCW8256	PCW8256
1. Load document	6	12	8	18	10
2. Save document	7	84	19	13	11
3. Merge document to middle of text	5	269	11	21	11
4. Move cursor from start to end	0.5	34	6	3	4
5. Move cursor from end to start	0.1	15	3	4	3
6. Replace 'the' with 'THE' 208 times	5	128	297	73	208
7. Format paragraph	1	10	12	6	6
8. Move paragraph to start	0.2	42	13	9	9
9. Move paragraph to end	1	80	13	9	4
10. Delete paragraph	0.3	19	3	5	4

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Protext is not even finished, so to be fair we should also show a summary of the main features.

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Feature comparison

FEATURES	Protex	Loco-script	Tasword 8000	Newword	Pocket Wordstar Deluxe
What you see is what you get	y	y	y	y	y
Works with any printer	y	-	y	y	y
Unlimited file size	y	y	-	y	y
Two file editing	y	-	-	-	-
Auto re-format	y	y	y	-	-
Layout commands stored in text	y	y	-	y	y
Spelling checker	y	-	-	y	y
Spell check from within WP	y	-	-	-	y
Find/anagram options	y	-	-	y	-
Background printing	y	y	-	-	y
Insert or overtyp	y	-	y	y	y
Delete line command	y	-	y	y	y
On screen help	y	y	y	y	y
Dynamic screen update	y	y	-	-	-
Headers and footers	y	y	y	y	y
- different even and odd	y	y	-	y	y
Soft hyphens	y	y	-	y	y
Soft spaces/returns	y	y	-	y	y
Non-break space	y	y	-	y	y
Decorative	y	y	y	y	y
Format whole document	y	-	-	-	-
Page break in document	y	y	y	y	y
Page break in header	y	y	y	y	y
Column printing	y	-	-	y	-
Column printing	y	-	-	y	-
Multiple windows	-	y	-	-	-
User defined	y	-	-	y	-
Use of	-	-	y	-	-
Save	y	-	-	y	y
Copy	-	-	-	-	-
Print multiple copies	y	-	y	y	y
Print selected pages	y	y	-	y	y
Print block	y	-	y	-	-
Print to screen	y	-	-	y	y
Typewriter mode	y	y	-	-	-
Change printer at any time	y	-	-	y	y
Embedded printer codes	y	y	y	y	y
Print translated characters	y	-	y	-	-
Turn off printer code display	y	y	-	y	y
Display returns/tabs	y	y	-	-	-

FEATURES
On screen
Built in
Separate
Catalogu
Delete fil
Rename
Copy file
Format d
Type dis
Auto file
Find/rep
- select
- ignore
- search
- search
- find n
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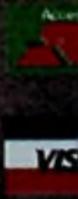
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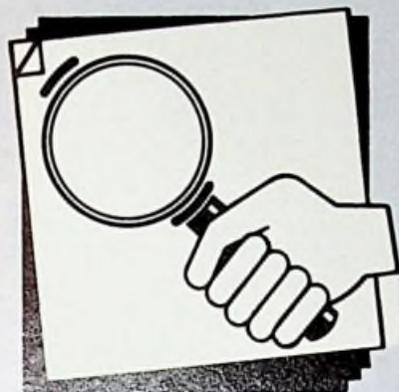
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APC3

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REVIEW



Stoneless dates

For busy people a well organised diary is a must. Meetings, notes, references, dates, holidays and so on all have to be juggled to make the best possible use of time.

This often results in a diary containing a mass of illegible scribble and incoherent messages. With Calendar Creator, however, you can make your Amstrad PC print a neat and tidy diary whenever it's needed.

Simple ideas are often the best and it's a simple one that lies behind Calendar Creator. The program creates a calendar for whichever year or part of a year you want and overlays on to it details of your own special dates.

Using one overlay file, for example, you could print the calendar with holiday dates while with another you might produce the same calendar with dates for special meetings. And by combining the two you can create a third calendar with both holidays and meetings.

Specific months can be enlarged, with the events printed inside boxes under the days. Or you could print single weeks instead — like a weekly diary. With both these options, the program also prints small calendars of the previous and the following month.

There's a comprehensive Help facil-

ity available, on top of which the instruction manual can be called up at will — it's stored on the distribution disc. This is a sensible way of doing things, particularly for people using the program in a busy environment where (despite the idea of a paperless office) hard-copy manuals tend to get buried under piles of paper.

It's important to run Calendar Creator from the batch file supplied, since this sets up various parameters and relationships between dates and days. When the main menu does appear, it offers two categories of options: Creating and maintaining the various overlay files, and printing the calendar.

Creating an overlay is quite simple. You select the relevant option from the main menu and you can then enter the appropriate date and its information, say "December 25 1987 Remember it's Christmas Day". A lot of this can also be done through prompts for the month, day and year, so you're just left with adding the text.

A wildcard facility lets you add recurring information without having to enter it each time. For instance, instead of entering "December 25 Remember it's Christmas Day" for each year between now and 2000, simply entering the wildcard character (an

This Calendar Creator might help organise your life better than the diary you received for Christmas. Dave Osborne evaluates it.

Holidays (Sample)	
1986	
JAN 1 WED	* New Year's
FEB 12 WED	Ash Wednesday
FEB 14 FRI	* Valentine's
MAR 17 MON	* St. Patrick's
MAR 28 FRI	Good Friday
MAR 30 SUN	Easter
APR 24 THU	Passover
MAY 1 THU	* May Day
MAY 11 SUN	* Mother's Day
MAY 30 FRI	* Memorial Day
JUN 15 SUN	* Father's Day
JUL 4 FRI	* American Ind Day
OCT 4 SAT	Rosh Hashanah
OCT 12 SUN	* Columbus Day
OCT 13 MON	Yom Kippur
OCT 31 FRI	* Halloween
NOV 27 THU	* Thanksgiving (America)
DEC 25 THU	* Christmas

EDIT FLOATING EVENT	
Number	2nd
Day	SUN
Month	5 (May)
Year	****
Event	Mother's Day
Use + - to cycle through choices.	
Use asterisks as "wild cards" to designate recurring events:	
Mother's Day: 2nd SUN 5/****	
<input type="checkbox"/> ESC	Quit
<input type="checkbox"/> F10	Accept

<input type="checkbox"/> Help	<input type="checkbox"/> Instructions	<input type="checkbox"/> Display Calendar
-------------------------------	---------------------------------------	---

Figure 1: Editing an overlay file

asterisk) when the year is prompted will do this for you. As well as years, this facility is available for months and days. (See Figure II).

Month	Day	Year	The information is added to
10	4	*	4th October every year
*	4	1987	4th of every month in 1987
11	*	1987	every day in November 1987
*	*	1987	every day in 1987

Figure II:
Use of wild cards

But Calendar Creator has another powerful feature. Meetings, for example, don't always take place on the same date every month. Often they're likely to be the first Monday or the third Thursday of the month, or whatever. Calendar Creator accommodates this with a floating event facility, which is just as easy, and as prompted, as the wildcard - which also can be included. (See Figure III).

Month	Day	Year	The information is added to:
2	Sun	5	* second Sunday of May each year
1	Mon	*	1987 first Monday of every month in 1987
*	Sat	10	1987 every Saturday in October 1987

Figure III:
Floating Event facility

During all this activity you can also pop up a monthly calendar and scan through the years to remind yourself

when events might be occurring. Flicking through the years in this way is a strange experience: You feel you're moving through the fourth dimension!

Having created one or more overlays, any or all of them can be added to the calendar when it's printed out.

Selecting the Print Calendar option from the main menu presents a series of nicely arranged questions about the calendar type to be printed (yearly, monthly or weekly format), your printer and which overlays you want to add. The final hard copy is then printed - all neat and tidy.

But here we meet one of the few drawbacks of the package - it's slow to finish printing. To create a monthly-

format output, for instance, takes four minutes.

The rushed business man or woman, or equally busy secretary, may not want to wait that long before getting the hard copy. In the abstract, four minutes a month isn't a great deal to take out of a life - in practice waiting for slow printouts can seem like an eternity.

Other niggles? Well, two minor ones. First there appears to be no way of highlighting entries. A meeting with the Managing Director on December 25 is probably more important to the busy executive than the fact that it's Christmas Day.

In a normal diary, this meeting might be written in large red letters, or indicated like a three-line whip. But Calendar Creator prints all events in the same format, making it difficult to distinguish the wheat from the chaff with a quick scan.

Secondly, although the program lets you add wildcards or use floating events there's no facility for grouping dates. A holiday, for example, may extend over three days, and Calendar Creator would expect each of these days to be entered separately. The human diary-maker would probably use short-cuts to indicate grouped events of this sort.

These criticisms aside, Calendar Creator is a well produced and thoughtful utility which should enhance any computer printed output and, by extension, its usage.

PRINT CALENDAR

Press **F2** to select calendar style.

Annual

Year: 1986

Number of years: 1

Monthly

Month: 12 (December)

Year: 1986

Number of months: 1

Weekly

Month: 12 (December)

Day: 9

Year: 1986

Number of weeks: 1

Printer selection: 2

1 IBM Graphics	4 Toshiba	7 IDS Prism
2 Epson	5 NEC 8023	8 Epson LQ1500
3 Okidata	6 C. Itoh Prowriter	

Print to: LPT1: Pause between pages (Y/N): N

Number of copies: 1 Standard or wide paper (S/W): S

Help
 Instructions
 Esc Main Menu
 F10 Begin Printing

Product: Calendar Creator
 Price: £39.95
 Supplier: Softsel, Softsel House,
 Syon Gate Way, Great West Road,
 Brentford, Middlesex
 Tel: 01-568-8866

Figure IV: A comprehensive set of print options

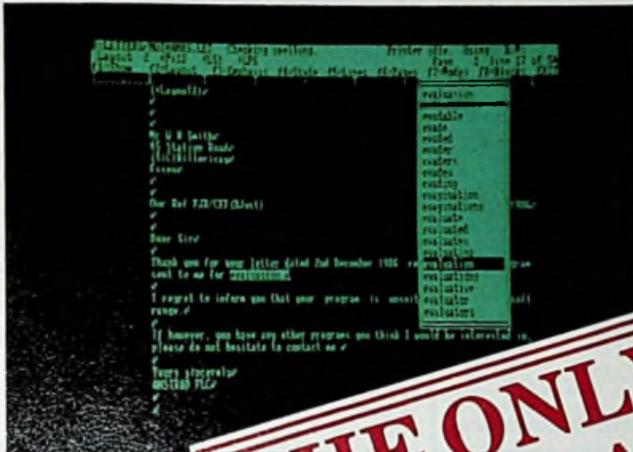


Figure V: Various calendar formats can be chosen

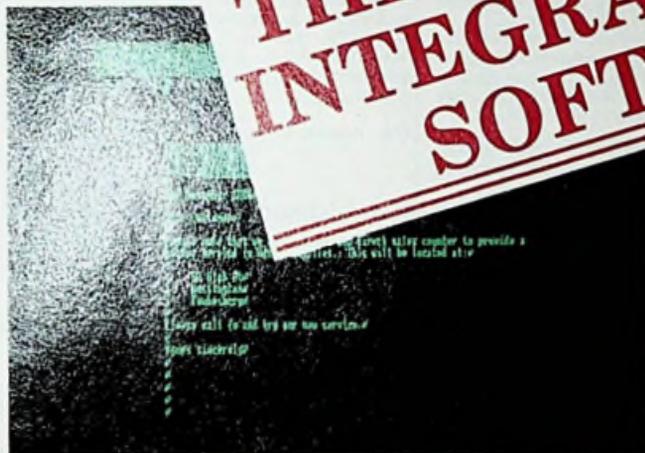
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APC/3

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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!

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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.

Ref	Name	Model	Specification	
CM01	System	7285	160Kps 5M5L2 Wheel	
CM02	System	7285	160Kps 5M5L2 13000	
CM03	System	8240	160Kps 5M5L2	
CM04	System	L280	160Kps 5M5L2 Wheel	
CM05	System	L280	160Kps 5M5L2 Wheel	
CM06	System	L280	160Kps 5M5L2 Wheel	
CM07	System	L280	160Kps 5M5L2 Wheel	
CM08	System	8240	160Kps 5M5L2 Wheel	
CM09	System	8240	160Kps 5M5L2 Wheel	
CM10	Job	5210	160Kps 5M5L2 Wheel	
CM11	Job	5210	160Kps 5M5L2 Wheel	
CM12	Job	5210	160Kps 5M5L2 Wheel	
CM13	Job	5210	160Kps 5M5L2 Wheel	
CM14	Job	5210	160Kps 5M5L2 Wheel	
CM15	Job	5210	160Kps 5M5L2 Wheel	
CM16	Job	5210	160Kps 5M5L2 Wheel	
CM17	System	8240	160Kps 5M5L2 Wheel	£1,795
CM18	System	8240	160Kps 5M5L2 Wheel	£2,390
CM19	System	8240	160Kps 5M5L2 Wheel	£1,990
CM20	System	8240	160Kps 5M5L2 Wheel	£2,450
CM21	System	8240	160Kps 5M5L2 Wheel	£245

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

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 Telephone: 0495 654321
 Reference: MCL
 Date of last order: 14 Aug 85
 Value to date: £21,455.00

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 Essex CH41 5JG

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 delivery time when ordering close to Christmas.
 Ask for Martin for urgent attention.

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.

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.

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APC

REVIEW



So let's get organised...

*Question: How complete is complete?
Answer: It depends on what you set out to do.*

PlanIt calls itself the complete personal organiser. If this conjures up images of throwing out the Filofax and making a giant step towards the paperless office, I'm afraid the reality is somewhat short of the fantasy.

But at £24.95 there is a lot on offer and, if it's compatible with how you like to look after your affairs, it could be a good buy.

It consists of four main programs – a personal accounts package, a card index, a financial diary/calendar, and a loan calculator.

Each is useful in its own way and provides a helpful step towards the goal we all (at least secretly) aspire to, that of complete personal organisation. Whether the program actually provides *complete* organisation is, predictably, a moot point.

Selection of the modules and their facilities is fully menu-based using the cursor keys. As the manual points out, this means there is no need to learn complicated command sequences to get the program running, and is symptomatic of the program's easy approach to life.

Personal Accounts

Selecting the personal accounts module provides a host of options to keep track of your expenditure, bank account movements and credit card outpourings. Indeed, the whole module provides a powerful analysis of individual financial transactions.

The first option available is to record and analyse expenditure within various categories: Mortgage, electricity, gas, and so on.

Up to 26 separate accounts can be dealt with (not 24 as the manual modestly states). Amounts paid and how they were paid (by cash, cheque or credit card – and which card) are requested, so that the corresponding bank or credit card account will be automatically debited.

Having entered the information, it can be viewed in a number of ways – within expenditure sub-headings, as a list of all transactions within the month, or as a cumulative income and expenditure list covering the period from which you started to use the system.

The same sort of credit and debit information can be separately added to the bank account module. Within this, you can show your credit card activity, standing orders, charges, cash dispenser use and so on. Similarly, the credit

card module gives you the power of record over different aspects – balances, limits, use and the like.

But although the module provides a very useful personal accounting system, I found there are one or two problems. First the data files can only run for one calendar month at a time. If, like me, you receive bank statements on any date *but* the calendar month end, it means the computer accounts will not be exactly matched to the bank record.

Another bugging point is that although it is possible to monitor more than one cheque account, the analysis is completely separate. So paying bills for one expenditure category from two accounts, for instance, means that the analysis for that expenditure ends up by being divided between two reports.

Nevertheless, with its ability to save and load files, and provide an update summary for the end of the month, I found the personal accounts part of PlanIt to be a useful and versatile little package. It is easy to use, the response is quick, and the reports are clear. You can't ask for that much more.

Card Index

This is a nice little utility – very suitable for setting up something like an address book. On an 8256 up to 600 records can be stored on drive A, while those lucky enough to own an 8512 can store up to 2000 names and addresses on their drive B (CPC owners are limited to what can be held in memory at any one time).

The program provides room for seven fields within each record. Although it gives the field names (name, four address lines, telephone number and comments), it allows you to rename them to suit your own requirements. Up to 40 characters are allowed in each field.

One very useful facility when entering data is the ability to copy the information from the equivalent field of the last record displayed to that of the record currently on the screen. It is done with a single keystroke.

The search facility provided is surprisingly powerful, being able to match on parts of fields. It is a pity that the sort can only run on one field at a time, however, since this makes repeated sorts necessary to achieve a truly ordered list.

The report and label options are simple to use too, although only one-across label stationery can be accommodated. Nevertheless, I was particularly pleased to find the option to print multiple labels, since loading

Want to use your PCW or 6128 to organise your life? Sheila Napier reviews a package which could help.

CPC PCW

labels in the printer can be a fiddly business.

Financial Diary

This module allows you to set up a diary system to record meetings, dates, transactions and so on. You can add information to the diary, without any date restriction, months or even years in advance and then create neat diary entries for specific dates.

Like the card index, the search and report parts of this facility are powerful tools for extracting expense details. Again it presents you with the ability to match part fields.

Certainly, this can be a very useful module if it suits your way of working. I often need to put into my diary a background of birthdays (they do tend to happen every year!), holidays, conferences, and so on.

If you wanted to use PlanIt to block off, say, a week's holiday, you would have to make eight separate entries, as only one day can be consulted at a time. Not only that, but by the time I had set up all my standing commitments there weren't many of the 200 permitted entries left.

But there again, though only 200 entries can be maintained at a time, you can archive additional ones in a separate file. And it has to be said that these kinds of limitation are true of similar packages running on the supposedly much more sophisticated PC1512.

And there's another very general criticism which also applies to all of them. There's no doubt that the PlanIt diary is a clever utility, but you may find that attempting to use it in real life as an appointment planner is impractical in view of the time needed to consult it.

Say the phone rings - someone wants to make an appointment. You would have to save the current application running on the system, erase all files from the ram drive (on the PCW), load PlanIt, call Financial Diary, load the correct section, and select a likely date for the appointment. And all the time try to talk sense on the phone. Still, I suppose this just shows how far off we all are from the truly paperless office.

On the calendar part, only one month is displayed at a time but it is very quick to move back and forward. Unfortunately, the calendar does not follow the ruling of Pope Gregory XIII that century years are only leap years if divisible by 400. As a result it treats 2100 as a leap year and dates after February 28, 2100 must be treated with suspicion. Still, I think I can live with that!

Loan calculator

This utility is a neat presentation of all the information you probably don't like to remember when taking a loan. Given the capital sum, duration of loan and interest rate, you're confronted with monthly repayments, total repayments and total interest. Nothing particularly

PlanIt Personal Organiser
Program Menu

Personal Accounts
Card Index
Financial Diary
Exit PlanIt

Use ↑ and ↓ to select, then ENTER

18/09/86 Wednesday

TIME	APPOINTMENTS / NOTES	MONEY
09:00 AM	Budget meeting	
10:00 AM	Play golf with the boss	
01:00 PM	Lunch	x 8.50
02:30 PM	Meet with the sales rep	14.00
04:00 PM	Finished sales projections with Mark	
05:30 PM	Collect roses for Mary	
Notes ..	Make appointment to service the car	* 12.30
Line: Input Amend Mark Transfer Replicate Delete		35.60

Use Cursor Keys ← → to Select : RETURN to Confirm

PlanIt Personal Accounts
Program Menu

Expenditure Accounts
Bank Accounts
Credit Cards
Load File
Save File
Month End Update
Exit Program

Use ↑ and ↓ to select, then ENTER

© Database Software 1986

clever here - you could do it equally well on a pocket calculator - but it is handy, well laid out and very quick on recalculation.

VERDICT: I would recommend PlanIt for the Personal Accounts facility alone and take the rest as a bonus. And a final point reviewers don't often get to

make: Full marks for the manual - I wish more were like it.

APC

Product: PlanIt
Price: £24.95 (PCW), £19.95 (CPC)
Supplier: Database Software, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.
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WISECRACK allows you to converse with your computer. Use it to answer technical questions – or irritate the unsuspecting who have no idea the program is running.

LOADING: First boot up CP/M (PCW and CPC6128) or MSdos/Dos Plus (PC1512) by inserting the system disc after turning on the computer. Then follow the instructions given for the individual programs.

*Buzz is not suitable for the CPC6128

Written by Andrew Clarke

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for the CPC6128, PCW and PC1512

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It will take an Ascii file and do calculations, totalling, string substitution, and file writing.

In skilled hands, it has been used for invoicing, stock control, financial modelling, accounting, financial reports, quantity surveying, and mailmerging.

The new PC1512 version can use the optional 8087 maths chip for lightning number-crunching.

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Written by Andrew Clarke
and Adrian Simpson

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The theme of Clarke's Corner in *Amstrad Professional Computing* is that any computer user can and should program, though not necessarily in the conventional sense. Given the right tools, anyone can make his computer do what he wants it to do.

The sweepings from Andrew Clarke's workbench are tools which are relatively easy to use, and which encourage people gently into the art of programming.

So far he has produced and described four programs and all four are now available to *Amstrad Professional Computing* readers on these two discs. They come complete with sample files and a manual which you can print out if you wish.

ONLY
£9.95
each disc

To order please use the form on Page 133

Entertainment and education go hand in hand

There is an abundance of books and articles on programming which tackle it as a technical, almost mystical, subject. As a programmer, I'm keener on introducing the craft as something amusing and satisfying that can be practised at all levels, by the unskilled as well as the advanced hacker.

In Clarke's Corner I have been tackling a series of programming projects that vary from the useful to the silly. The common thread that binds the projects is that the resulting programs are all "open-ended" tools.

Programming should not solely be the province of the initiated; and the programs which have resulted from Clarke's Corner so far can be made to do all sorts of things by APC readers who have only just emerged timidly from under the protective arms of LocoScript into the bold world of CPM.

In making these programs do different things, people are actually programming though they may not have realised it.

Scrivener – a mega-success

Scrivener, the program that launched the feature (and which I wrote with Adrian Simpson), is proving to be an international obsession. I know that there are at least 5,000 copies out there – it has been translated into other languages and is infuriating and delighting people all over Europe.

It is appearing on Scandinavian bulletin boards and has been downloaded several times from the Gamlingaye Fido to Norway. It has become the equivalent of the Rubik's Cube, maddening and intriguing anyone who gets to grips with it.

It is presently being used by APC readers to do invoicing, stock control business simulation, scientific calculation, stock portfolio management and for many other purposes. It is even doing stock control for factories and arranging academic references in dissertations.

And an underwear factory is using it to send out disciplinary notes and dismissal notices (they send me

underwear in return for my help – I feel awful about this).

I'm told that anyone who uses Scrivener in earnest has to go through the pain barrier before everything clicks into place and the product suddenly becomes useful.

I came across a Scrivener user on a train the other evening. He appeared to be in a catatonic trance and it was only after I nervously glanced down at his notebook, which he clutched with lifeless fingers while staring at infinity, that I spied the tell-tale double square brackets.

Poor fellow, he was trying to work out a stock control program in which a Scrivener file was used to write a Scrivener file that is then acted upon by Scrivener.

He seemed pale and obviously had not slept well for some days. "Tell them that the double square brackets must line up if the totals are to work", he pleaded as we parted.

One thing that comes over from the many conversations I have had about Scrivener is the endurance and determination of APC readers. You may not know much, but you don't give up easily!

What pleases me the most is that people who felt that programming would be beyond them have ended up by applying themselves to the job of using Scrivener and succeeding.

The Distractors

Buzz, Waffle and Wisecrack were the next three programs I introduced. You can now get hold of them (and Scrivener) in this issue of APC – see the order form on Page 133.

Half of those who write to me about the programming projects that I do for Clarke's Corner ask for useful programs, while the other half request silly ones.

I believe that learning about anything is best when the subject is fun and that having a pistol held to your head comes a poor second.

I regard programming to be no different from any other skill, art or craft. I'm therefore much more concerned with providing programs which are amusing and illustrate important pro-

*Sweepings from
a programmer's
workbench.
Andrew Clarke
reviews the
gatherings so far
and announces a
goody to come*

gramming ideas than in providing an end product which is going to be immensely useful.

"Useful" is not the right word to describe the Buzz, Waffle and Wisecrack trio. But they allow you to play with words in a way that is impractical without a computer, and they seem to be used a lot, if one is to judge by their popularity on the bulletin boards.

With Buzz, you can generate lashings of plausible, pompous jargon; distinguished but impenetrable. Waffle is for producing waffle of whatever type you care to feed the program, chopped up and regurgitated in a random order with names or variables inserted into the text to personalise it and make it more plausible.

Wisecrack allows you to chat to your computer. What the computer actually says can be up to you.

Waffle and Wisecrack can be "programmed up" to do all sorts of things and beyond giving you a couple of examples on the disc, I leave it to you to teach them tricks. Buzz is the only one of the three you can't alter without a C compiler - the others are fair game for anyone who can produce an Ascii file from Locoscript.

Anyone who writes and is paid by the word will cherish Buzz and Waffle.

Having got a virulent and tenacious strain of silliness out of my system, I have now settled down once again to try to provide something sensible. Next month's project will be a program for printing files on the printer.

I was primarily inspired to do this by the difficulties many of you experienced with the documentation we put on the Scrivener disc. It was intended that the fifty or so pages could be printed out merely by typing:

```
PIP LST:=SCRIV.DOC
```

but the documentation on the first discs sent out was not in pure Ascii form, which meant that you had to type:

```
PIP LST:=SCRIV.DOC[Z]
```

This caused enormous difficulties to many readers and meant that my phone rang almost continuously for days. It concentrated my mind on the need to provide something better and easier.

Actually, Pip (which comes on the CP/M system disc) is scorned only by those who are ignorant of its varied virtues.

It enables you to do such things as print line numbers, specify tab stops, truncate long lines, echo characters to the screen, remove form feeds or send them at regular intervals.

And it lets you convert caps to lower case and vice versa, or remove the high bits of characters - that's what the Z in square brackets is doing in the example above.

But the time soon comes when you require something more sophisticated than Pip. There exist many programs which format text for printing, from Roff to Tex, and they offer all sorts of



"If it was good enough for Michelangelo ..."

facilities, most of which we don't need for day to day printing.

I once wrote a simple printing program for the public domain called Mprint (or Bprint) which would print a batch of many files and put the name of the file and the page number at the top of the page.

It became popular, even with those who didn't want the name of the file at the top, or who preferred the page number to be at the foot of the page. I think that the program was successful precisely because it was so simple. I have used it perfectly happily for several years.

When designing a "pretty printer" as a programming project, I wanted to keep the simplicity of Mprint while giving the complex facilities of a full mailmerging program, as well as introducing some features I have never come across before. After all, if one has to write a useful program one might as well go the whole hog.

I never rush into writing a program. There is a legend that when Michelangelo carved his David out of stone, he paced round the original block of stone for days, staring thoughtfully at it.

Finally, he called for a ladder, and carved out a perfect nose in the right place. From the finished nose, he then worked outwards to do the whole statue. All the time he knew exactly what the end product would look like.

I don't claim to produce works of art, but I like to know exactly what the

program will do before I start. I let the ideas ferment a while. I then write the documentation and design the screen layouts, before coding the program.

The opposite technique is to pummel away at the keyboard with only the vaguest of objectives and let the ideas crystallise out gradually. The results can be wonderful but the odds are against it.

So what do we want from our program? We want, first of all, to have a utility that will simply print one or more files on the printer with no more fiddling than inserting page breaks.

However, we need to do more than this for special jobs. What about printing labels, or printing on paper that has been pre-printed with designs?

What about printing a group of letters from an address list or printing out invoices from an accounts package?

There are no doubt printing jobs that are currently presenting problems to APC readers that I cannot predict or imagine, including producing a range of typefaces.

Obviously, I needed to design a program that allows the ordinary computer user to specify exactly how the print is laid out on the page.

I'll describe how I went about it next time, presenting the program in detail and hopefully tempting you get hold of it. Eventually it will be offered in APC as the third disc in the Clarke suite.

The truth about **TELEX**

How much does it cost to go on Telex?

You could go the conventional way and buy a dedicated Telex machine. The cheapest will cost you £1,604 (the Whisper), the dearest £2,892 (the Cheetah). You will also need a separate telephone line, costing £101 to install, plus £404 a year rental. That's a total outlay over the first year of a minimum of £2,109. (All prices include VAT.)

Or you could do what more and more Amstrad users are doing - use your CPC, PCW or PC to double as a Telex machine. And just use your ordinary telephone!

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Extract from Putting your Amstrad to Work Feb 87

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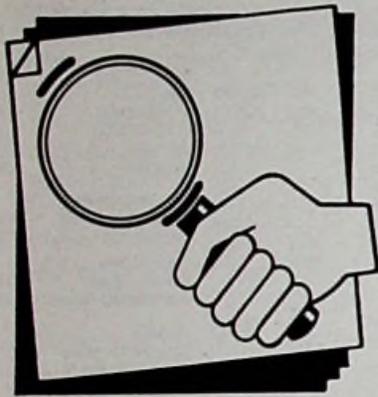


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PREVIEW



Compsoft has launched its budget series of business software for the PC. Sue Gee looks at the Delta 4 database, and Mike James considers the graphics and analysis package, Delta Graph.

Database plus graphics

In principle all database applications are trivial, the electronic equivalent of a filing cabinet. In theory they should be better in every way, but things don't always work out as they should.

Old technology has the advantage of a flexibility that lends itself to ad hoc solutions. For example, if there isn't enough room on a record for all the information, you can write smaller, or add another sheet of paper.

It's not so easy to modify a computer database in the same way, and so a successful application means good initial design. But all database applications are made simpler if the software you are using is flexible or already designed to fit in with your kind of application.

Delta 4 is a low cost database that is ideal for stock control, personnel records, mailing lists, billing, and so on. It seems to have a very clear idea of the sort of thing that you'll want to do with your data, and in this sense it's closer to a finished system than are other established databases such as dBase II. But it still allows a lot of leeway.

Prayer answered

Try to record something like a stock control system using the standard filing card type of database, and you'll quickly discover that more than one type of file will be necessary.

If you create a stock file that records information like part numbers, names, and stock levels, you will also need another file which records the day's (or the week's) orders for these pieces. To keep the stock level file up to date will generally involve processing it against the stock order file.

The scope for error that this sort of multi-file database structure presents shows how Delta 4's solution to the problem is an answer to a prayer - it provides a two-level file system.

At the first level is the header file, which functions exactly like a standard database file. At the second level are up to eight transaction files (or transaction groups in Delta 4's parlance). These are special files to record supplementary information for each record in the header file.

So in the case of the stock control file, the header file might record "fixed" information such as part number or name, then a transaction file would be used to record orders for parts.

Because these two files are related, when you look at the record for a particular part you can also examine all

orders for it. You could also set up another transaction file, say to record the orders placed for re-stocking, and containing information such as supplier, price, and delivery date.

It should be said that although eight different transaction files can be created, Delta 4 only allows you to use one at a time. So you could look at a parts record in conjunction with the orders customers have placed for it, or in relation to the orders that you have placed to re-stock it. But you couldn't examine both at the same time.

In practice this restriction is not too important, however, and it really doesn't detract much from the major advantages offered by simply having a two-tiered linked system.

Once the idea of a two-level header and transaction file structure has become familiar, it is easy to see how useful it can be in a very wide range of applications.

With medical records, the header file could contain the patient's details and the transaction files details of each visit.

In a personnel file, the header file could contain the employees' details and the transaction files the salary earned, sickness records, job reviews, and so on.

With a maintenance file, the header file might contain details of the machinery and the transaction file those of breakdowns and repairs. The list is endless.

Easy menus

Delta 4 is as easy to use as any database program can be. You still have to design a record structure, including appropriate transaction files, but this is made as simple as possible. Most operations are menu-selected so that at least a straightforward database can be set up within a few minutes, ready for entering data.

Special data-entry screens can be set up for operators who may know little about how to handle a database. You can define calculations to be performed on data in the files, produce summary reports, print labels (up to five across) and set up standard sequences of operations (macros).

Delta 4 is even flexible enough to let you write standard letters, perhaps to inform your customers that they owe you money or that they're in need of a service, or to re-order parts automatically. None of these operations is difficult to achieve if you read



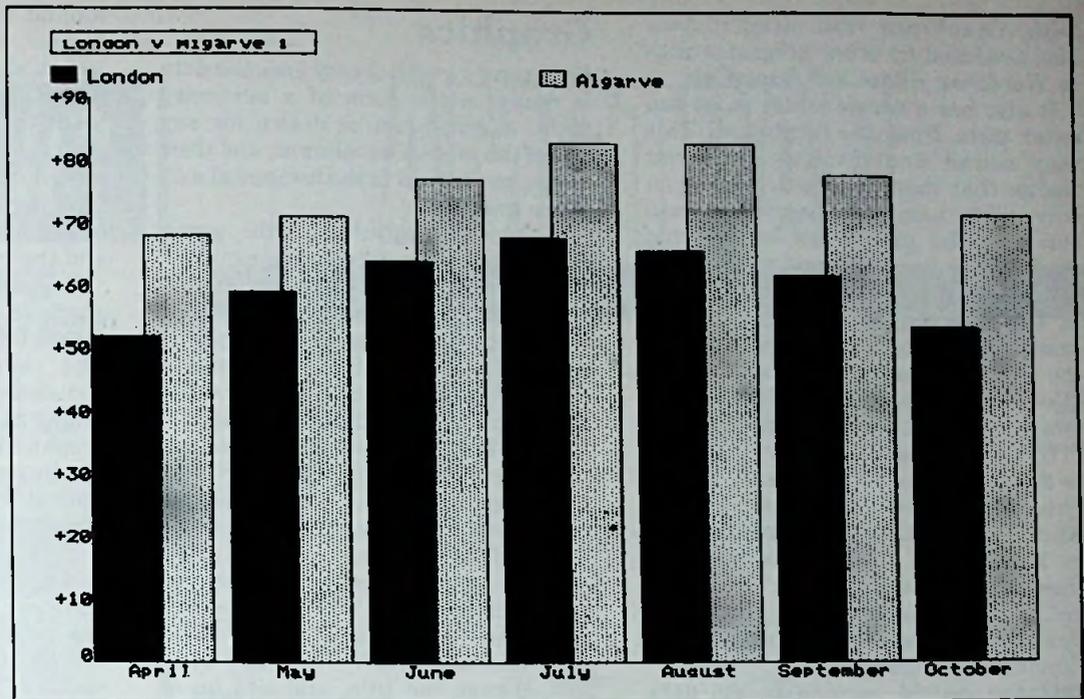


Figure II: Delta 4 produces professional looking graphs

the manual carefully and use the menus – but, in fairness, they can be fiddly and time-consuming.

The documentation is very good: An introductory guide and a fat reference manual. And Compsoft offers a technical hotline service, and training courses.

The Restrictions

Delta 4's main restrictions are related mainly to its price, since it is a budget version of its costlier brother, Professional Delta.

The most important restriction is that it will handle only up to 1000 records in the header file whereas, disc space permitting, Professional Delta can handle up to 250,000 records. But you can buy Delta 4 to see whether it will suit your application, and then acquire the more expensive version later if necessary.

Speed is another restriction: Delta 4 can be very slow unless you work with

a hard disc. It is supplied on five floppies, and a certain amount of disc swapping is necessary on the minimum allowable Amstrad PC configuration of a dual-floppy system.

For many people these restrictions will be of little significance. And they are outweighed by the fairly powerful facilities offered in an easy to use system.

Delta Graph – a graphics package

Delta Graph is a general purpose graphics package and a very good one at that. It is probably most useful to Delta 4 users, who can construct summary tables and graphs based on stored information. But independent data can also be entered and graphed – though “summary tables” can't be derived from anything other than a Delta 4 database.

To a Delta 4 user, a summary table is a table of rows and columns, rather like

a simple spreadsheet. Say you had a Delta 4 database of orders, containing details of each item, the number required, price, and the date of the order. You could create a table showing the sales, total number sold and cost of each item by month, and it might look something like part of this:

	Jan		Feb	
	no. sold	total cost	no. sold	total cost
Item 1	10	350	20	700
Item 2	5	50	10	100
Item 3	6	36	12	72

Once such a table has been defined you could create similar tables from any number of suitable databases. In this sense Delta Graph can be integrated into a complete database application that includes the routine collection of reports and summary tables.

Classy program

Delta Graph is almost entirely menu driven and hence relatively easy to use. However, though in principle the idea of summary tables is not difficult to understand, I found the range of options presented at every menu rather bewildering.

Reading the manual carefully clarified things a little, but the problem seems to be caused by the terminology used.

It helps to know, for example, that a “class” is a column of the table, and can be made up of a number of other columns called “sub-classes”. The rows of the table are referred to as “groups”, and are determined by the values of a single field in the database (for example, an item, as above).

Data input

Even Delta 4 users will sometimes want to produce graphs of information that isn't part of a database file. So

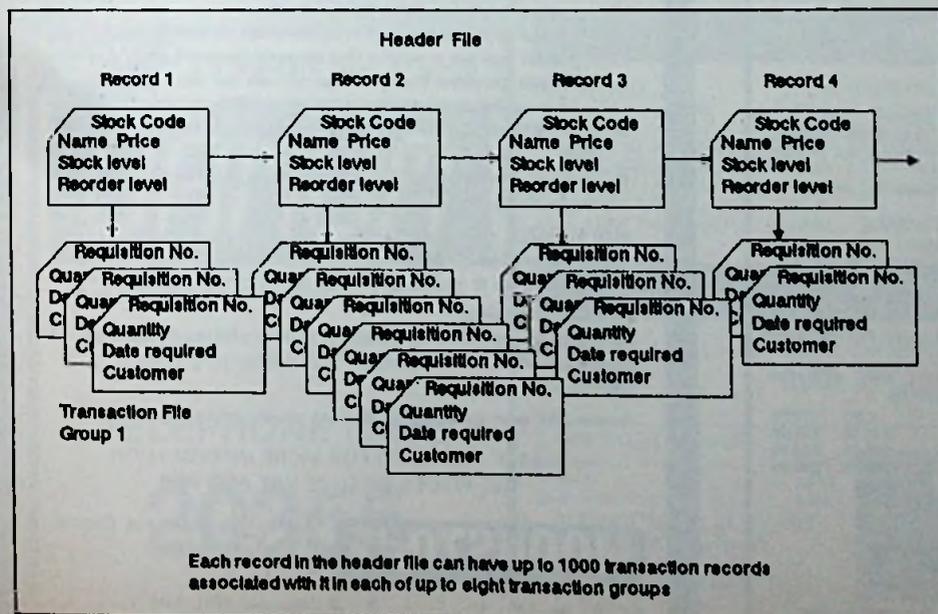


Figure I: Delta 4's transactional structure

Delta Graph can read straight Ascii files produced by other programs such as WordStar, dBase and SuperCalc.

It also has a simple editor to let you enter data from the keyboard. This may sound unattractive until you realise that most graphs are based on only a few tens of values (more than this and the graph can become too confusing to be of any real use).

Initially, the method of entering data at the keyboard can be difficult to understand since it is directly related to the format of the summary tables. And, of course, unless you're a Delta 4 user you won't know anything about these!

Using a special data entry screen, up to 24 classes and 6 sub-classes can be entered. Suppose, for instance, you want a graph showing the temperature at London and the Algarve over the months April to October. You would define seven classes called Apr, May, Jun... Oct, and two sub-classes called London and Algarve.

Unfortunately, moving to the data entry screen becomes slightly confusing because once again classes become rows and sub-classes are columns. So you're presented with a table that invites you to enter two columns of figures for each month - one for London and the other for the Algarve.

This may seem an over-complicated way of entering data, but once you try it with a real problem you find that you get it right quite quickly - if only by trial and error.

Graphics

Producing a graph is easy once the data is ready in the form of a summary table. A graph can be drawn for any row of the table. The columns, and their labels, correspond to the horizontal axis of the graph.

If there are sub-classes, the graph shows each separately on the same set of axes. As in Figure II, a graph for each monthly temperature could produce a bar chart with two types of bar, for London and for the Algarve.

A wide choice of graph types is available besides the simple bar chart - stacked bar chart, three-dimensional bar chart, line graph, pie chart and scatter graph. And in most cases the default values produce usable results.

If the first attempt at a graph is not good enough to use, however, a range of options is available for adjusting the way it looks. You can display scale lines, hide the zero line and key symbols, change the title, and add up to 1000 characters of free-format text, including lines and boxes. This allows you to include labels and even comments on the graph.

One unusual feature for a graphics program is the ability to display best-fit lines or polynomials to indicate the overall shape or trend hidden in the data.

Once a graph has been produced it can be saved to disc or printed out in hard copy. The printout option gives good results but is rather slow, taking

around 10 minutes on an Epson FX80 printer. And unfortunately there's a lack of shading on the pie chart, which makes its printout almost unusable.

On the technical side, Delta Graph uses the GSX graphics environment (a sort of operating system for graphics). This determines much of the graph's final appearance - type styles, shading, and the like.

To use the program with different graphics output devices you have to install the appropriate graphics driver. The review copy of Delta Graph included drivers for the IBM mono and colour display boards, the Hercules graphics card, and an Epson FX80 high resolution printer. You can contact CompSoft for help regarding suitable drivers for other output devices.

This is a professionally produced package. If you're not a Delta 4 user there are other graph programs which are arguably easier to use and which will produce results at least as good as those of Delta Graph. But if you do use Delta 4, then its Graph extension is definitely worth buying.

Products: Delta 4 and Delta 4+ (Delta 4+ requires Delta Graph).
Prices: £99.95 (Delta 4), £129.95 (Delta 4+).
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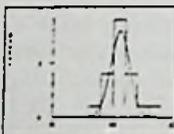
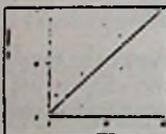
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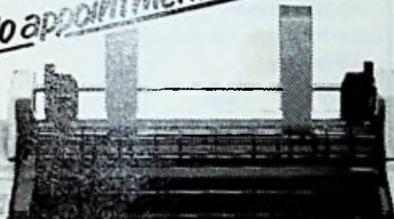
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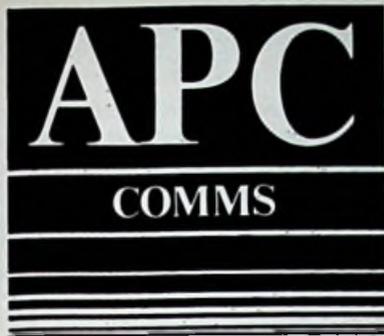
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Trusting and sharing

With the advent of the Amstrad PC, much interest has been expressed of late in shareware and public domain software.

While shareware is a relatively new concept in Britain, it has been used successfully by several hundred American authors as a means of distributing their software across the world, and receiving income in return.

It works on the honesty and trust system: Initially you get the software for free, and if you like it you pay the author and clear your conscience.

Because of shareware's success in the States, most distribution in this country is carried out via the online services of US bulletin boards and national networks such as The Source and CompuServe.

As many modem owners have realised however, the cost of accessing the US networks can work out at 20 pence or more a minute, even when a call is made via data networks such as PSS (Packet Switch Stream) or Mercury Data Systems.

What's more, since the sysops (system operators) of the bulletin boards are often in a similar, if not worse, financial situation as their callers, the quantity and quality of software available for downloading from such boards is patchy, to say the least.

Add to that the inevitable problem of continually engaged phone lines, and downloading "free" software can become a frustrating and not-so-free business.

Enter Compulink

So it was that a couple of years ago computer enthusiast Frank Thornley entered the online world. Mindful of the gaping chasm between the comparatively rich modem owners accessing the US networks for the excellent shareware and PD software, and the less well-endowed users dialling and redialling busy BBSs, he created his own multi-user board, open to all, but with certain privileges afforded to members who pay for the services offered.

Compulink was opened in 1985, and currently boasts six lines accessible on all normal UK baud rates: 300/300, 1200/75, 1200/1200 and 2400/2400.

What it costs

Accessible by all for the usual BBS messaging purposes, Compulink is part of the international Fido network,

which allows paying subscribers to send messages to and from any one of the growing worldwide network of Fido boards.

Members have the choice of two subscription levels: The normal subscription of £30 entitles you to unlimited access to Compulink, while the "soft" option of £40 membership includes in addition a four pack of PC software discs (PC Write, PC Calc, PC File and PC Talk).

There is a plethora of online programs available for downloading, but by far the bulk of Compulink's public domain and shareware software resources lies in its software library.

For £3 members can buy any one of more than 800 discs in the library, each of which is jam-packed with programs from the public domain and shareware end of the market.

The charge is, says Compulink, merely to cover the cost of copying and distributing the discs. Comparing the price with those levied by other software libraries in the UK confirms this, as some so-called "user groups" are charging up to £10 a disc for what is, after all, freely distributable software.

Going online

As well as having access to the bulletin board 24 hours a day seven days a week, all Compulink members also receive a regular newsletter and a quarterly magazine on disc, which includes several programs from the software library as well as articles, news and reviews.

As can be seen from the sample Compulink welcome screen, users are presented with the familiar Fido network login, then given a choice of which section of the board they wish to access.

In addition to the messaging and file up and download areas, Compulink boasts a members clinic - a sort of computer agony aunt area where members can lay their troubles for the clinic organisers and other members to see, and hopefully help them with.

The clinic is purely voluntary, and membership dues can often be saved many times over by a few carefully chosen words received from a helpful member who has experienced problems similar to your own.

A visit to the repair shop can cost upwards of £20, not to mention the inconvenience of being without a machine for several days. With the Compulink method of self help, members can often find a solution to

*Steve Gold logs
on to Compulink,
a bulletin board
system dedicated
to PC owners*



their PC problems without leaving their home. And at the very worst it's nice to know you're not suffering alone.

Things to come

Compulink's Frank Thornley is not sitting on his laurels. Not content with

running what he claims to be Britain's largest multi-user bulletin board, as well as the fastest (up to 2400 baud and rising) he hopes soon to have access to and from the Arpanet and PSS networks.

The latter option will reduce the online costs for long distance callers

who have to restrict the bulk of their access to Compulink to off-peak periods.

As well as improving network access, Frank also hopes to offer a multi-user chat facility similar to that seen on the American networks, and multi-user games (MUGs) as seen on Micronet's Shades. Frank has other things up his sleeve too, but he's keeping some of them as surprises for members.

Bright future

It is clear that many potential and actual Amstrad PC users are going to find themselves immersed in a highly business-orientated world where dealers will not offer help without a good chance of securing a sale, or being paid directly for their services.

That should give Compulink an enormous opportunity. It provides an online forum for members to exchange ideas, and to download the latest PC public domain and shareware software - all for the price of a few phone calls and a modest membership fee.

It is a commercial operation, but there can be no doubt that members get good value for money. Help is freely given and received, and you can be sure there's no ulterior motive.

Some people may find they can achieve several of Compulink's membership advantages at lower cost elsewhere - software libraries, online help, online files and multi-user systems aren't new in the UK, and many other operations involving a 24 hour help hotline seem to be springing up.

But to find everything Compulink offers in one complete package for the cost of a modest PC applications program is quite unusual. And the American experience would tend to suggest that the £50 a year hotline services will fade away as fast as appear.

Compulink, on the other hand, has been running for two years now, and serves a thriving community of more than 2,000 members.

All in all, it represents a proven commodity and information resource, and (fingers crossed) with six lines most users will rarely get the dreaded engaged tone.

Note: When logging on at 2400 baud, callers should hit the spacebar a few times to wake up the system. Other baud rate users should hit carriage return a few times.

```
File Areas

1 ... Compulink Information Files.
2 ... PC Business World File Area.
3 ... FidoNet mail-files & uploaded files area.
4 ... Programs from BYTE Magazine.
5 ... Computers and Social Work (CASW) & Handicapped File Area.
6 ... FidoNews Area.
7 ... FidoNet Incoming Mail Area.
8 ... New games.
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11 ... DBase II Accounting package
12 ... Adventures
13 ... Turbo source - games
14 ... General patches for various programs
15 ... Programs of interest to Radio Amateurs - (HAM's)
16 ...
17 ...
18 ... - FIDO Sysop's Utilities
19 ...

File Area, or Quit:
```

A Compulink menu screen

```
Fido(tm) Version 11w
FidoNet(tm) Net 503 Mode 2

          00
          @/
          PORTS
          (*)
          U

Your FIRST name: STEVE
Your LAST name: GOLD
Steve Gold? [Y,n]: Y
Wait ...
Password: .....

You last called on 10 Feb 87 23:53:16
Hello Steve Gold!

Welcome to Compulink's Bulletin Board Service, one of the many
services available to members.

As either a member or subscriber, have you received the latest update
of our disk library?? There are some really EXCELLENT programs there, for
just about everybody!! And for the paltry sum of 3.00 per disk.

You can now order disks from the library by filling in the questionnaire.

You are the 15,637th caller

Wait ...

MAIN Commands:
M)sg-Section F)ile-Section G)oodbye
S)tatistics A)ns-Questionnaire B)ulletin
C)hange U)ser-List E)ditorial V)ersion

Main: M F G S A B C U E V or ? for help:
```

The Compulink welcome screen

Further details about Compulink can be obtained from: Compulink Bulletin Board System, 67 Woodbridge Road, Guildford, Surrey.
Tel: 0483 65895 (voice line).
Modem lines: 0483 573337 (4 lines - 300 and 1200/75 baud) 0483 573338 (2 lines - 1200 and 2400 baud full duplex).

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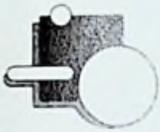
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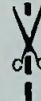
Name

Company

Address

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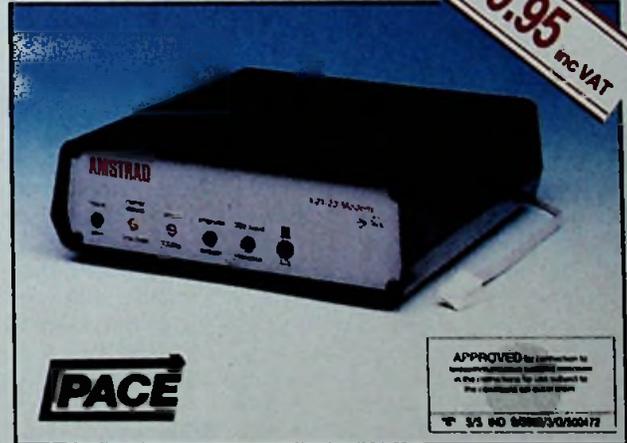
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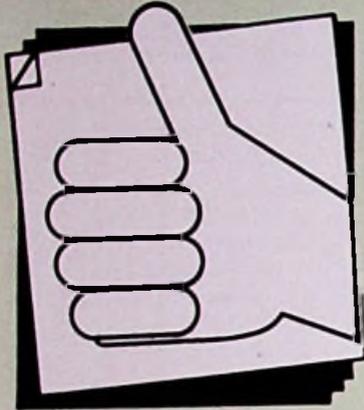
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APC/3

APC

APPLICATION



Helping hand green

Many companies have begun to realise that suitable training and awareness of computers and their effects is imperative if the money already invested in hardware, software and time is not to be wasted.

As a computer training consultant I provide skills and experience, in the form of advice and demonstration, through the medium of specific training courses designed for individual companies.

For this I use the PCW. It is (just about) portable and the range of software available at reasonable prices has allowed me to collect a library to cover most eventualities.

A tale of two companies

Many of the companies seeking advice about information technology are relatively small and have little previous computer experience. Within this broad categorisation, however, there are two distinct types.

First, there is the very small company in which no-one has any knowledge of computers but someone (perhaps a client, supplier or bank manager) has told the staff that computers are a Good Thing. They then decide to buy one, but don't know what to get, where to get it from or what to do with it when they get it. That's where I come in.

The second case is the slightly more developed company in which senior management know they can have more accurate control using a computer system. The staff who will actually work with it, however, are suspicious.

They haven't used a computer before: They fear they might be replaced by young whizz-kids or by the computer itself, or they're concerned that they might not enjoy their jobs any more. It becomes part of my task to dispel these concerns.

What's the problem?

The first type of company is often vulnerable because the person who provided the original advice hasn't been explicit in saying just how a computer will help – the company executives are left to their own devices.

Although there are various options available to overcome this problem, each has its drawbacks. Enrolment in an evening class may mean that the executive will end up being able to program in Basic but also wondering how this is going to solve his problems at work.

Perhaps buying from a specialist

computer shop seems safe, but will our businessman get the right kind of instruction?

And can he really hope to be sold the right system for his company – or will he be offered the system with the biggest profit margin for the dealer? (I know that dealers will cry "unfair", but they're not all perfect).

Then there are training centres which offer courses in various aspects of computer application – at a price. Here the full price isn't so much the actual cash cost of the course, which is often quite reasonable, as time.

Time spent away from a company, particularly in its early stages, can be too much to pay. And this factor also makes unattractive the "go it alone" approach of studying all the books in the local library, reading magazines or buying a computer and software and experimenting until something works.

The problems facing the larger company are slightly different. The management may be perfectly competent to select and acquire a suitable system, but can they get their staff to accept and use the computer effectively?

If it isn't going to be well received by the people who are actually to use it, the ideal system from the management's point of view may not be the best choice for the company.

Like the smaller company, various obvious training methods have their drawbacks. Evening classes are unlikely to be popular since many staff will argue that their evenings are their own, and books will not be used much if there is little enthusiasm in the first place.

A training centre would probably be better, but the cost of taking staff from their jobs, possibly accommodating them at the centre or in hotels and paying for the training itself, can become very significant.

Training grants

For both types of company, what is generally needed is a training package tailored to individual company requirements, which can be given personally, on-site and provide hands-on experience.

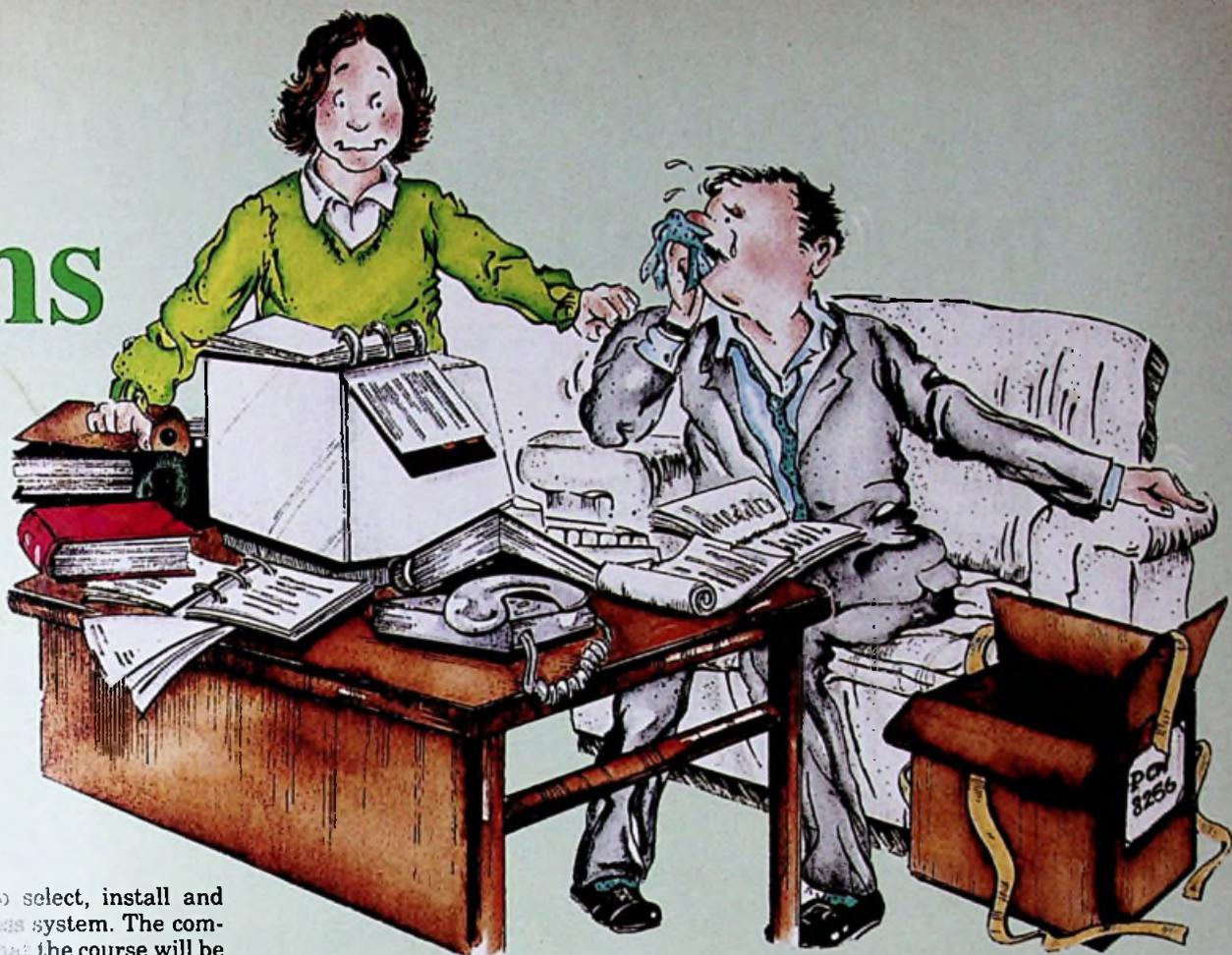
The cost of such courses is not necessarily prohibitive, because the Manpower Services Commission, through the Industry Training Organisations (ITOs), provides training grants to small businesses (of up to 200 employees).

These assist companies in getting

**Sheila Napier
describes her job
as a computer
training
consultant**

CPC PCW PC

for horns



training in how to select, install and run a small business system. The company can be sure that the course will be appropriate because the content is regulated and has to be approved by the ITO before a grant is given.

Advice from a training consultant

When faced with the smaller company's problem, I generally tuck my PCW under my arm (or try to), throw a handful of assorted software into my briefcase and head for the company office.

I thank my lucky stars that the PCW doesn't ask much in the way of power supply or desk space because it often doesn't get it. I've worked sitting on the floor, in a passage and behind the bar of a pub.

I've balanced the PCW on a shelf in a caravan, on a packing case and on a dentist's reception desk – and those are only the places you would believe.

In many respects, training advice in this kind of situation is given through hands-on experience. After setting up the PCW and showing the client how to insert a disc and use the keyboard, I usually take a back seat: The trainees do the typing while I do the talking.

What kind of things do I cover? Well, courses are designed with specific companies and their problems in mind, but there are common elements.

For example, time is always spent talking about the criteria for selecting a system, planning its implementation and how to consider future developments or expansion.

Specifically, operating systems are a must. And nearly everyone wants to know about computerised accounts. A database system and spreadsheet are usually included too, but (peculiarly)

word processing is something of a tricky area – the ITOs tend to dislike much time being spent on it.

This is a pity because most people are quick to grasp the advantages, and exploring a word processing package is a marvellous way of building confidence.

Beyond training in these common applications, topics are tailored more to the client's requirements. Stock control, computer aided design and production management or electronic mail can all be included if they are relevant.

The larger, more established company provides a different challenge. With this type of client the computer may already have been selected and installed, in which case the PCW can have a well-earned rest.

But if there is little software established on the company system it might still be used so that the staff can compare different packages doing the same task.

In this kind of office there is generally suspicion and distrust of computers. Often I have to take the most boring job around and show how the computer, PCW or otherwise, can make it less tedious.

The features which always impress are the mailmerge and label-addressing side of word processing, VAT calculations in accounting, and rapid recalculations in spreadsheets.

Even today, one of the commonest misconceptions is that using a computer is very technical and requires esoteric electrical or mathematical skills.

I'm still greeted by remarks such as

"I'm not technically minded", "I'm thick", (very popular but rarely true), "I'm too old", and – unspoken – "I don't like it because I've never tried it".

All these reactions are normally overcome with explanation and experience. Just learning some of the jargon is a big step towards demystifying the whole process – knowing that a spreadsheet is not the layer next to the blanket on a bed or that a system crash is not necessarily an explosion.

After the show

Training doesn't stop at just showing people how to use a computer. Continuing support is often needed for both types of company. Following on from the initial training, I'm often needed to help select and implement a specific system.

To do this I have to delve quite deeply into things like the company's size, operation and requirements. And I have to match these up in detail with the systems available – and those which might be appearing in the near future.

But it often happens that the PCW, with its fully integrated hardware, is chosen for the smaller companies.

As for the future, introductory training should in theory become less necessary as more school leavers are conversant with computers. But I suspect that in practice there are still many miles for me and my PCW to travel before we become redundant.

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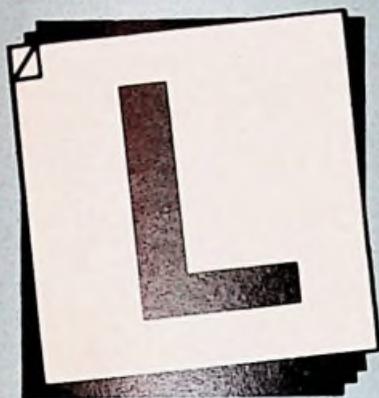
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APC

SPECIAL



Send it down the line

Computers don't get along very well with the telephone system. Phones are reasonably good at conveying language between humans because humans are expert communicators.

Natural languages have a lot of redundancy built in and the part of our brains that deals with speech is well practised in ferreting information out of noise. A brain that can derive meaning from nudges, winks and whispers need have no fear of BT's characteristic crackle.

But in computer communications there is no inherent redundancy — every little bit is vital because computers are not intelligent enough to infer meaning from context. Computer input and output is conducted strictly in terms of voltages switching between two precise levels.

Weak signals

Now, this type of signal would not travel well down telephone lines even if BT would allow you to send it. And computers are not able to make any sense at all of weak or wavering signals of an inconstant voltage, which are what you get out of the telephone no matter what is being fed in at the other end.

Given these difficulties, it ought not be possible to connect computers through the telephone system at all. But it's done all the time and what makes it possible is the modem.

The word stands for MOdulator/DEModulator, which turns the computer's high/low voltage swings into audio tones which the telephone system can handle. The modem then feeds these tones down the phone line to another at the other end. At the same time it listens for audio tones sent by the other modem and turns them into voltages suitable for the computer.

Limitations

This translation enables a usable connection to be established, but the phone system places many limitations on computer communications. For one thing, you have to use serial input and output to and from the computers, because you only have one signal line in a phone circuit and there's a limit to the number of tones that can be transmitted and received.

Effectively each computer can transmit a choice between two tones, which indicate a high or low voltage level. It can also receive and distinguish

between two other tones transmitted by the other computer.

That makes four tones in all, as each computer must transmit on a different pair of frequencies from the pair it receives on, otherwise the two transmissions would become confused.

Computer memory is usually handled in bytes, made up of eight binary bits. To send such a byte through a serial link it is first broken up into its bits and each bit is sent one at a time in an orderly fashion so that the byte can be reassembled at the other end.

Bandwidth

These bits will all be either ones or zeros, which the computer will send through its serial interface as high voltages or low voltages, and which the modem will convert to high frequency and low frequency tones. This is called Frequency Shift Keying.

Sending bytes a bit at a time slows things down and phone time costs money. It would be preferable to transmit the bits as rapidly as possible, but here we meet another problem with the phone system. There's a limit to the range of frequencies the telephone will carry.

Voice communication only requires frequencies between about 100 cycles per second and 3000 cycles per second. Hi-fi buffs will know that this is a very restricted frequency response, much worse than the cheapest cassette tape. However, this is the bandwidth we're stuck with because it's already built into telephones all around the world.

Multiplexing

This is not just careless design. It is partly due to the fact that early telephone equipment simply couldn't be made to give better fidelity, but the frequency response has purposely not been improved through the years.

A narrow bandwidth makes it possible to transmit many individual calls at a time over a single trunk line using what are called multiplexing techniques.

If subscribers were given a bandwidth up to 6000 cycles (still nowhere near Hi-fi) the number of connections between exchanges, including satellites and microwave dishes, would have to double.

This bandwidth limitation means that modems must be designed to use tones well below 3000 cycles per second. Since we need four distinct

*Communicating
via a modem:
How it works —
when it works!
Evan Vance
explains what
happens — or
ought to — when
data is sent down
the phone line*

CPC PCW PC

tones, different enough for the modem's receiver circuitry to tell them apart easily, some of them are going to be much lower in frequency than the upper limit. And that in turn limits the speed at which bits can be transmitted.

Electronic circuits need to hear at least one full cycle of a frequency, preferably more, to recognise it reliably. So our bit transmission speed (called the baud rate) is limited to perhaps half of the number of cycles per second of our lowest frequency.

Tones trap

The telephone system itself uses tones to communicate between exchanges. Our modem must therefore avoid tones that would confuse the exchange. Telephones will soon be using tones for dialling numbers, too, so allowances must be made. A number of standard frequencies have been agreed to avoid clashes (see Figure 1).

300 baud is the most widely used rate. This speed has proved reliable and reasonably tolerant of noisy lines but it is rather slow in computer terms. Serial transmission requires extra bits added to each byte to help the transmitter and receiver to stay in step, so 300 baud works out to only about 30 characters of text per second. To a computer this is like watching continents drift.

BT came up with a clever wheeze for its Prestel service that gives a faster speed, at least in part. Prestel is designed to present pages of information to subscribers who select items from a menu by pressing just one or two keys.

Split speeds

BT reasoned that Prestel subscribers would not be sending many characters and would be typing them slowly anyway. So why not use the highest possible pair of frequencies to transmit data to subscribers at a high speed, and have subscribers, limited by the lower remaining frequencies, transmit at a slower speed? Thus the Prestel service runs at a split baud rate, 1200 receive and 75 transmit (from the subscriber's viewpoint).

This works very well for Prestel and other information providing services but it is quite useless when subscribers wish to send messages to each other.

You can read messages sent to you at a hot 1200 baud, but sending them to others is positively glacial — 75 baud is only about 7 characters a second.

For those making serious use of electronic mail to send large amounts of text, with the computer reeling it off from a previously prepared disc file, the split speed dodge doesn't make it.

This article will have been sent over the telephone several times by the time you see it: Once from me to the editor's MicroLink mailbox where it will be stored on the Telecom Gold computer; then from editor's mailbox into his own micro where he will use his word processor to knock the best paragraphs out and substitute some boring stuff; then back it goes to a different mailbox on the same Telecom Gold computer where the publisher will collect it to typeset it directly from disc.

(Editorial note: This paragraph has been left precisely as it was received on the editor's mailbox — well, more or less.)

Cost cutting

An article of this size takes about ten minutes to transmit at 300 baud, which works out a lot more expensive than first class post even if you send it after 6 pm. It is worth doing because delivery is almost instantaneous and because it never has to be retyped. But if it could be transmitted at 1200 baud, the phone charge would be cut by 75 per cent.

There is a 1200 baud option on Telecom Gold, but to get 1200 baud in both directions while hampered by the phone's narrow bandwidth requires a different technique. Instead of flipping between two frequencies to differentiate high and low bits, a single frequency is given a little shake at each change.

This cuts down the number of frequencies needed by half, so the lower frequencies are dispensed with and we can get higher transmission rates because we're no longer held back by low frequencies. This is called Phase Shift Keying, and the modems which are equipped to do it cost from £225.

The two frequencies used for this so-called 1200 full duplex are 1200 cycles and 2400 cycles. These are obviously chosen to be exact multiples of the baud rate, which is necessary because with

phase shift keying we're really back in the realm of digital techniques. It would be very difficult, perhaps impossible, to keep track of phase shifts occurring completely out of step with the waveform which was being shifted.

Unfortunately, the least bit of crackle on the line also knocks the phase shift detection out of sync, and it takes the circuitry a lot longer to sort itself out than with frequency shift keying. So instead of one or two corrupted characters, you tend to get a whole line of rubbish across the screen and possibly even a dropped connection.

System X

This makes the faster speed unusable on all but the very quietest lines. This means that it will probably be OK for local phone links, which are fairly inexpensive anyway. But long distance calls, where the faster transmission would save a great deal more money, are just not on.

Nevertheless, while phase shift keying is not much use at present it is worth noting that the head of British Telecom has gone on record with the promise that the British phone service will be the best in the world by 1990.

New System X electronic exchanges have already been installed in much of the country and by the time the program is complete, it will be possible to call almost anywhere on the British mainland without the signal having to pass through any of the noisy, old fashioned mechanical switchgear.

This ought to mean that phase shifting at 1200 or even 2400 baud will be completely reliable in about three years from now. By then the fast modems should also have come down in price.

In the meantime, another technique is coming into use. This involves special communications software called EPAD, which allows you to swap the 1200/75 baud split speeds about, so that the subscriber can use the fast side for transmission.

On our way

Ideally this swapping would be done transparently and automatically using a software controlled modem, so that whichever end was sending would always have the use of the faster speed.

Not all modems will allow this and some don't have the reverse option at all, even on a manual switch, but those that do are cheaper than the full duplex 1200 baud machines.

We're a long way yet from using modems with as little fuss as we use the telephone for voice conversation, but as another British institution puts it, we're getting there. In five years' time APC will be able to have a regular column picking out interesting articles from the past — and I bet this one will provide superb material.

CCITT European Standards	Baud rate	Transmit zero	Transmit frequency one	Receive zero	Receive frequency one
V.21 Originate	300	1180	980	1850	1650
Answer	300	1850	1650	1180	980
V.23 Provider	1200	2100	1300	450	390
Subscriber	75	450	390	2100	1300
V.22 and V.22 Bis	Different Transmission System — Phase Shift Keying using 1200 and 2400 cycles				
USA Standard					
Bell- Originate	300	1070	1270	2025	2225
103 Answer	300	2025	2225	1070	1270

Figure 1: Agreed standard telephone frequencies

APC

TECHNICAL



Having a stab at file recovery

If you treat them sensibly, floppy discs are a reliable and robust form of data storage – so much so that it's very rare for all the information a file contains to be lost for ever after accidental erasure or a failure of some kind.

There's a great deal you can do to recover a file you have apparently destroyed – as long as you notice the loss and act promptly.

This article explores PCW file recovery techniques as they apply to LocoScript users and examines how The Knife, a disc utility package from Hisoft, can be of help with files created under CP/M. Next time I'll be looking at a range of recovery tools available for the PC1512.

LocoScript in limbo

LocoScript, as a good word processor should, takes considerable care not to lose your valuable documents. In fact it's so paranoid about keeping things safely that it only deletes a file permanently when the space it occupies is actually needed to store another document.

When you make changes to a document its original version isn't deleted. Instead it enters a limbo state – it doesn't appear on the directory listing but it still exists, for the time being at any rate.

Similarly when you erase a document with f6 it is placed in limbo. You can think of limbo documents as a sort of death row for files where they await their turn for the disc space they occupy to be re-used.

To see all the limbo documents that still exist, all you have to do is select the f8 menu on the Disc Management screen and turn on the Show Limbo option.

Following this you will probably see a number of new files in the directory with the word "limbo" written immediately to their right.

Even though you can now see them, limbo files still cannot be read by LocoScript. You can't edit them, nor even read them into a document as you can with an Ascii file – you have to recover them first.

To recover a limbo document place the file cursor over its name, press f5 (Rename) and select the recover from Limbo option.

If there is already a file of the same name you may have to rename the limbo file, but from this point on it is

restored to the condition it was in before it left your control.

It is obvious that limbo files provide the LocoScript user with a good deal of protection from accidental loss of a file by incorrect updating or erasure:

And limbo files are stacked top-down, so the more free space available on a disc, the more protection limbo files offer.

If you really do want to erase all trace of a document on the Disc Management screen (for security reasons, say) you can do this by deleting both the document and any limbo copies of it.

To erase a limbo file simply show the limbo files in the directory, place the file cursor over the limbo file in question and erase it.

Take care, however, if the information your erased document contained is very sensitive and has to be kept from prying eyes at all costs. Even when you erase the limbo version of the document, it still only disappears from the directory.

With a tool such as The Knife, described below, it is possible to get at the original information. There are even tools which can get at parts of documents on discs which have been reformatted.

The only sure way to keep erased information secret is to lock the disc in a safe – or destroy it!

Limbo technicalities

Although it isn't necessary to know anything about how limbo files work in order to use them, such information will be helpful to the CP/M user trying to look at a LocoScript disc.

CP/M stores its files in 16 groups (directories) corresponding to user numbers 0 to 15. To access a user group you simply type **USER n** at the > prompt (where n is the user number).

The first eight CP/M user numbers are identical to the LocoScript groups 0 to 7. That is, a document stored in LocoScript group 0, irrespective of any group name you may have given it, is actually stored in CP/M's user 0 directory.

The remaining eight CP/M directories are used to store limbo files. So if a file in LocoScript group 0 is sent to limbo it is in fact moved to user directory 8. The limbo area for LocoScript group 1 is user directory 9, and so on.

As with limbo files, erased CP/M files in user groups higher than 7 are not

**Mike James
looks at ways of
revitalising
damaged PCW
files which may
only be playing
dead**

PCW

absolutely safe from intrusion, and can be read by certain tools.

To recover files in general, and seriously damaged LocoScript files in particular, you need two things – a disc utility package and knowledge.

There are a number of disc utilities for general CP/M machines but the one I use is Hisoft's The Knife, which is specially customised for the PCW (and the CPC range – there's also a version for the PC, about which more next time).

Unfortunately I have to say from the start that to recover files from some types of crash situations really does require a lot of detailed knowledge about how information is stored on disc.

The Knife manual is well written and describes nearly everything you need to know about CP/M file storage. Even so, to use the full features of the program

re-used then the file can be un-erased just by changing the mark. This is exactly what The Knife utility UNERA does. Simply enter:

UNERA filename

and the file will reappear in the directory if its directory entry has not been re-used.

Nevertheless, a file that has been recovered using UNERA should be treated with care – it is possible that part of the space previously used by the file has already been re-used. In this sense un-erasing a file is not like recovering a LocoScript file from limbo.

It is also worth noticing that in many cases it is not worth trying to un-erase a LocoScript file because if it doesn't exist in limbo then its space has been re-used.

One final point: As a general safety

been lost or re-used you still might find intact some of the sectors which were used to store it.

To save you the job of searching through the entire disc sector by sector, The Knife will search for specified sequences of characters anywhere on the disc.

One of the biggest problems with this sort of file recovery is that you might succeed in producing a readable file, but if it isn't in the correct format it will still be of no direct use.

For example, a damaged LocoScript file is very difficult to recover because to be read by LocoScript itself the file header has to be correct and all the control codes legal. Most LocoScript files recovered as partial files will be rejected as not being in the correct format.

The Knife displays the contents of

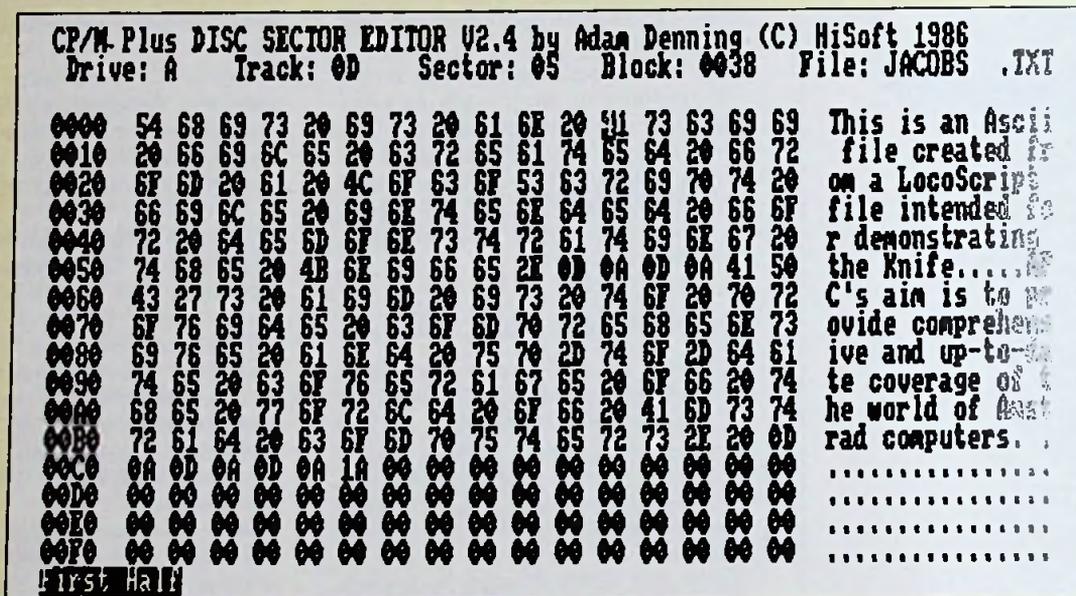


Figure 1. The Knife Sector Editor Screen

you have to know enough about computers to understand hexadecimal numbers and a few other things besides.

But before you're put off completely I'd better say that there is one part of The Knife that can be used by anyone – UNERA, an UNERAsure utility.

I knew I shouldn't have!

The most common cause of file loss on any machine is charitably called "operator error" – erasing a file you really wanted to keep.

And irritatingly this sort of mistake is often made when trying to clean up or back up a disc. In other words, normal file maintenance can often lead to a need for specialised repairs!

However, a file that has just been erased has not gone forever because, as described in last month's article, erasing simply marks the file's entry in the directory as being available for re-use.

As long as the directory entry and the space that the file occupied are not

rule, if you accidentally delete a file under CP/M, make a copy of the remaining files on the disc and then use UNERA on the original.

The ultimate tool to enable you to solve any type of disc problem is a sector editor. The Knife sector editor allows you to examine and change the contents of individual disc sectors, the most fundamental way that you can interact with a disc.

Instead of files, what you see are the underlying storage sectors which the operating system organises into named files (see Figure 1).

You can examine and change the directory area – starting at track 1 sector 1 – to un-erase files, alter their length and so on. To do this you have to know the format of a directory entry, but this is fully documented in The Knife's manual.

You can also examine the individual sectors that make up a file and correct any errors that you find. To make this easy The Knife will take you to the first sector of a named file and then allow you to move through it a sector at a time.

If the directory entry for a file has

the sectors as hexadecimal numbers (and where appropriate the text characters they correspond to). If you want to change anything you have to type in its new value in hex.

In a sense this is not too much of a problem, since if you know enough to use The Knife constructively hex should be a pushover.

But the program is not meant for raw beginners, and it will only help you do what you want to do if you know precisely what you want to do.

As well as two versions of the sector editor and the UNERA utility, The Knife distribution disc contains Wdel (an improved and better protected ERA command) and Sdir (an extended DIR command).

Also included are Copy (a file copier which is much easier to use than Pip), Page (a much improved TYPE command) and Gensub (a batch file generation aid).

APC

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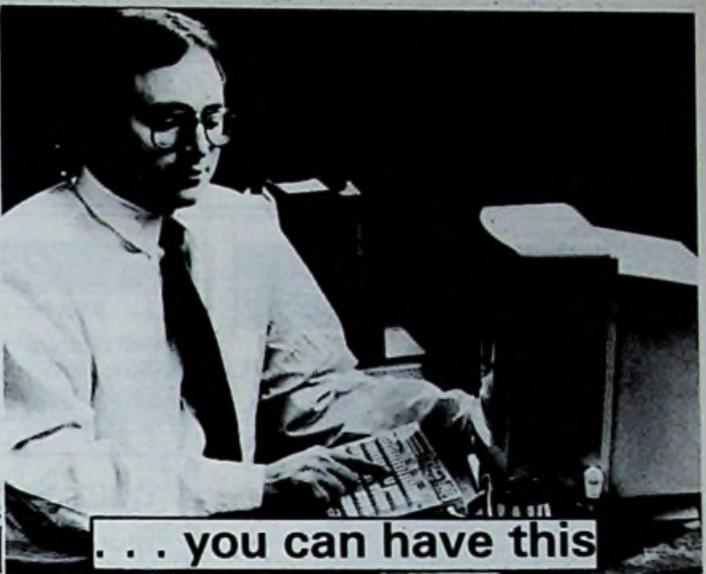
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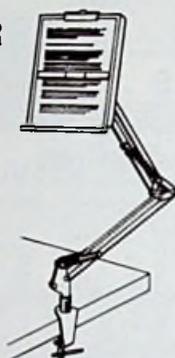
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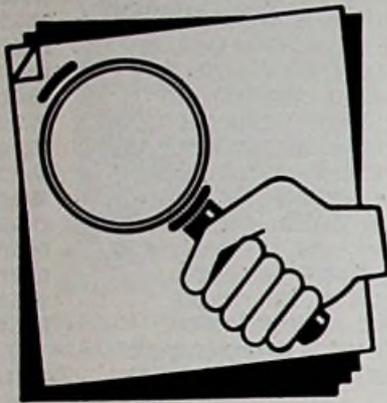
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Keeping a keen eye on costs

There are many book-keeping systems which will calculate your organisation's profit or loss by keeping track of revenue and expenditure. However, all I've seen so far lacked a vital element: In many companies the control of costs has a greater effect on profit than squeezing the maximum revenue for the product.

It is therefore hardly surprising that I was greatly interested to see Cornix's Job Estimating and Product Costing systems for the PCW range.

The packages, available separately or combined contain a high-quality A4 photocopied manual which is informative, clear, well structured and easy to read.

The first package - Job Estimating - produces the simple Customer mode menu shown in Figure I. It lists all the options available except those restricted to management, denying the operator an insight into time costs and profit. This Customer/Management mode can be toggled from the opening menu.

Components are the items such as labour, materials, transport and so on,

and therefore cost control, is the incorporation of every single cost element, no matter how tiny.

Imagine a small builder working on a house extension, tendering for building a garage and shortly starting work on redecorating an apartment. These three jobs alone would probably leave insufficient spare job lines for a further tender once all the minor, but profit-sapping items such as paint thinners, are included.

So before laying out money on this excellent product you must assess your organisation very carefully. If it is something like a small workshop producing simple castings, each record only a few component lines, then it is likely you will have sufficient jobs to go at any one time to come close to filling a file.

Our builder may not find the package suitable, whereas it would be ideal for the foundry.

When using the system each component is stored in a common group of similar cost items, as in Figure II. Since a record only contains the description, unit of measure, cost price and selling price, data entry is fast and clear.

Sadly, as in most simple systems, the software does not permit copying an existing record if a second is only a minor amendment of it.

When it comes to using these records, however, I have no quibbles. All you do is enter the group code, such as MIC for micro and then key in the description.

If you only enter part of it you will be presented with those component records in that group which contain this string as part of their description. You can then select the one you require. As an example, if you enter the string AMS or ams (it is not case specific) then AMSTRAD PCW8512, AMSTRAD PC1512, or even Hamster where it's in the group, would be displayed.

In order to estimate a job you give it a title, by means of which it is later retrieved, and then pick out its cost elements, adding them line by line to the job. There is no limit to the number of lines in any single job so long as the total number for all jobs does not exceed 500.

Once the job is built up, the finished estimate shown in Figure III gives the profit margin and the opportunity to adjust the selling price. At least when the job is complete or a tender is rejected, you can delete it, thereby giving back however many lines it contained.

But the fact that there is no way of deleting a cost component is a serious omission. I can understand Cornix

```

Customer
Job Estimating

Menu
****

1 ... Add Component
2 ... Alter/View Component
3 ... List Components

4 ... New Job Costing
5 ... Alter/View Costing
6 ... Estimate/Quotation

S ... Status Report
E ... Exit
    
```

Figure I: Job estimating menu

that will eventually be added together to determine the total cost of completing the job.

The status report tells you how much space you have for adding further components or job lines. I found it curious that the product only ever allows 500. Perhaps the fact that it works the files in drive M, so as to keep the system as fast as possible, and does not make use of drive B on a PCW8512 is the reason. It would have been easy to make the program detect a larger capacity disc or a further 256k of memory.

The reason I find this important is that even though 500 cost components is adequate for the average small workshop, builder or bureau, 500 job lines may not be.

A foundation of accurate estimating,

**Chas Greene
looks over
Cornix's Job
Estimating and
Product Costing
systems**



Component type: CON=Consultancy time			
Description	Sell	Cost	Per
System consultancy	20.00	0.00	hour
Programming time	150.00	0.00	day
Systems design	175.00	0.00	day
Systems analysis	100.00	0.00	half day
Training	75.00	0.00	half day
Document production	125.00	0.00	day
Component type: MIC=Microcomputer			
Description	Sell	Cost	Per
Amstrad PC1512 HD20 col.	899.00	750.00	each
Amstrad PCW8512	499.00	425.00	each
Amstrad PC1512 FD2 b/w	499.00	425.00	each
Olivetti M28 FD40	4500.00	3600.00	each
Olivetti M24 FD20	2700.00	2150.00	each
Component type: PER=Peripherals			
Description	Sell	Cost	Per
Star NC10 DM printer	245.00	245.00	each
Toshiba DM/DW dual print	599.00	475.00	each
20 mbyte streamer tape	899.00	720.00	each
Networking ports	125.00	100.00	each
Component type: ADD=Additional items			
Description	Sell	Cost	Per
Data cable 3 metre	17.50	12.50	each
Ribbon	5.00	5.00	each
Component type: SOF=Software			
Description	Sell	Cost	Per
All in one package	299.00	240.00	each
System generator	199.00	160.00	each
Basic compiler	149.00	120.00	each
Networking Dos	399.00	320.00	each

Figure II: Components which may be incorporated in an estimate/quotation

wishing to stop the whole program falling over or a job estimate becoming nonsense through the erasure of some of its elements, but protecting the software in such a crude way, when there are only 500 elements in the first place, is frankly not

good enough. The idea that you amend an obsolete component to a dummy record or overwrite it with a new one seems odd.

After calculating the total cost, the final stage is to print out a quote/es-

timate for the client. If you do not use pre-printed stationery you can add letter headings thereby giving a presentation which is simple but professional.

Turning to the Product Costing package, I wondered which system was a re-write of the other. Or which spawned which.

The opening menus are virtually identical, the essential differences between them being that Job Estimating produces Tender documents while the latter does not, and Product Costing can work in thousandths of a pence.

This accuracy is vital. Let us assume that you were producing cheap ballpoint pens. The cost of the plastic in each cap would be tiny. Nevertheless if you produce 50,000, with a price to the wholesaler of 5.25p, then even a .025 pence discrepancy could make considerable inroads in to your profit.

In my example, Figure IV, I have worked in units of 1,000 pens so as to reduce further the likelihood of error.

The 500 component maximum is unlikely to be a limitation in Product Costing, but again I feel a constraint of 500 cost lines on the product file could be a problem for organisations costing what is fundamentally the same product, but in a number of variants.

In other words, our ballpoint manufacturer could make what are basically identical pens with 12 different colour inks. If they also make them in fine, medium and broad points, then what started as a 25-line costing for a single pen would become 900 lines by the time every variant is defined.

Even if they only made half a dozen different style pens selling in the shops for 10 to 40p, 5,000 lines would be needed. The only way round this limitation is to hold a basic pen's details and revise it as and when required for each particular variant.

Set against this moan is the delightful implementation of the vital feature that when a component's price changes, such as through an hourly wage-rate increase, an automatic re-calculation of all products in which it is incorporated can be carried out and the effect on the profit margin instantly assessed.

With two such similar systems, the obvious question is, "Which applies to your organisation?" The simple answer is that if your work involves you in specials or many one-off tasks, each of which must be individually priced, then you need Job Estimating.

Alternatively, if your organisation works a production line or batch operation, where the same item is produced to fulfil a variety of different orders, then you need Product Costing.

Despite all the provisos, both are packages worthy of serious consideration. Simplicity is not a fault and certainly has the merit that such programs are likely to be well used, rather than fester, forgotten and unloved, in some box.

Nevertheless nothing would please me more than to be able to report that Cornix had released a Mark 2 version

Job reference: Starter warehouse system			
Quantity	Units	Description	
2	each	Amstrad PC1512 FD2 b/w	● 499.00 = 998.00
1	each	Amstrad PC1512 HD20 col.	● 899.00 = 899.00
1	each	Star NC10 DM printer	● 245.00 = 245.00
3	each	Networking ports	● 125.00 = 375.00
4	each	Data cable 3 metre	● 17.50 = 70.00
5	half day	Training	● 75.00 = 375.00
1	each	All in one package	● 299.00 = 299.00
10	hour	System consultancy	● 20.00 = 200.00
3	half day	Systems analysis	● 100.00 = 300.00
2	day	Systems design	● 175.00 = 350.00
4	day	Programming time	● 150.00 = 600.00
		Calculated total	4711.00
		Cost price	2435.00
		Profit on calculated total	2276.00
		Logged selling price	4850.00
		Profit on logged selling price	2415.00

Figure III: A finished estimation

Product reference: Cosmos pen red per 1,000			
	Units	Description	
5.700	grams	Clear polystyrene pellet	• 0.065 = 0.371
2.100	mlitre	Plastics dye - red	• 1.350 = 2.835
18.300	grams	Clear polyethylene pellet	• 0.070 = 1.281
0.190	hour	End cap moulding	• 0.120 = 0.023
0.240	hour	Cover cap moulding	• 0.310 = 0.074
0.700	hour	Polystyrene mixing	• 0.340 = 0.238
0.530	hour	Polyethylene mixing	• 0.280 = 0.148
0.240	hour	Barrel extrusion	• 0.260 = 0.062
1.210	hour	Nozzle finishing	• 0.510 = 0.617
0.830	hour	Nozzle assembly	• 0.640 = 0.531
1.000	1000	Brass nozzle blanks	• 0.280 = 0.280
0.085	litre	Clear ink base	• 0.182 = 0.015
0.620	hour	Ink mixing	• 0.830 = 0.515
0.240	hour	Ink filling	• 0.230 = 0.055
2.300	hour	Ink tube assembly	• 0.460 = 1.058
0.700	hour	Extrusion operator	• 2.850 = 1.995
0.430	hour	Mould operator	• 2.850 = 1.226
0.800	hour	Ink stuffer	• 3.100 = 2.480
1.210	hour	Blank finisher	• 2.650 = 3.207
1.850	hour	Plastics mixer	• 3.600 = 6.660
0.870	hour	Blank finisher	• 2.650 = 2.306
1.000	hour	Final assembly	• 0.040 = 0.040
1.000	hour	Final testing	• 0.380 = 0.380
4.300	hour	Assembler	• 1.850 = 7.955
2.000	hour	Packer	• 1.700 = 3.400
		Latest cost price	37.75
		Latest selling price	50.21
		Profit on selling price	12.46
		Margin on selling price	24.82 %

incorporating the following features:
 ● Full use of the PCW8512 so that more cost lines are available and hence more jobs could be held.

● A progress monitoring routine.
 The second would make for only slightly more complexity but would permit even better cost control.

For instance if the builder estimated 42 hours for digging foundations, and hence charged on that basis, he could also enter how many hours the task actually required and calculate this variance in financial terms.

I must stress however that I highly recommend both products, even as they stand now. The only alternative method I know of for controlling costs on a PCW is to use a large spreadsheet, and you would still lack some of the features provided.

Consequently Cornix deserve to gain very high sales in this sector, especially as both systems pass my acid test. This is that I have no doubts that during the working life of your PCW, they will pay for themselves many times over.

Products: Job Estimating (£49.95),
 Product Costing (£49.95),
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Figure IV: A ballpoint pen costed out using Job Costing

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Informal accounting..

Bookkeeper is the first of a suite of three business/accounting packages. All three – Bookkeeper, Accountant and Accountant Plus – are designed to run on the Amstrad 1512, and although each operates independently, they are upwardly compatible.

Accountant and Accountant Plus offer further accounting stages to those of the basic system contained in Bookkeeper, and will be reviewed separately in a future issue of APC.

Bookkeeper is aimed principally at the small business user or self-employed operator who will pass on records to a qualified accountant for final preparation. It is therefore restricted to an initial, straightforward stage in the preparation of final accounts, and no prior knowledge of formal accounting procedures is required.

Two or three hours spent working through the program manual leaves you with sufficient expertise to obtain initial trial balances.

Installation of the system is quick and easy whether or not a twin-floppy or hard disc/floppy machine is used. However one note of caution – the program requires a minimum number of file handles, so the CONFIG.SYS file of the operating system needs to be set to:

FILES = 18

before program installation.

Working back-up copies of the program are made using standard MSdos or

Dos Plus commands. However, when more than one trading name is used by a business – say Bloggs Cafe and Bloggs Sweets – the working copies should be made from the original program disc, one for each set of accounts, before any installation operations are carried out, leaving the original disc as delivered.

This is vital because the program requires the trading name and address to be implanted on the working disc and the accompanying ledger and file discs.

In the same vein, the matter of password protection should be mentioned. In the review copy the password was preset and listed in the installation guide. However there appears to be no way in which alternatives can be used.

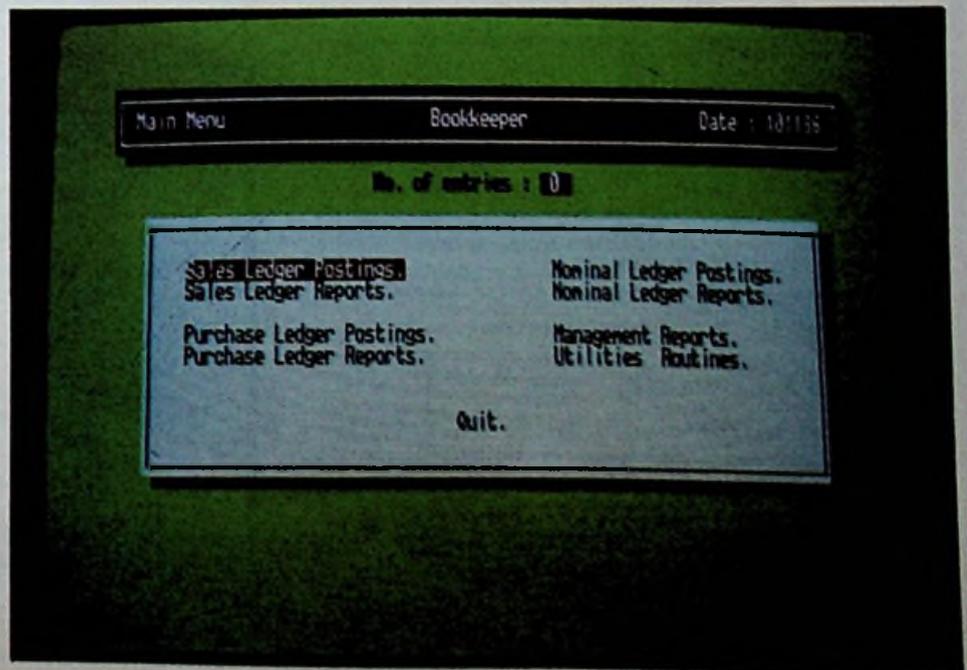
This may seem a minor point, but again it is one which could be important when using more than one set of accounts and hence more than one set of ledger discs.

Once installed, the program works smoothly with no apparent hang-ups. Screen presentation and response are clear and precise with a neat, uncluttered appearance.

The performance of the software lives up to its description as an integrated accounting package, with all ledger entries and control accounts updated automatically by a single keyboard entry.

The package also makes available a number of management control analyses apart from the normal accounting

**David Homer
looks at
Bookkeeper, the
simplest
component of
Sagesoft's PC1512
Accounting
system.**



Bookkeeper's main menu

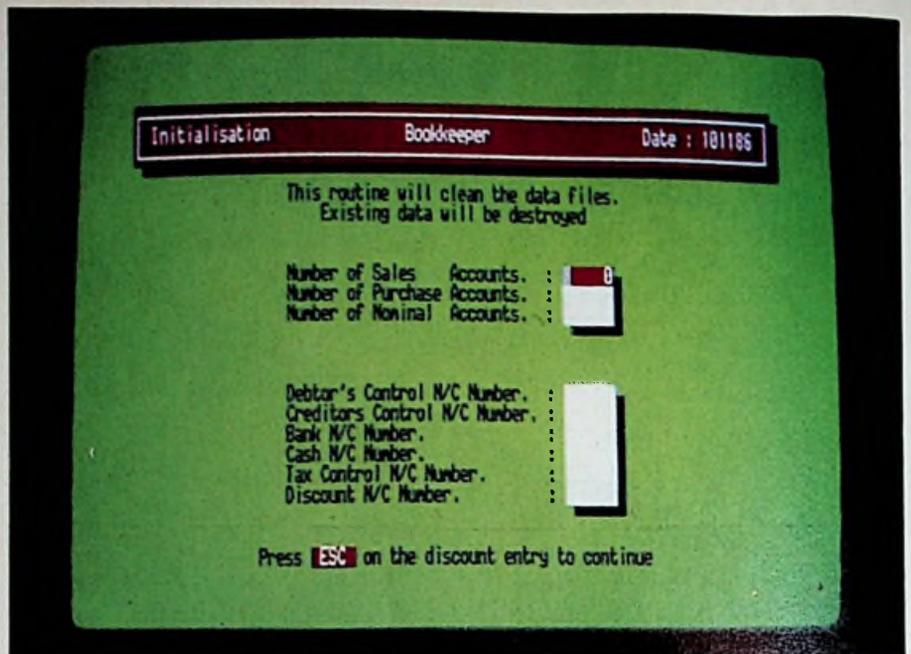
records. These include analysis by age of outstanding debtors and creditors, VAT records, and monthly profit and loss accounts.

When the initial requirements of the particular accounting system have been decided (for instance the number of sales and purchase ledgers needed) the menu-driven program is simplicity itself to operate, with adequate safeguards for correction and editing.

Menu selection and data entry are effected by the cursor keys. The only other control expected by the program is the limited use of function keys F1 to F3, which allow simple replication of the most widely used operations, for example the current date and standard VAT rate.

Perhaps the greatest advantage of Bookkeeper to the small business user lies in its ability to generate on-going summaries of critical factors, that is to say credit control, current cash situation and the level of VAT demands, all of which have important implications for cash flow problems. Such reports can be generated quickly, simply and as often as necessary via the main menu options.

Another major attraction of the package is its instruction manual, a model of brevity, clarity and structure. It contains as much about basic accounting principles as it does program information. And the simple exercise contained in the separate tutorial, when fully worked through, is as instructive and informative as the manual.



The initialisation screen

Bookkeeper has that robustness all-important to the user who sees the computer solely as a business tool, and at £99 represents excellent value to those wanting to keep up-to-the minute details of their business situation, while at the same time preparing their general accounts for formal presentation.

David Homer is an economist, who specialises in management control systems.

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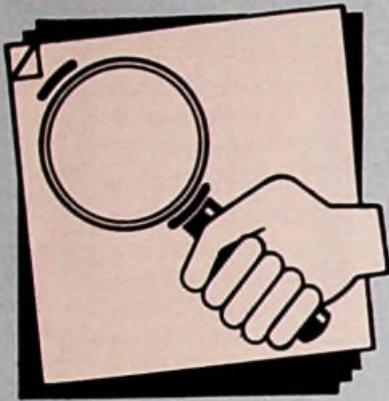
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No split speed port?



With Trans-Send you don't need one

They don't have Prestel in the United States. This would be a matter of total indifference to us except for the fact that IBM, for all its efforts to appear international, is as American as apple pie-charts.

It never occurred to the designers of the IBM PC that someone somewhere might want to send data through the serial port at a different baud rate from that used to receive. So the port on the IBM PC can't be set for split baud rates; in fact the 8251 chip used by IBM just doesn't have the facility.

Again you might respond, "So what?". Well, close compatibles like the PC1512 use the same chip as IBM. That's how you stay compatible. Unfortunately that compatibility gives us Europeans trouble when we try to access split speed systems like Prestel.

And it isn't just the Brits who are affected: Prestel-type viewdata services are in use all over the continent.

There is a standard way round the problem - buy a modem with a speed buffer. These modems take over the responsibility of setting the transmit and receive speeds (as well as the tones), and are able to communicate with computers at a different speed from that used down the phone line to the remote system.

Mostly this works well, though there can be problems with handshaking

between the computer and modem (as detailed last month in *APC*) when the computer is sending data faster than the modem can pass it on.

Buffered modems are also expensive and you may not want to splash out on one if, like me, you already have one of the cheaper varieties.

A different solution

Trans-Send is a communications program written in Britain that does most of the things a comms program should, including one that most others don't do: it can force your PC to behave as if it had a split speed port.

Obviously this is a dodge, as we have already said that no way will the serial port chip support split speeds - but it does work. The program takes advantage of the fact that Prestel and other viewdata services don't expect you to send many characters, at least nothing like as many as you receive.

So normally the program keeps the port speed set to 1200 baud to receive information sent to you. But when you press a key, it swiftly instructs the port to change to 75 baud, sends the character and just as swiftly switches the port back to 1200 baud to catch Prestel's reply.

This switching is fairly fast because the program is written in assembly language. The instructions are sent

Iolo Davidson reports on a solution to the split speed comms problem on the Amstrad PC1512



directly to the port without going through the system's Dos or Bios routines.

This last point may also explain how the program can set the port to 75 baud at all, given that this speed is not sett-able using the Dos utility software.

Despite the rapid switching, you have to type slowly so that the program has a chance to switch to receive after sending each character. Otherwise it will stay in the send speed between characters, making it blind to Prestel's echoes and the characters you type will not appear on the screen.

This is not normally a significant problem because you can swim around Prestel quite happily with single-keypress menu selections, but you need to take care when filling in a response frame.

The author of the program recommends that you use speed buffering if your modem has it, but if it doesn't you can at least get by.

Trans-Send — the review

The Trans-Send package comes as two discs and a photocopied manual in a loose-leaf ring binder. Only one disc is needed for operation, the other is supplied because some form of copy protection is used, making it difficult to produce your own back-up copies.

I don't like protected programs, but Messiter Software will replace any original disc that gets damaged and you have the spare to use while you wait. An important part of the package, therefore, is the telephone number of Messiter Software, printed as the last item in the trouble shooting checklist.

There are five modes of operation:

Command mode: Is used to connect two computers together via a null-modem cable without involving tele-phones or modems.

The mode expects Trans-Send to be running on both computers, so it is of no use if your other computer is an 8 bit CP/M machine. You can use the Terminal mode to do much the same thing though, with the second computer using other comms software.

Terminal mode: Is used for scrolling-text communications, like Telecom Gold. Files can be transferred as text (Ascii) or using the Xmodem protocols that have become the standard for downloading from most bulletin boards (Kermit is not available). You can also save the whole of a terminal mode comms session to disc.

Autodial is supported, if your modem has it, using Hayes or Dacomm control sequences. It is also possible to define the autodial controls if necessary, but the old type WS2000 autodial add-on board is not controllable in this way.

Viewdata mode: Prestel is just one of the viewdata services that can be accessed in this mode. They are configured to send pages of text and colour graphics rather than scrolling text.

On an IBM PC with a colour graphics

adapter (CGA) card, only four colours are possible at a time, while viewdata sends eight.

So the IBM version of Trans-Send (which runs perfectly well on the Amstrad PC) converts the colours to suit, sometimes making things invisible by converting text and background to the same colour.

However, by the time you read this the dedicated Amstrad PC version will be ready, giving the full range of colour as transmitted — and that's the one you should get.

There is another reason for not buying the standard IBM version. The split speed dodge described above is sensitive to the computer clock speed and the Amstrad runs much faster than the true IBM. So make sure you specify and receive the Amstrad PC package if you decide to buy.

Viewdata pages can be displayed in full or split screen modes. When the screen is split, one half can be the menu of program commands, or you can move a viewdata page there temporarily while you access another.

Pages can be saved to disc or sent to the printer but there seems to be no facility for downloading software. I expect that the software available from Prestel's Micronet pages, and others, is unlikely to include anything for PCs anyway (it was all BBC, Spectrum and C64 when last I looked), but it would be nice to have the option in case some does appear.

Word Editor mode: Is not quite a word processor, but a simple editor for preparing text files offline for transmission later. You can use your word processor instead, if you wish, but it is very handy to have an editor available at the touch of a key.

This one is easy to use, with a help screen visible at all times, and much better than the RPED or Edlin utilities which come with the PC1512.

Configuration mode: Is used to set the serial port parameters to suit your modem. Once you have set the parameters (baud rate, number of data bits and stop bits, parity and autodial type) they are saved in a disc file and become the default next time you use the program.

Alternative ways to change the port settings are to use a command file or an Instant Function menu selection (see below), which do not change the default file on disc.

The port settings are not transmitted as Hayes-compatible control sequences to the modem when you set them but you can set up a command file or menu to do this, or just enter them in Terminal mode.

Command files and customisation

A Trans-Send command file is a list of instructions in a disc file that the program will execute as if you were typing them in.

You can create your own custom files

— the program is capable of waiting until a given time, calling up Telecom Gold, logging on, downloading all your mail, sending someone a message composed earlier and logging off again.

And that's all while you sleep, providing your modem will do the dialing — and, very important, hang up at the end.

Command files can be created using the editor and the manual has complete instructions and useful examples, but you couldn't describe the process as simple. It is almost the equivalent of a programming language.

The keystrokes used in command files are the same as you use to drive the program manually though, so you can just copy down what you normally do to log on or whatever and turn it into a command file.

The Instant Menu feature allows you to create a menu of functions which can be accessed with a keystroke. In effect it is a list of command files which can be got at easily.

As before, you can create or edit the menu in Word Editor mode, but there is already an Instant Function menu supplied on disc which does useful things like setting up baud rates and so forth for the common types of dial-up service.

Hard disc support

The distribution disc comes with a program that installs Trans-Send on a hard disc. You can only do this once (protection again), but there is a de-install program which will remove the program back to a floppy, from where it can be re-installed on another hard disc.

A last word

This is not the simplest comms program I have ever used. However, as the manual says, flexibility and complexity tend to go together.

It is just a pity that more file transfer protocols are not provided. I know people who use Kermit and Com-puter B, and several others exist.

It might be wise to make sure the service you want to use doesn't need a protocol not supplied here. Message services like Telecom Gold are happy with ordinary Ascii text; it is only when sending or receiving executable program files that one of the special error-checking transfer protocols is needed.

What clinches Trans-Send for me is its ability to run the serial port at split speeds. But then, I'm just a sorehead stuck with last year's wondermodem.

Anyone selling this year's £600 hyper-duper models will tell you I'm a cheapskate with a chip on his shoulder.

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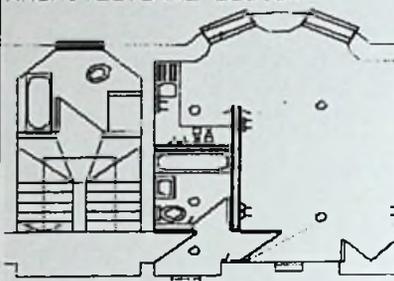
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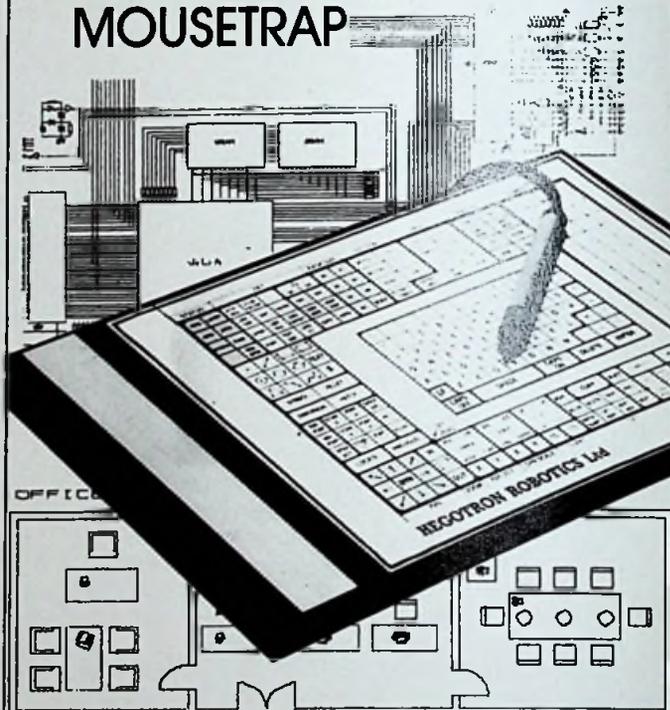
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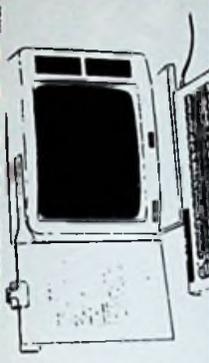
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SPECIAL

History in the making

The first thing to know about IBM (International Business Machines Corporation) is that it is not called Big Blue for nothing. It dwarfs most other computer companies, having over 400,000 employees world wide, more than 100,000 suppliers and assets in excess of the unimaginable sum of \$50 billion.

The PC is of course only a cog in the giant IBM wheel, but it has steadily grown in importance since its creation. And it has had a huge impact, not only on sales of personal computers but also on their design and performance.

The PC was unveiled in the United States early in 1982 but it was not until March 1983 that it was officially launched in the UK. However, machines were available here long before that, almost on the black market – early-bird owners even had to face the dangers of unapproved power supply converters.

A PC with 64k of ram and dual 160k floppy drives then cost around £2500, slightly more than the other 16 bit machine of the time selling in quantity in this country, the Sirius 1. The Sirius offered reliability and hardware dealer support equal to that of IBM, and specifications superior to those of the PC – a minimum 128k of ram, 600k 80 track drives and a crisp green-screen display superb even by today's standards.

Cautious approach

In other words, things began as they were to continue. The PC sold on IBM's solid quality brand name while lagging behind the competition in technical specifications.

Aloof as Rolls Royce, it sanctified innovations pioneered by competitors only after a fitting time had elapsed. And then only after the most careful scrutiny of the technical quality of the innovation and of the strength of the market demands often created by the very same competitors.

Some people would maintain that IBM's cautious attitude has held back technological progress in the field of micros. However, others would argue that it has stabilised the market, preventing it from moving too quickly for the consumer to cope and providing the standardisation so badly needed.

By the time the IBM PC had been launched in Britain, scores of software packages were already available for it in the States. Dealers in this country were soon vying with each other to be

the first to import the latest PC packages, which included now famous names such as Multiplan, VisiCalc, Lotus 1-2-3, WordStar, dBase II and III, and Framework.

The race was on to produce increasingly sophisticated software for what was clearly promising to become the industry-standard 16 bit machine.

I well remember Boxing Day 1983, when I sat in front of a newly acquired Sirius (which had practically bankrupted my department), admiring a graphics demonstration program but also cursing ACT (the distributors) for not providing the range of programming tools already available to IBM PC owners.

Battle over

Thus it was the enormous amount of software of all varieties produced for the PC right from the start which ensured that it was destined to go from strength to strength. By mid-1984, the fight for standards between IBM and manufacturers of other personal computers was in reality over.

It has to be said that a few manufacturers (Apple is the obvious example) are to this day still battling valiantly against what have for some time seemed impossible odds.

But IBM standards will no doubt maintain their dominance in the market place. The competition is faced with a vicious circle, given the inextricably linked facts that the PC's already gigantic software base is continually growing and that the machine has been accepted as the industry norm.

Many manufacturers have started out by vowing never to paralyse themselves by making their machines conform to the PC standard, but in the end they have nearly all been obliged to fall into step.

Even ACT, after years of battling to establish its own norms, was forced to turn Blue, as they say, with a version of the Apricot Xen designed to run PC software, rather than face commercial death. Amstrad's entry into the market must surely have put the final nail in dissenters' coffins.

As the PC was buttoning up the market between 1983 and 1985, hardware prices were generally falling. But until very recently IBM's cuts did not keep pace with those of other manufacturers.

The most dramatic slashes have been

Gabriel Jacobs looks at the history of the machine which has set all the standards – the IBM PC

seen not in the PC itself, but in add-ons and compatible machines (sometimes called look-alikes, work-alikes or clones).

To get an idea of the fall in these prices, consider that when the PC first appeared you had to pay around £500 for a 256k ram expansion board. By the end of 1984 it could be bought for about £250.

The official IBM 256k board today costs £100 and you can pick up a compatible 512k board for under £50.

The absolute base-level IBM PC has changed little since it first appeared, and by modern standards is therefore a pretty underpowered machine. It still comes with only 64k of ram (the smallest internal memory of any 16 bit machine on the market), one 360k floppy disc drive and a monochrome monitor.

But few people own such a rudimentary model. Most of the advanced PC software packages require at least 128k of ram and some will run properly only with dual drives and 640k of ram.

So the most common entry-level IBM PC is a 256k version with twin 360k drives and a monochrome display. At the time of writing the recommended price of this configuration is £1,988. But it is possible to buy it for as little as about £1,200 – or for as much as twice that amount, depending on the kind of dealer support accompanying it.

Compare that (even at the lowest discount level) with the price of an equivalent Amstrad PC 1512 which has 512k of ram and full monochrome graphics to boot. The IBM PC is set to drop dramatically in price very shortly (perhaps by the time this article appears) but it is doubtful whether it will come anywhere near the price level of the Amstrad PC.

IBM PC users generally voice even more brand loyalty than users of other personal computers – they have to justify the expense somehow. Yet no doubt they accept in their heart of hearts that in performance and value for money their machine does not at present measure up to the competition, cloned or not.

It is relatively slow and the monochrome screen display is far from impressive when compared to machines in the same price bracket. And where Amstrad includes as standard a number of features which IBM call optional extras, as well as bundling in free software, the IBM PC arrives on your desk as naked as the day it was born.

Well, not quite. You can at least boot up PCdos Version 2.1, the operating system. Because it is supplied free with the machine, this has become the most widely used 16 bit system. It is often known simply as Dos, a compliment if you think about it.

The main operating systems in use on the IBM PC besides PCdos are CP/M-86 and Unix. There is also a range of front-end managers (otherwise known as turnkey shells) to shield you from the operating system

itself, such as the Gem Desktop supplied free with the Amstrad PC. Of course these have to be bought if you plump for the IBM PC itself or the majority of the other compatibles.

PCdos is a version of MSdos (Microsoft Disc Operating System). Many people consider it superior to what used to be its serious rival, Digital Research's CP/M-86.

CP/M-86 is still alive, and Dos Plus on the Amstrad PC is a revamped version of it. But Microsoft's great coup in getting MSdos, with one or two small modifications, adopted as the official IBM PC operating system, secured its future and left Digital Research gasping for breath.

In a sense, Amstrad had no alternative but to provide MSdos with the PC 1512. Without it the machine could not have been called compatible. But the fact that Dos Plus and two Gem packages have been bundled with the machine says something both about Digital Research's willingness to fight back, and its view of the prospects of Amstrad's new but rapidly growing baby.

Unix is a very powerful multi-user multi-tasking system with a vast range of utilities, developed for use on minis and mainframes. IBM has adopted a version called Xenix for its PC and there are several levels of implementation.

Limitations

For these and other operating systems, one new software package written for the IBM PC appears every day on average. The most common practice in the world of 16 bit software is to write first for the PC, then to configure the program for other machines if possible.

Indeed, many software firms have felt the same kind of annoyance as their hardware counterparts, grumbling that their imagination and skill are constantly hindered by the limitations of the comparatively backward PC. But they too have generally been obliged to come into line, the inevitable alternative being a significantly reduced market.

My own experience in software development has taught me how frustrating this situation can be – software publishing firms have seemed interested only in an IBM version of your work, however much you protest that other machines will show it off to better advantage.

Of course, with the appearance of the high-specification PC 1512 and the possibility of truly mass-market sales, it looks as if software developers will have less to grumble about from now on.

It also has to be said that the net result of the pressure applied to software developers is the virtual certainty that if a program is available for a micro, someone somewhere will have produced it, or something similar, for the IBM PC.

The only exception to this is in the

world of games for home computers. But even there you can find a wide choice of quality products written specifically for the IBM PC, from flight simulators to adventure programs.

However, the IBM PC's main attraction for software houses has been in professional applications. The range of serious software is so great that it is a major undertaking these days simply to choose a word processor, spreadsheet, database, accounting package, programming language implementation or whatever.

And most of this software runs perfectly on the Amstrad PC, which has appeared on the battlefield when the war is virtually over and the rich pickings are there for the taking.

Awesome choice

The choice of hardware accessories is just as awesome as the range of available software. Fixed and removable hard discs, plug-in-and-go printers and plotters, print buffers, memory expansions, extra ports, specialised keyboards, floor-standing enclosures ... you name it and it's available, either with the coveted seal of approval in the IBM catalogue, or much cheaper elsewhere.

But the IBM PC has had an even greater impact on the hardware market in the west. It has spawned compatibles. Some are appearing in this country even before the original was officially available.

IBM has spent what to most firms would be vast sums of money pursuing – often successfully – manufacturers whom they believe have infringed their patents and copyrights.

Compatibility

But this has not held back the tide, nor the ingenuity of engineers to produce ever more compatible compatibles which will nevertheless not bring them immediately to court. Many manufacturers exist permanently on the brink of incurring the wrath of IBM.

Amstrad, on the other hand, appears to have provoked a decision from IBM to fight back. At the time of writing, dramatic cuts are being whispered (IBM never announces things) in the IBM PC range.

But even if the semi-official rumours of Project Renegade turn out to be true, Amstrad has little to fear. It seems that the prices will still be well above those of the PC 1512 and for a less well-endowed product. Only the IBM name could sell something less powerful for more money, and how long that situation can obtain remains to be seen.

One of the results of IBM's aggression towards other clone manufacturers is that it has given rise to many different levels of so-called compatibility. As a rule of thumb, you can take the word compatible to mean one of three things, which I set out below with only the tip of my tongue in cheek.

● On its own, compatible means fairly compatible. Many of the major PC software packages will run with few problems and some hardware add-ons will work.

● Fully compatible means 90 per cent compatible. Most packages will run reasonably successfully, though some of their lesser-used features may cause difficulties. Many hardware add-ons will need no modifications.

● 100 per cent compatible means 95 per cent compatible. Most users will never know the difference, except that some programs will run faster. For example, a number of clones, including the PC 1512, have a clock running at 8 MHz instead of 4.77.

A processor running faster than that of the PC can cause problems under certain circumstances. For example, some educational software relies on precise delays in presenting material and some games depend on user reaction times.

Main offender

So until the Amstrad-specific software base overtakes that of IBM (not out of the question), there will still be needed in buying software to ensure it will run precisely as intended, or that any differences are of no material.

And certain hardware add-ons should be tested on the Amstrad itself, unless the manufacturer of the add-on specifically names it as being a suitable recipient, and even then...

One curious fact about the whole problem of incompatibility is that IBM itself is in some ways the worst offender. The PC AT (Advanced Technology) sounds as if it ought to be a PC upgrade and in some ways it is. But it uses a different processor, its own operating system (Dos 3), and is only partly compatible with the base-line machine.

Again, early in 1984 IBM launched the PC Junior. It turned out to be far less compatible with the PC than any clone, which ironically was probably the reason for its rapid demise. It was

abandoned before ever being marketed in the UK.

What is more, there are now half a dozen different versions of PCdos. And across the range of IBM personal computers, there are five different so-called standard keyboards, not to mention numerous points of incompatibility between various IBM (or IBM-supported) networks.

The American satirist Ogden Nash once declared that it doesn't matter if a husband and wife are incompatible, as long as he has the income and she's patable.

Ignoring the sexist nature of this

remark, there is probably something to be learned from it in the realm of the 16 bit personal computer. Here there has been a deceptively stable marriage between IBM with the money, sometimes bumbling its way along, and other manufacturers.

These have been producing attractive PC clones, or at least dual-standard compatibles (many no doubt secretly admired even by IBM). In the final account these flattering imitations, as with a certain type of soft drink, have actually strengthened the position of the "real thing".

Up till now the IBM PC has dominated the 16 bit market not only in its effect on standards, but in actual sales figures. The best selling clone in this country before the Amstrad PC arrived, was the Olivetti M24, which hardly made a dent in IBM's market share, despite attempts to sell it at a discount in the high street.

And dealers have been reluctant to stock very low-priced compatibles, not one of which has ever appeared in the top ten for sales figures either in Britain, Europe as a whole, or the States.

Now all this is changing with the advent of the Amstrad PC 1512, a machine which is almost certain to engulf large areas of the market-share pie chart. We are without doubt living through a minor revolution in the desktop computer industry.

BASIC IBM PC CHARACTERISTICS

Processor	Intel 8088 running at 4.77 MHz
Supplied operating system	PCdos (MSdos)
Ram	64k expandable to 640k
Drives	One or two double-sided 5.25in floppies of 360k capacity
Expansion slots	5, of which 3 are spare but required for some basic applications.
Monochrome monitor	80 columns. 25 lines. 720 x 350 pixels
Colour monitor	40 or 80 columns. 25 lines. 16 colours. 640 x 200 pixels maximum
Keyboard	83 keys, including 10 programmable function keys and 12 further function keys. Numeric pad

The IBM PC XT (Extended Technology) has a minimum of 128k ram and the system unit includes a 10 or 20Mb hard disc. The mother board differs slightly from that of the standard PC, but to all intents and purposes the XT is the same machine.

The PC AT (Advanced Technology), however, with its 20 or 30Mb hard disc, has its own operating system, Dos 3 and is really a different machine. It is about 3 times faster than the standard PC, thanks to its Intel 80286 processor. Not all software packages written for the PC will run on it.

Other versions of the PC include a portable (or rather a luggable), and a number of specialised workstations.

BASIC AMSTRAD PC1512 CHARACTERISTICS

Processor	Intel 8086 running at 8MHz
Supplied operating systems	MSdos, Dos Plus (and Gem operating environment)
Ram	512k expandable to 640k
Drives	One or two double-sided 5.25in floppies of 360k capacity
Expansion slots	3 genuinely spare
Monochrome monitor	80 columns. 25 lines. 720 x 350 pixels
Colour monitor	40 or 80 columns. 25 lines. 16 colours. 640 x 200 pixels maximum
Keyboard	As IBM PC

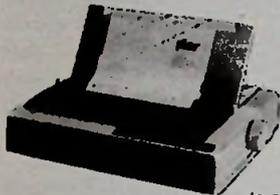
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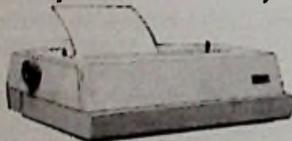
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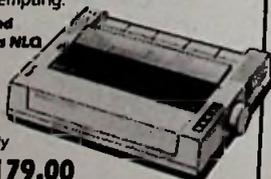
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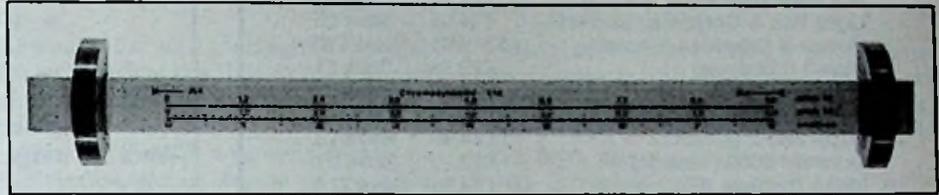


APC

REVIEW



Loading paper on your PCW



It says a great deal for the completeness and efficiency of the PCW system that it has attracted so few hardware add-ons from third-party suppliers.

The truly plug-in-and-go PCW configuration is still an enormous plus-point to the average buyer, and the only criticisms worth making are that the monitor looks as if it ought to tilt and swivel but doesn't, and that single sheets of paper can be hard to line up squarely on the printer.

It is unlikely that we shall ever see a PCW tilt and swivel base (the lack of it has never seemed to worry many people), but Chromodynamics has produced a simple, well designed device intended to rectify the second shortcoming – a single-sheet paper guide.

And when you consider how much time must be lost at home and in offices in manually lining up (almost) every sheet to be printed on the PCW, it's surprising somebody hasn't brought one out before.

The guide slots securely on to the opened lid (back plate paper tray) of the PCW printer as shown in the photograph and plastic sliders are adjusted to the size of paper being used.

After that it's simply a matter of dropping a sheet of paper between the sliders and pulling back the paper-loading knob in the normal way to start the auto-feed.

The operative word is "dropping": You have to be confident that the guide is going to do its job. If you place the paper too carefully, or fiddle with the alignment once it is in place, you may find as I did (and I assume my printer is no different to others) that the paper skews off as usual and needs adjusting when it appears at the front of the roller.

Once you get the hang of it, however – and have made sure that the sliders are perfectly positioned – the paper ends up every time more or less squarely at the bail bar. It's a good feeling.

When the page has been printed, it feeds through the gap between the guide and the printer lid and sits where it normally does, so it doesn't obstruct the next sheet dropped into the guide.

The gap between the guide and the lid is fairly narrow, but this doesn't matter because the PCW printer will not in any case allow a build-up of printed single sheets.

The paper fails to feed through the gap only if you've left it for a long time in the printer ready for printing and the heat has made it curl inwards so that it is pulled back round the roller. But the guide isn't responsible for that – you are!

The metal track is calibrated in inches and in 10 and 12 pitch scales so you can set the paper to correspond with column positions displayed in LocoScript. There are also two A4 markers on the track, though I found that setting the sliders slightly inside the suggested A4 positions gave less slack and more reliable results.

The guide is extremely well constructed of satin-finish alloy, with nylon sliders held firmly in place on the track by back-pressure. They can be adjusted without having to remove the unit, which can therefore sit forever on your printer provided you don't want to close the lid.

It can even remain in place with the tractor mechanism attached when continuous stationery is being used. There is nothing to go wrong, and it should last long enough for your grandchildren to leave it in their wills to their grandchildren.

So forget those tips about attaching two bulldog clips to your PCW printer to keep the paper straight.

The all-inclusive price of the Chromodynamics Paper Guide is £9.95, for which you can admittedly buy a lot of bulldog clips. But for your money you not only get something instantly adjustable to any size of paper, but also something permanent and good-looking to boot.

Product: Chromodynamics PCW Paper Guide

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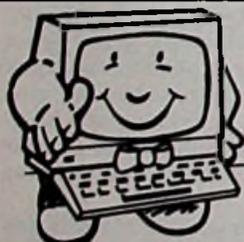
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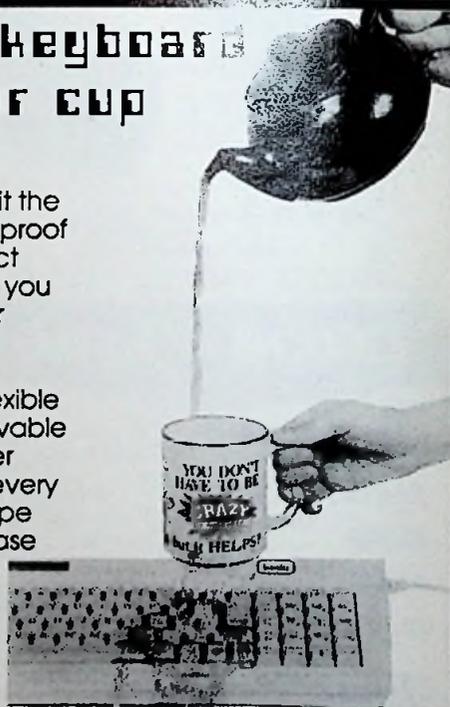
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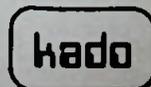


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APC

COMMENT

The foresight saga

How easy it is with hindsight to snigger at the launch of the IBM PC Junior and at the dreadful mistake it turned out to be.

The PC Junior was withdrawn by IBM before it had chance to cross the Atlantic. It sold badly in the States for a number of reasons, not least because it was less compatible with the IBM PC than most clones.

Yet IBM had presumably researched the market carefully before Junior was much more than a twinkle in its designers' eyes. It was clearly decided that some innovation was vital – hence the cordless keyboard – and that the machine should have the dual appeal of being a computer at home for executives who used a PC at work, and a home computer for their kids.

The cordless keyboard turned out to be a magnificent example of technological redundancy. People want to control their TV sets without the effort of leaving their armchairs, but they don't like trying to read text on a monitor several feet away. Nor, incidentally, do they like being unable to move their knees without sending the signal bouncing back from the wall rather than straight to the computer, and having to type everything three or four times before it actually arrives.

As for the dual appeal approach, it was dually knocked on the head: The executive wanted full compatibility, but the Junior was too weak on facilities to match up with what had by then become the standard entry-level PC (large ram, expansion cards and so on).

Despite what everybody simply knew, IBM seemed to believe that people normally bought the 64k single-floppy version and were happy with it. Perhaps they were judging solely on the sales of their own approved add-ons, while most people were actually buying cheaper third-party accessories.

As for the kids, they preferred the games which already existed on the "real thing", and which didn't run as well (or even not at all) on the Junior. They felt they had been let down.

In short, everything had seemed right about the PC Junior until it actually hit the shops. What had been missed in its design was that intangible feel for what users really wanted, something which may not always be fully revealed by market surveys.

Compare the story with that of the design and launch of the PCW. It has not enjoyed the success it deserves in the States – a fact surely due to mar-

keting errors over there rather than any faults in the machine's design or price. But over here, where Amstrad's feel for the market was clearly right, it has been phenomenally successful.

It is likely that the PC1512 will follow suit. There has recently been a rise in the overall sales of personal computers in this country and the PC1512 accounts for a large part of it.

If the trend continues, and if the PC1512 can match the market performance of its PCW counterpart, it will have brought 16 bit computing to tens of thousands of people who would normally never have given it a second thought – or at least whose second thoughts would have been more akin to nightmares.

Of course, nobody in their right mind could believe that Amstrad altruistically produces machines at the lowest possible price in order to raise the level of computer literacy in the British and European populations. But the spin-off of Amstrad's production, pricing and marketing decisions, whatever the motives behind them, does have an effect on the direction computing is taking.

Computers and other forms of information technology are today a major source of economic power and prosperity. Britain is losing its once deservedly cherished reputation in the technological world, and the consequences could be disastrous for us. Our exports of hand-made musical instruments may be rising as a result of small businesses being given governmental boosts, but that will not put us back where we should belong.

In its own way Amstrad is making us a more computer-literate society, both by selling machines in the high street and by forcing other manufacturers to reduce their prices. Commercial success may be abhorrent to some people, for whom it's somehow impure to do things for profit, and one can respect that view in the abstract; but to dismiss the beneficial side effects of the drive for financial gain and security shows a dangerous lack of foresight.

The fact that Amstrad doesn't seem to have put a foot wrong may yet be disproved in the months to come. But the signs are good. I think we can have confidence that Amstrad will not market a potential dodo like the PC Junior. I think we can have confidence in its foresight, and hopefully in the effect such foresight will have on computing in this country.

APC

*Jane Brown
looks back – not
in anger but with
20/20 hindsight*

APC

READERS' PANEL

We want to find out what our readers want. Join APC's Panel and tell us

Your last chance to join up!

As we announced last month, we feel it's time to ensure that we're covering the right things, at the right level and in the right way. To do this, we need to ask you some questions.

We could do this with regular readers' surveys, but short questionnaires can't provide us with the kind of detailed information we need in order to make day-to-day decisions about the direction the magazine should be taking. For this, we have to talk to our readers on a one-to-one basis.

So we're about to set up a Panel of selected readers whom we can call on to tell us what they think. We might telephone them with some questions if things are urgent, or send them a questionnaire now and again.

We wouldn't expect our panelists to spend time helping us for no reward. So we'll provide people selected to be

members of the panel with a year's free subscription to APC (people who already subscribe will receive their *next* subscription free).

When we've looked at all the responses we'll let you know if your application has been successful. We don't expect you to remain on the panel for ever - panel members will be changed regularly, although membership may be renewed.

We have had a gratifying response to last month's panel questionnaire, and replies are still coming in as this issue goes to press. But we want to make our selection on as wide a basis as possible, so for this first time only we're giving readers another chance.

This will be your last opportunity for a few months to help shape your magazine by being in regular direct contact with us. Fill in the questionnaire opposite and send it in as soon as possible.

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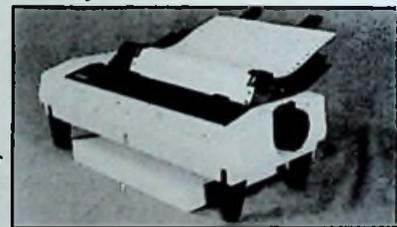
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READERS' PANEL APPLICATION FORM

When replying to these questions, please be as specific as possible.

1. So that we can contact you, please supply us with the following information. What is:

Your name?

(Mr/Mrs/Ms/Dr/Other).....

Your age?

Your occupation?

Your address?

.....

Your home phone number?

Your daytime phone number?.....

2. We would like to know about the equipment you use. So:

- A. What machine(s) and peripheral(s) do you own?

Computer(s).....

.....

Printer(s).....

.....

Modem(s).....

.....

What do you mainly use this equipment for?

.....

.....

.....

- B. What machine(s) and peripheral(s) do you have access to (at work or from friends)?

Computer(s)

.....

.....

Printer(s).....

.....

.....

Modem(s).....

.....

.....

What do you mainly use this equipment for?

.....

.....

.....

.....

.....

3. What type of article/review do you find *most* interesting in a computer magazine? Please supply as much detail as you can.

.....

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.....

4. What type of article/review do you find *least* interesting in a computer magazine? Please supply as much detail as you can.

.....

.....

.....

.....

5. Which computer magazines do you read regularly?

.....

.....

.....

.....

.....

6. Finally, we've been asking you a lot of questions – have you anything you would like to tell us that we haven't covered?

.....

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Thank you for answering our questions and for applying to be a member of the Panel. Please return this form to:

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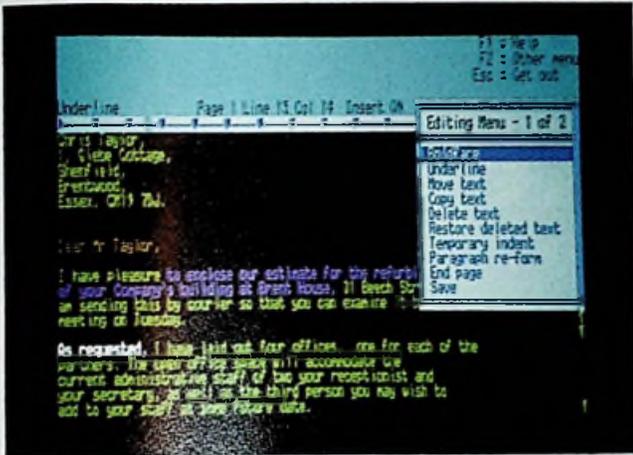
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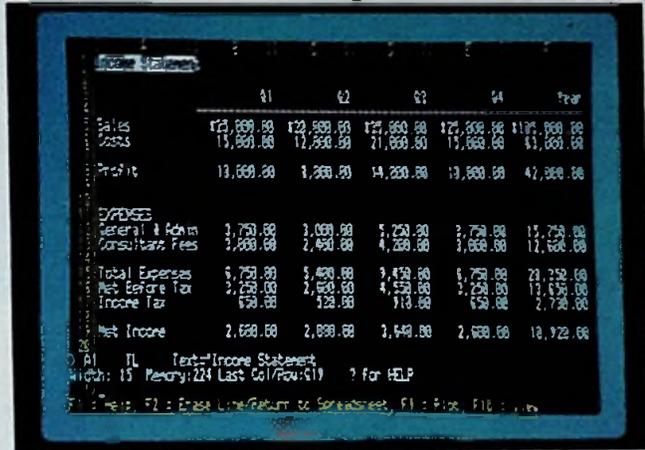
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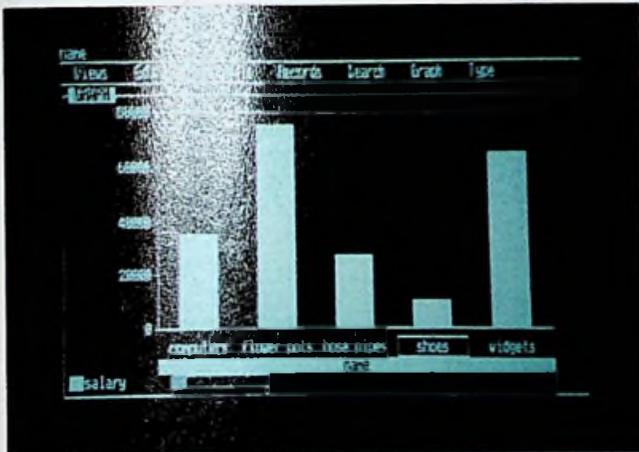
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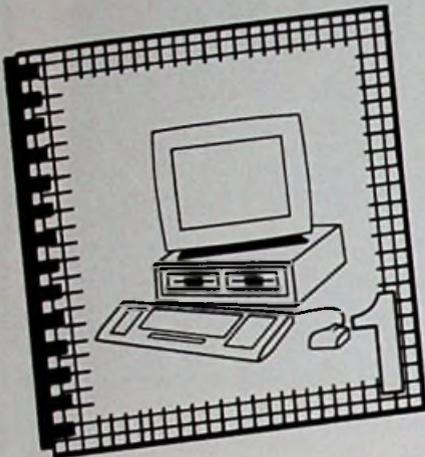
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APC

SPECIAL



Performing some tricks in the function keys department

The old sayings are the truest. And there's none truer than "opposite poles attract".

It even holds good for computer keyboards – my mainframe terminal, for example, has the Return and Break keys cuddling up together, ready to catch an unwary finger and destroy half an hour's work.

On the BBC Micro, the Delete and Copy keys keep close company with the Return key. Three in this case (to use another old saying) really is a crowd.

A couple of quirks

The PC keyboard isn't quite as error-prone, especially since it has a decent-sized Return key.

But I've found two irritating little quirks in the small file editor RPED, one of which has to do with the opposite poles problem. More of the other in a moment.

The problem is that the designers of RPED have placed the Insert Line and Delete Line functions on function keys f9 and f10 respectively. A slip of the finger and you wipe out a line of wit and wisdom instead of making space for

another one.

Wouldn't it be nice if you could re-program the function keys to avoid that little annoyance?

It can be done, using the PROMPT command from MSdos – see last month's APC for an explanation of this command.

The function keys can be altered, but you have to know that the code which references them is in AsciiZ, or "extended Ascii".

To access these numbers, you need to send a zero first followed by the required number. The codes, in decimal, are shown in Figure 1.

So, to change f10 to generate the same code as f9, and to change f7 to the equivalent of f10, enter:

```
PROMPT $e[0;68;0;67
PROMPT
PROMPT $e[0;65;0;68
PROMPT
```

The second and fourth PROMPT commands will be echoed as "ROMPT" and will reset the prompt to A>, if that's the drive you are using.

Now keys f9 and f10 both generate line insert and f7 becomes the line delete character – the key with the extended Ascii value 68 assumes the extended Ascii value of 67.

The other little matter which irritates me about RPED is the fact the right-hand Delete key does not delete to the left – it simply backspaces over text without erasing. Or that's what it used to do.

To convince the key that it is backspace and delete, you need to enter:

```
PROMPT $e[3592;3711p
PROMPT
```

The final p (which must be lower case) is necessary as we are altering the code generated by a non-function key.

For the inquisitive, 3592 is the code for Shift+left Delete (see page 493 in the Manual Book 1 – printed in hex in the table as 0E08); and 3711 (hex 0E7F) resets the key to the equivalent of Control+left Delete.

Last month we carried our first article on amendments and expansions to the Amstrad PC manual. Here Rex Last looks at what's not said about function keys and RPED

Key code	Hex	ASCII	Ctrl	Shift	Print	Key name
01	001F	ESC	ESC	ESC	ESC	ESC
02	0020	SP	SP	SP	SP	SPACE
03	0021	!	!	!	!	EXCLAMATION
04	0022	"	"	"	"	QUOTATION
05	0023	#	#	#	#	HASH
06	0024	\$	\$	\$	\$	DOLLAR
07	0025	%	%	%	%	PERCENT
08	0026	&	&	&	&	AMPERSAND
09	0027	'	'	'	'	APOSTROPHE
0A	0028	((((PARENTHESIS
0B	0029))))	PARENTHESIS
0C	002A	*	*	*	*	ASTERISK
0D	002B	+	+	+	+	PLUS
0E	002C	,	,	,	,	COMMA
0F	002D	-	-	-	-	HYPHEN
10	002E	PERIOD
11	002F	/	/	/	/	SLASH
12	0030	0	0	0	0	DIGIT 0
13	0031	1	1	1	1	DIGIT 1
14	0032	2	2	2	2	DIGIT 2
15	0033	3	3	3	3	DIGIT 3
16	0034	4	4	4	4	DIGIT 4
17	0035	5	5	5	5	DIGIT 5
18	0036	6	6	6	6	DIGIT 6
19	0037	7	7	7	7	DIGIT 7
1A	0038	8	8	8	8	DIGIT 8
1B	0039	9	9	9	9	DIGIT 9
1C	003A	:	:	:	:	DIGIT 10
1D	003B	;	;	;	;	DIGIT 11
1E	003C	<	<	<	<	DIGIT 12
1F	003D	=	=	=	=	DIGIT 13
20	003E	>	>	>	>	DIGIT 14
21	003F	?	?	?	?	DIGIT 15
22	0040	@	@	@	@	AT
23	0041	A	A	A	A	ALPHA
24	0042	B	B	B	B	BETA
25	0043	C	C	C	C	GAMMA
26	0044	D	D	D	D	DELTA
27	0045	E	E	E	E	EPSILON
28	0046	F	F	F	F	FETA
29	0047	G	G	G	G	GAMMA
2A	0048	H	H	H	H	HETA
2B	0049	I	I	I	I	THETA
2C	004A	J	J	J	J	IOTA
2D	004B	K	K	K	K	KAPPA
2E	004C	L	L	L	L	LAMDA
2F	004D	M	M	M	M	MU
30	004E	N	N	N	N	NU
31	004F	O	O	O	O	Xi
32	0050	P	P	P	P	PI
33	0051	Q	Q	Q	Q	RHO
34	0052	R	R	R	R	SI
35	0053	S	S	S	S	SIGMA
36	0054	T	T	T	T	TAU
37	0055	U	U	U	U	UPSILON
38	0056	V	V	V	V	PHI
39	0057	W	W	W	W	CHI
3A	0058	X	X	X	X	PSI
3B	0059	Y	Y	Y	Y	OMEGA
3C	005A	Z	Z	Z	Z	ZETA
3D	005B	[[[[SQUARE
3E	005C	\	\	\	\	SLASH
3F	005D]]]]	SQUARE
40	005E	^	^	^	^	CARET
41	005F	_	_	_	_	UNDERSCORE
42	0060	~	~	~	~	TILDE
43	0061					SPACE
44	0062					SPACE
45	0063					SPACE
46	0064					SPACE
47	0065					SPACE
48	0066					SPACE
49	0067					SPACE
4A	0068					SPACE
4B	0069					SPACE
4C	006A					SPACE
4D	006B					SPACE
4E	006C					SPACE
4F	006D					SPACE
50	006E					SPACE
51	006F					SPACE
52	0070					SPACE
53	0071					SPACE
54	0072					SPACE
55	0073					SPACE
56	0074					SPACE
57	0075					SPACE
58	0076					SPACE
59	0077					SPACE
5A	0078					SPACE
5B	0079					SPACE
5C	007A					SPACE
5D	007B					SPACE
5E	007C					SPACE
5F	007D					SPACE
60	007E					SPACE
61	007F					SPACE
62	0080					SPACE
63	0081					SPACE
64	0082					SPACE
65	0083					SPACE
66	0084					SPACE
67	0085					SPACE
68	0086					SPACE
69	0087					SPACE
6A	0088					SPACE
6B	0089					SPACE
6C	008A					SPACE
6D	008B					SPACE
6E	008C					SPACE
6F	008D					SPACE
70	008E					SPACE
71	008F					SPACE
72	0090					SPACE
73	0091					SPACE
74	0092					SPACE
75	0093					SPACE
76	0094					SPACE
77	0095					SPACE
78	0096					SPACE
79	0097					SPACE
7A	0098					SPACE
7B	0099					SPACE
7C	009A					SPACE
7D	009B					SPACE
7E	009C					SPACE
7F	009D					SPACE
80	009E					SPACE
81	009F					SPACE
82	00A0					SPACE
83	00A1					SPACE
84	00A2					SPACE
85	00A3					SPACE
86	00A4					SPACE
87	00A5					SPACE
88	00A6					SPACE
89	00A7					SPACE
8A	00A8					SPACE
8B	00A9					SPACE
8C	00AA					SPACE
8D	00AB					SPACE
8E	00AC					SPACE
8F	00AD					SPACE
90	00AE					SPACE
91	00AF					SPACE
92	00B0					SPACE
93	00B1					SPACE
94	00B2					SPACE
95	00B3					SPACE
96	00B4					SPACE
97	00B5					SPACE
98	00B6					SPACE
99	00B7					SPACE
9A	00B8					SPACE
9B	00B9					SPACE
9C	00BA					SPACE
9D	00BB					SPACE
9E	00BC					SPACE
9F	00BD					SPACE
A0	00BE					SPACE
A1	00BF					SPACE
A2	00C0					SPACE
A3	00C1					SPACE
A4	00C2					SPACE
A5	00C3					SPACE
A6	00C4					SPACE
A7	00C5					SPACE
A8	00C6					SPACE
A9	00C7					SPACE
AA	00C8					SPACE
AB	00C9					SPACE
AC	00CA					SPACE
AD	00CB					SPACE
AE	00CC					SPACE
AF	00CD					SPACE
B0	00CE					SPACE
B1	00CF					SPACE
B2	00D0					SPACE
B3	00D1					SPACE
B4	00D2					SPACE
B5	00D3					SPACE
B6	00D4					SPACE
B7	00D5					SPACE
B8	00D6					SPACE
B9	00D7					SPACE
BA	00D8					SPACE
BB	00D9					SPACE
BC	00DA					SPACE
BD	00DB					SPACE
BE	00DC					SPACE
BF	00DD					SPACE
C0	00DE					SPACE
C1	00DF					SPACE
C2	00E0					SPACE
C3	00E1					SPACE
C4	00E2					SPACE
C5	00E3					SPACE
C6	00E4					SPACE
C7	00E5					SPACE
C8	00E6					SPACE
C9	00E7					SPACE
CA	00E8					SPACE
CB	00E9					SPACE
CC	00EA					SPACE
CD	00EB					SPACE
CE	00EC					SPACE
CF	00ED					SPACE
D0	00EE					SPACE
D1	00EF					SPACE
D2	00F0					SPACE
D3	00F1					SPACE
D4	00F2					SPACE
D5	00F3					SPACE
D6	00F4					

e fancy nction ment

Let's tidy all this up by creating a batch file to do all the work for you every time you want to run the RPED editor, which is a very valuable tool for simple word processing despite its drawbacks.

For some reason RPED doesn't take kindly to creating files with .BAT and .EXE extensions, so the easiest thing to do is to create under RPED a new file called "fred", save it containing the following:

```
PROMPT $@0;0;67
PROMPT $@0;0;68
PROMPT $@0;0;3711p
RPED
REM Returning to
operating system...
```

Even if you like to conceal command sequences from sensitive eyes, don't be tempted to begin the batch file with ECHO OFF, because PROMPT won't work.

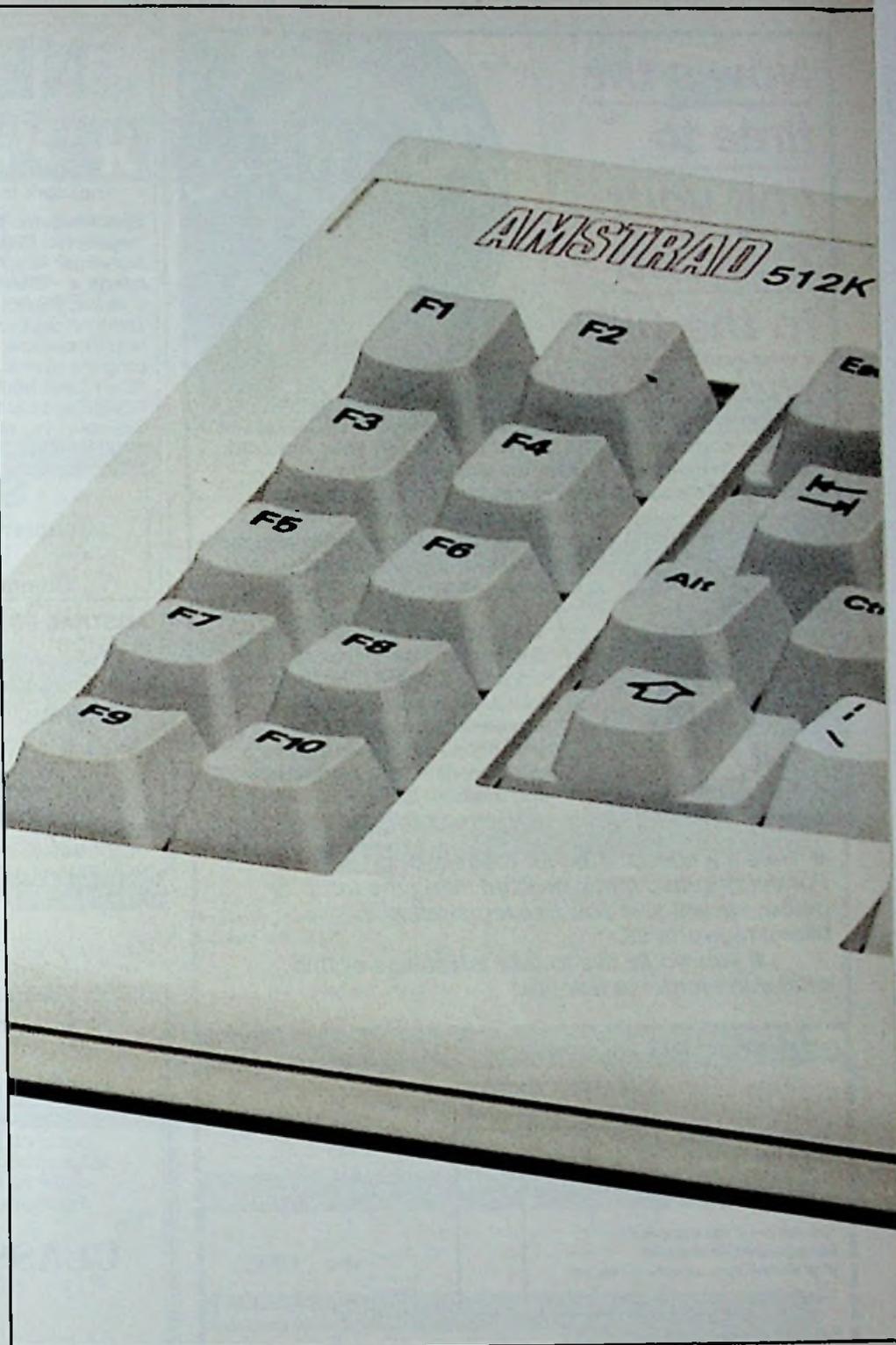
Of course you can also create RLOAD.BAT from the keyboard directly by using the command COPY CON RLOAD.BAT, followed by the above lines, and conclude by typing Control+Z and Return.

When the file is created, rename it (RENAME FRED RLOAD.BAT). All you then have to do to customise your keys and load RPED is to enter RLOAD.

Notice to quit

On the subject of RPED, as well as the keys indicated at the top of the screen Control+left arrow moves the cursor to the beginning of the line while Control+right arrow moves it to the end of the text on the current line.

However, note that to quit the editor without saving the file, it is necessary to press Control+Break rather than



just Break, as the editor states.

In addition, the Home, PgUp, PgDn and End keys function as you might expect them to do.

To print the contents of the screen, move the cursor to a blank space, press Control+P (delete the odd character that appears), then Shift+PrtSc.

Of course, the function keys can be programmed to perform all kinds of fancy tricks. Here's a hint on how you

can expand the power of your keyboard:

```
PROMPT $e{0;63;"DIR";13p
```

Function key f5 will then give you an easy directory listing. To borrow yet another old saying, there's more to a keyboard than meets the eye.

But a final word of warning: If you reset keys on the keyboard, be prepared for side-effects, such as disabling certain functions under RPED.

I tried to be super-clever and customise the Return key. This resulted in the inevitable staring match between me and the screen, which I predictably lost.

f1 to f10	have the values	59-68
f11 to f20 (Shift + key)	have the values	84-93
f21 to f30 (Control + key)	have the values	94-103

Figure 1: Extended Ascii codes



APC REVIEWS

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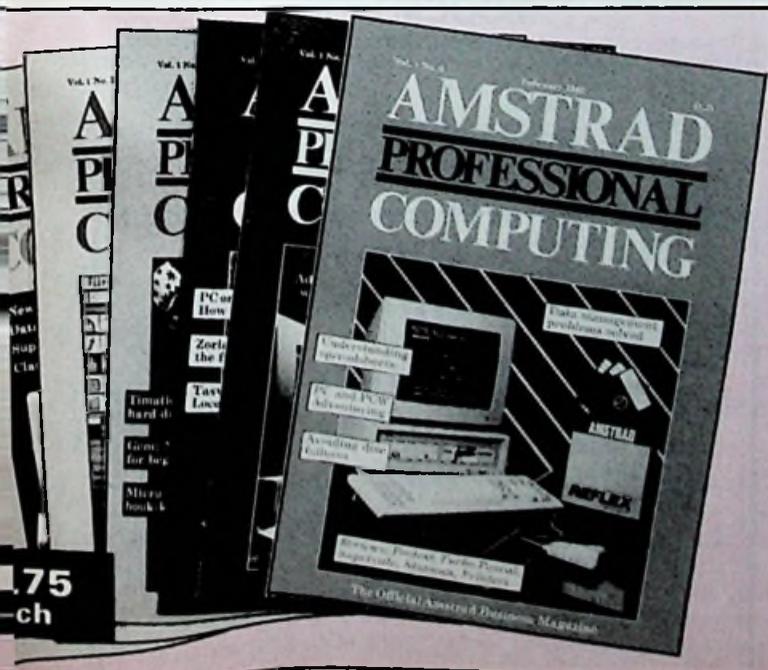
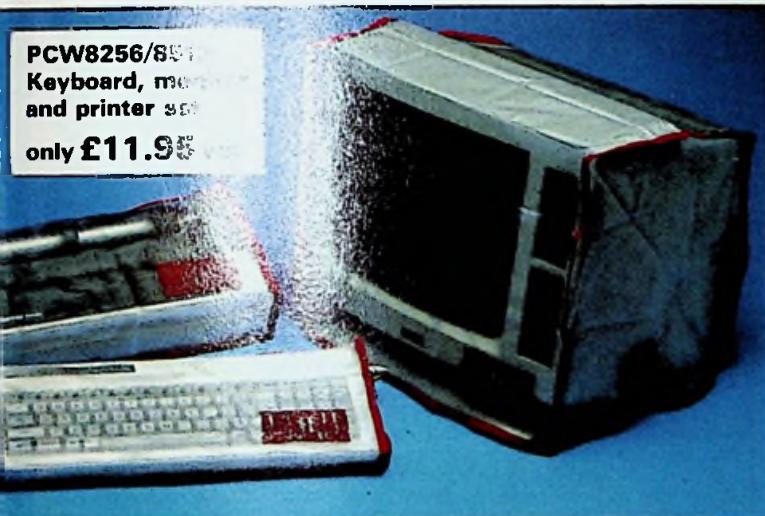
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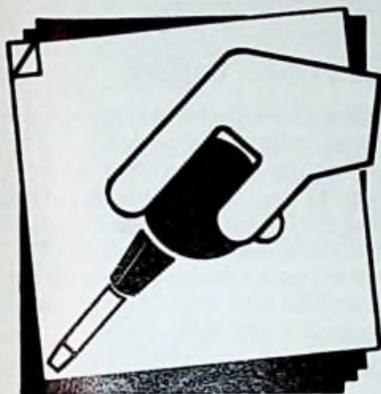


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Amstrad Professional Computing March 1987

Mixed print mode – the final words

When the plea went out for information on mixing print modes in our issue of December 1986, we were simply swamped with mail on the subject.

We are grateful to all those who wrote in with helpful suggestions, listings and printouts. Many got close to the correct solution, and some to the solution itself.

It is unfortunately impossible to publish these replies, but we would like to mention Ron Salt of Sheffield who provided us with an entire well-written and accurate article on the subject.

We would certainly have published it had it come in before our February issue went to press and the general free-for-all which the article caused.

In the February issue, a direct answer from Locomotive Software was quoted and that has generated a further batch of letters. Among them is one from Locomotive Software itself, which we hope will represent the last word on the subject.

Bit combinations

I read with interest the "official Locomotive answer" to the mixed print mode puzzle in the February issue of APC.

Unfortunately the explanation of the pitch selection by bits 2,1,0 is still not quite right, as bit 2 will not always give condensed print as you suggest.

The point is that bit 1 is ignored, and the combination of bits 2 and 0 select one of three pitches. The easiest way to explain this is to enumerate all eight combinations of the three bits as follows:

bit 2	bit 1	bit 0	
0	0	0	Pica (10 cpi)
0	0	1	Elite (12 cpi)
0	1	0	Pica (10 cpi)
0	1	1	Elite (12 cpi)
1	0	0	Condensed (17.14 cpi)
1	0	1	Elite (12 cpi)
1	1	0	Condensed (17.14 cpi)
1	1	1	Elite (12 cpi)

Tony Bush, Locomotive Software.

Setting the PC's ram disc

Can you tell me the command to set the ram disc to a particular size in an Autoexec.bat file on the PC1512?

I have searched the manual under Batch Files and Setting the Ram Disc and I have experimented with all kinds of ways of accessing Nvr.exe from a batch file. All to no avail.

All I want to do is to load a program

from an auto-boot disc with the ram disc set to 100k. Surely that must be possible as it can be done so easily under Gem?

J. Leyton, Southampton.

APC: The size of the PC's ram disc is set at boot-up not by a command in an Autoexec.bat file but by what is contained in the file Config.sys.

If you list the Config.sys file on the MSdos disc (with the TYPE command) you will see that it contains the lines:

```
files=20
buffers=5
device=randrive.sys nvr
country=044
```

The third line sets the ram disc to the number already contained in non-volatile ram (which you may have set under Gem). To set your ram disc to a particular parameter, simply substitute that parameter for the nvr statement. So to have a ram disc of 100k you would change the line to:

```
device=randrive.sys 100
```

You can do this with Rped, with a word processor which will generate a straight Ascii file, or you can create a new Config.sys file with the MSdos COPY command:

```
COPY CON CONFIG.SYS
```

terminating each line with Return and finishing with Control+Z and Return.

If you want extended screen handling facilities using standard Ansi screen control codes (your program may need them), you should also include the line:

```
device=ansi.sys
```

Listing partial files

I'm writing a report for my company and find it very tedious to keep listing on the printer the whole file time after time, especially as it's beginning to get rather long. Are there any ways round this kind of problem?

Eric Black, Dundee.

APC: You don't say either which Amstrad machine you're using or which word processor. Most word processors will allow you to print specific pages from the main file, and/or write parts of the file to disc which can be printed separately.

We should say, however, that it is good practice never to let a file get too long, since if a disc error occurs you're likely to lose that much more work. Such errors can occur on the master and backup copies – we've seen it happen.

There is a fairly simple way of getting a partial listing at the level of the

operating system, using the TYPE command either in MSdos or CPIM.

On the PC use the Dos internal command, but on the PCW use TYPE.COM with the [NOPAGE] setting - this will avoid the message "Press Return to continue" - unless you find that convenient.

Halt the screen listing just before you get to the part of the file you want by pressing Control+S (on the PCW substitute Alt for Control here and in all the following Control sequences).

Activate the printer with Control+P, then press Control+S again (Alt+Q on the PCW) to restart the listing. Control+P will switch off the printer when you have listed the part of the file you need.

If you want to list a single screenful of information, use TYPE and the appropriate Control sequences to get on to the screen the material you want, then press Control+P, followed by Shift+PrtSc on the PC, or Shift+Extra+Ptr on the PCW.

This will give you a dump of precisely what appears on the screen.

Going for another drive on the 6128

It is possible to buy an uncased 3in disc drive for about £35, and I would like to use one as a second drive for my 6128.

They require 12V and 5V power supplies. Is it safe to use the machine's

power supply without overloading it?

P.L.Hickling, Preston.

APC: The 12V and 5V supplies which come with the 6128 should be adequate for any standard drive, including 3in, 3.5in and 5.25in drives.

Gemless Basic2?

Thank you for your very helpful reply to Mr McConnell's query in the January issue of APC.

The problem had been frustrating me for some time and I had attributed it either to a two-way data switch or to a rather long cable between the PCW and the printer. Your solution works with 100 per cent success.

I am hoping you may be able to offer help with another problem - how to use Basic2 on the PC1512 (twin-disc) directly from Dos Plus or MSdos without going through the Gem Startup/Desktop procedure.

My principal use of the PC will be to write accounting programs and it would be ideal if a work disc could be created which loaded Basic2 (and offered a full size screen for programming) if inserted in drive A after the initial switch-on.

Programs and data could be stored in a separate disc in drive B if required.

Victor Moll, Maidenhead.

APC: There is no problem in having a full size editing window in Basic2 (see Part 2 of Iolo Davidson's Basic2 tutorial in this issue), nor in writing programs

and data to drive B.

But we know of no way you can run Basic2 without Gem. And since Gem eats up so much memory, we would advise you to think twice about using it to create an accounting program if your intention is to hold large amounts of data in ram.

It's swings and roundabouts. Basic2 offers you all the Gem facilities and in this out-does its competitors (it's easy to get spoiled programming in Basic2). But by the same token, it unfortunately can't stand on its own feet.

Supercalc today

Chris Laing's reply to B.Murray in the January issue on the use of the Today function in Supercalc 2 omits to mention the use of the Dattim utility included on the Supercalc distribution disc.

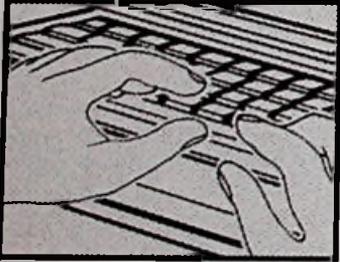
If you set up a Profile.sub to copy the Supercalc files into drive M and include Dattim in this file, for example:

```
pip m:=sc2.*[ovr]
dattim
m:
sc2
```

you will find that you are prompted to enter date and time before Supercalc is loaded. The Today function then works as expected.

See Forum for a way for us on replying to your letter

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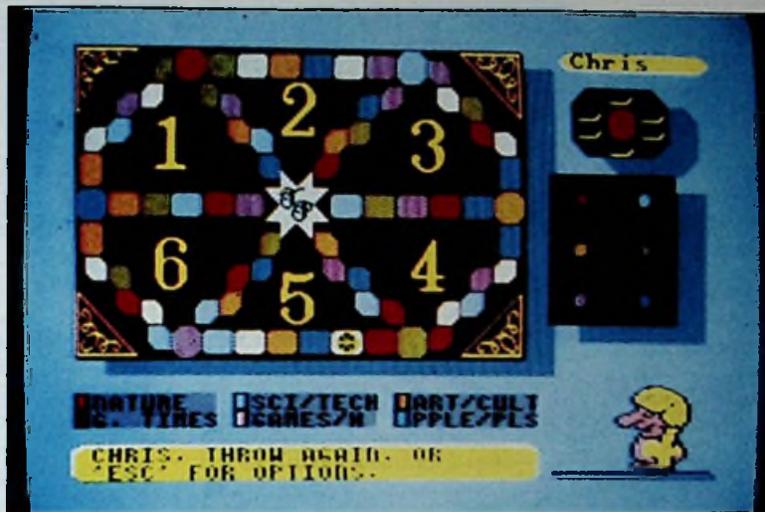

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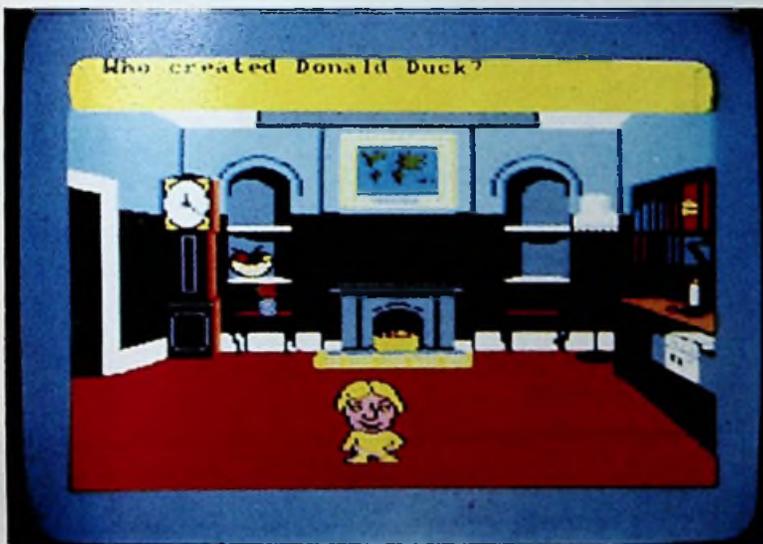


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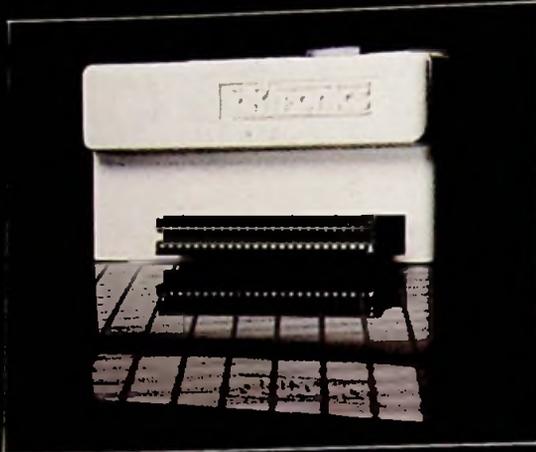
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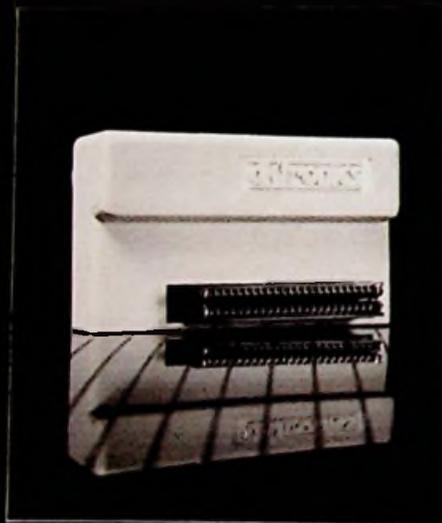
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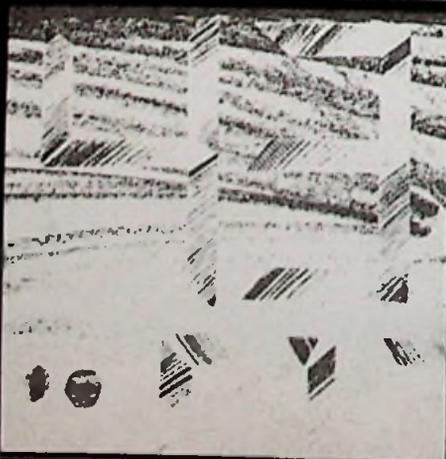
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