

THE *PC* MAG

plus
**THE
AMSTRAD
USER**

**June
1991**

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All enquiries and contacts concerning this Publication should be made in the first instance by writing to The PC Mag, 641 High Street Road, Mount Waverley, Victoria 3149, Australia. Urgent matters can be telephoned through on (03) 803 9661.

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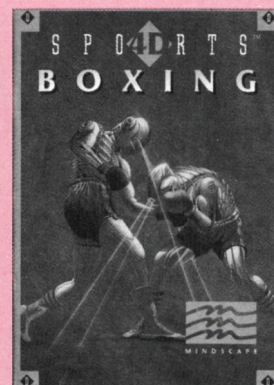
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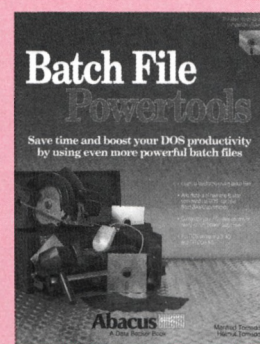
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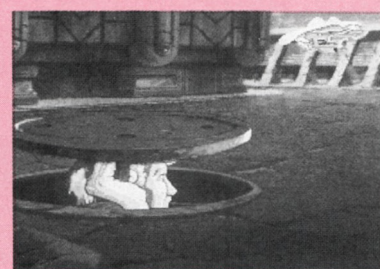
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• Front cover: 4D Sports Boxing from Mindscape. It's reviewed in Game Play on Page 17.



• One of five new books for PCs from Abacus. See Page 22.



• Screen shot from Space Quest 4, reviewed on Page 14.



• The almost indestructible Star Cursor Analog LDR-501, a PC joystick under review next month.

NEWS NEWS NEWS NEWS

The latest information for IBM PCs and compatibles

AMSTRAD INCREASES RANGE
Amstrad have recently announced three new computers to be added to their range soon.

Code-named "Shoehorn" during its development, the **Amstrad PC4386SX** features very compact dimensions (250mm x 264mm x 70mm) and an extremely high resolution 10" Sony colour or mono VGA screen. Driving it all is a 20MHz 386SX processor with a standard 4mbs of expandible RAM, 64k RAM cache, 80mbs Hard Disk

such as word processing, Excel and so on. The mono screen version is likely to cost \$3999 and the colour version \$4499.

The **Amstrad ACL 386SX** is a full colour display version of the successful ALT 386SX Laptop. The colour display features the latest in high-performance active TFT (thin film transistor) colour LCD technologies. The 256 VGA screen colours (from a palette of 24,000) remain saturated and the definition stays sharp from all viewing angles. The portable unit

screen. It has a standard 1mb of main memory, a 1.4mb floppy drive, a full-size 82-key keyboard. Power is supplied either through an internal high-capacity nickel-cadmium battery pack for about three hours stand-alone operation or an AC adaptor/charger. A PS/2 type keyboard, mouse and VGA monitor can be attached using on-board connectors. The unit will cost between \$4000 - \$5000 and should be available in June.



The new A4-sized notebook computer - Amstrad ANB 386SX

(19ms). The unit houses a 1.44mb high-density floppy drive, two 16-bit expansion slots and comes with a mouse. It will also be supplied with a new Windows 3 interface called the Amstrad Manager to give instant access to key management applications

houses a 60mb hard disk and full size keyboard and should be available in August at a price between \$8000 and \$9000.

Finally, the **Amstrad ANB 386SX** is a new A4-sized notebook computer with a 40mb hard disk and clear backlit VGA

CANON LASER IMAGING PACKAGE

Canon has announced that its entry into colour imaging connectivity will soon receive a massive boost with the launch of an instant colour desktop scanning and printing package based on its CLC-500 Colour Laser Imaging System.

The CLC-500 system will be capable of scanning up to A3 size colour illustrations from a variety of sources, including 35mm transparencies, still or conventional video and hard copy, making it a powerful tool for artists, designers or publishers. Using an Australian developed interface, the package will enable illustrations to be uploaded into a variety of personal computers (Apple Macintosh and most IBM compatibles). They can then be manipulated or combined with text or other graphic images and printed out at up to 400dpi (dots per inch) on a variety of material, including A4 or A3 plain paper. *For more details contact your state Canon office or ring Head Office on (02) 805 2000.*

NEWS NEWS NEWS NEWS

REVOLUTIONARY AUSSIE PC JOYSTICK SOON

Multicoin Australia, well known for manufacturing very robust joysticks for both arcade machines and home computers, have just announced the impending release of an equally sturdy joystick for PCs and compatibles.

The Starcursor Analog LDR 501 features a clever design feature incorporating LEDs (Light Emitting Diodes) and other "secrets" inside the unit. They replace a number of moving parts which are subject to friction and eventually wear out, and this is where the Starcursor LDR 501



will have the advantage over its

competitors.

The unit has three fire buttons, an autofire function, a 2.5 metre coil cord and comes with a twelve month warranty. It is also suitable for Apple computers. Although \$79.95 a unit, it seems the Starcursor may be a less expensive option in the long run. Watch for a review next month.

The Starcursor Analog LDR 501 is manufactured by Multicoin Australia (075) 375711, and will be available in all good computer shops or by mail order from Strategy Publications on (03) 803 9661.

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Little Squirt is a Big Hit

Canon's new Bubble Jet printer is proving a big winner. David Higgins has put it through its paces and reports.

Hands up all of those who wish they had a laser printer connected to their computer! Why does nearly everyone put their hands up? These are big, bulky and expensive pieces of equipment. Their only advantage is in print quality and speed. Of course, you say there is no alternative. Well my friends, there is now.

The Squirt is a new line-up of printers just released by Canon. The name has little to do with the size of the printer (except in the case of the BJ-10e which is very small indeed), but to the fact that they are a new breed of ink jet printers, more accurately termed Bubble Jet printers.

The BJ-10e is the smallest and cheapest of the line-up. It is an 80 column wide model suitable for standard A4 wide single sheet paper. That's right, it will not accept continuous feed paper although a multi sheet feeder is available as an optional extra.

The printer can emulate 4 other types of IBM printers, namely the

current model Proprinters and the IBM Graphics Printer. I have my Squirt attached to an Amstrad 1640DD (IBM compatible) and the Printer has few problems emulating the standard Amstrad DMP3000 printer.

The usual print pitch and character sets are offered and line pitch can be adjusted by as little as 1/360" to as much as 1/8". The quality of the standard font (courier in mode 2, courier and prestige elite in mode 1) comes from a 36 x 48 dot matrix in HQ mode or 18 x 48 in economy mode. Printing speed is slower than the average dot matrix printer, 83 characters per second at 10 characters per inch in both HQ and economy modes with bidirectional printing for text and unidirectional print for graphics.

The unit is powered by an external AC adapter (supplied) although a NiCad battery back can be used (optional extra) to allow the use of the printer on site with a portable computer. Connection to a computer is via a

standard 8 bit parallel port (cable supplied) and the unit has an input buffer of 3K with another 34K reserved for download.

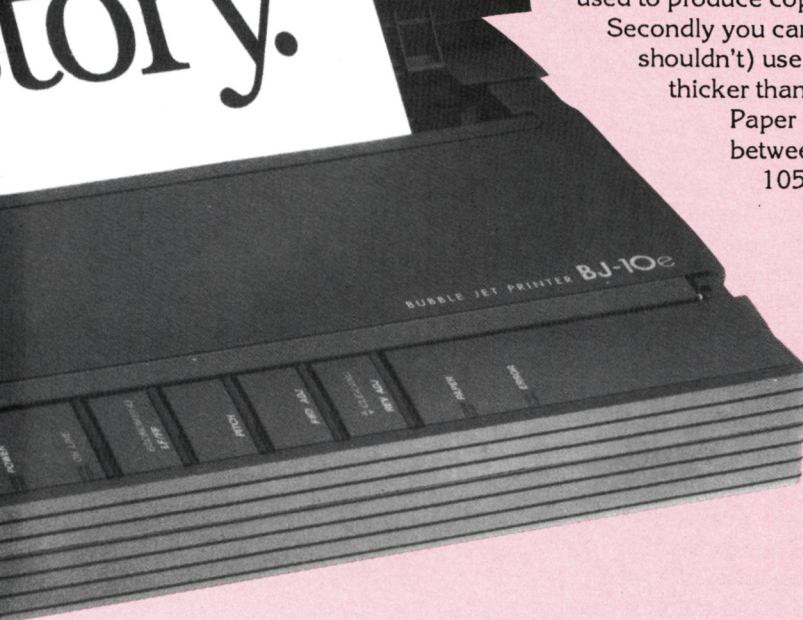
The BJ-10e measures 310mm wide x 216.5mm deep x 47.5mm high. For those still using the old



system that's about 12" x 8" x 2". The unit comes with its own case top which flips up to act as paper support/guide, a built in stand so

that the printer can be sat vertically and a bottom slot so that paper and envelopes can be fed in while it is in the vertical position. The printer has to sit in the vertical position if the optional multi sheet feeder is attached.

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was a HP Ink Jet but that was some years ago. The noise comes from what appears to be the print head initialising itself. This takes place when you connect mains power, when you switch the printer on, when you switch power off, when you load a sheet of paper and when the printer is getting ready to print. Apart from this the printer is quite silent when actually printing.

The quality of print was much better than I had expected. Both HQ and economy mode printouts were, as far as I am concerned, letter quality, equal to that of any laser printer. Mind you the quality of the print will depend on the coarseness of the paper you use. It spits ink and does not press the paper flat on impact so really coarse paper will produce really coarse print. The best paper to use would be a good quality photocopy paper but any standard or better bond will do. One more thing about the paper. You cannot use multiple sheets, i.e. ones that are normally used to produce copies.

Secondly you can't (or shouldn't) use paper thicker than 0.2mm. Paper weights of between 52 and 105 gms are

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Sample output from BJ-10e

That's enough for the specs. So what was my first impression of this printer? It was smaller than I had anticipated and a lot noisier. The last ink jet printer that I used

recommended. Maximum size of paper is B5, A4, letter and legal. When first setting up the printer I ran into a few problems trying to run the head clean and the self test modes. This was the result of not reading the manual closely enough

REVIEW

PRINTER

as there were a few buttons to press all at once and others to press within a second of pressing others. A little patience is all that is required. Fitting the print cartridge requires some care. I followed the instructions carefully and still ended up with some ink on my hands and believe me, the ink doesn't come off too easily, so don't wear your best clothes when doing this operation.

The ink cartridge itself is quite large. It has a self sealing print head to prevent the ink drying out and a self cleaning capability should any of the jets become clogged. The life of the cartridge is listed at 700,000 characters which translates to between 250 and 400 pages of text. That's not too bad but the cartridge is a little expensive, \$50.00 at present. With any luck they may introduce one that has a refill capability to reduce this cost.

Once I had the unit up and running I decided to do a trial with Wordstar. The first thing that I noticed is that of the 5 emulations listed, Wordstar contained only two drivers, IBM Proprinter and IBM Graphics printer. I tried the Pro first, as it was listed as the higher priority by the printer manual. Text was fine except, no matter how hard I tried, I could not get the printer to produce the text in HQ except after printing had commenced. Instead of fiddling

around I decided to use the Graphics Printer driver and got the results that I wanted.

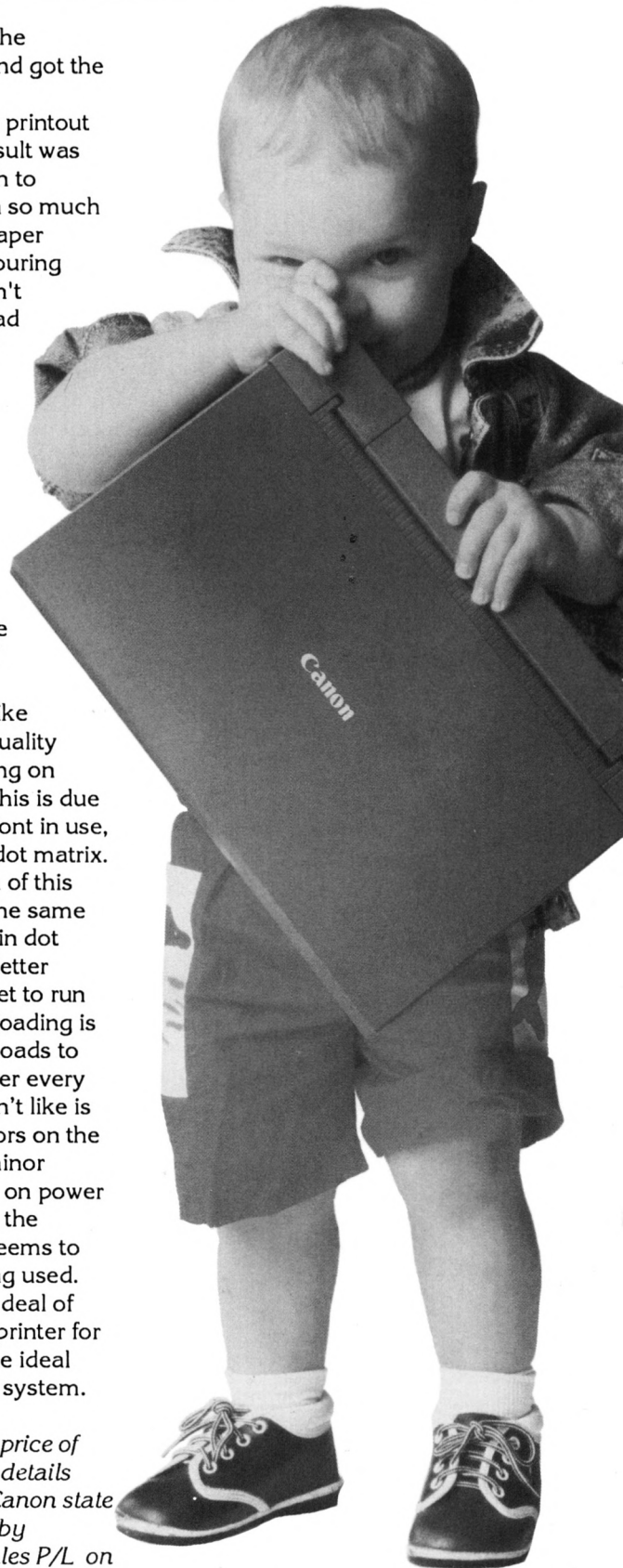
Next I tried a graphics printout from GEM Paint. The result was fine but I could not switch to economy mode and with so much ink being squirted, the paper started to pucker (like pouring water onto paper). It didn't harm the graphic but I had to leave the paper to dry for 5 minutes or so. Unfortunately the manual does not describe whether economy mode is available for graphics prints so I can't tell you if it can be adjusted.

Letter quality of the printer is available for the printer's standard text. If you use software that produces its own fonts, like Letrix for example, the quality of print will fall (depending on the design of the font). This is due to the matrix size of the font in use, usually set for a 24 pin dot matrix.

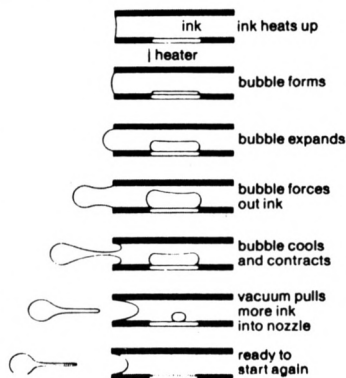
So what is my opinion of this printer? Well, for about the same cost as the average 24 pin dot matrix printer you get a letter quality printer that is quiet to run and small in size. Paper loading is a breeze and the printer loads to the same line on the paper every time. The only thing I don't like is the lack of mode indicators on the panel but this is only a minor hassle. The default mode on power up appears to be HQ but the manual doesn't say, it seems to depend on the driver being used.

Unless you do a great deal of printing or just use your printer for data processing this is the ideal printer for any computer system.

The recommended retail price of the BJ-10e is \$799. More details can be obtained from a Canon state office, a Canon dealer or by contacting TAU Micro Sales P/L on (03) 803 9211.



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Playing and Learning

A review of four new colourful educational programs from Scotland and France.

Educational software for children has improved immeasurably over the past few years. The packages provide a much more interesting way of learning than the old rote method and now, more often than not, contain stories, colourful pictures, sound, or speech, and most important, a challenge to keep the interest of the child.

The other important aspect of modern educational games is that the good ones are very often produced by, or in collaboration with, educationalists and in consequence are carefully aligned to curriculum requirements or modern teaching methods. Four products recently released by importers Pactronics are a good example of the current trend.

MIX AND MATCH (Preschool)

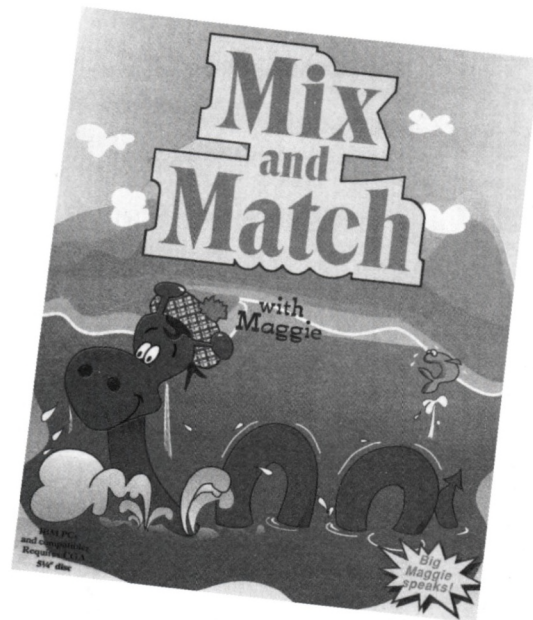
This program helps to develop essential prereading skills and teaches the young student recognition (matching shapes, letters and numbers), discrimination (differentiate

amongst similar shapes, letters and numbers), and memory (to remember accurately what has just been seen).

Whilst this particular product has no immediate relevance to a curriculum because it is primarily intended for under fives, the higher levels will no doubt help older children who are experiencing learning difficulties.

Being produced by Scetlander, a Scottish company, it is inevitable that a Loch Ness monster gets into the act. In this case it's Maggie who is responsible for adding speech to the game with words of encouragement such as "Well done". No sound cards are necessary as the digitised speech played through the internal PC speaker.

There are three games: Two of a Kind; Odd one Out; and Forget-Me-Not and all three are very simply played through by pressing either the space bar or enter. There is also a Clock and Calendar screen (linked to the internal clock and calendar of the





PC) which displays both a digital (12 or 24 hours) and analogue clock (with sweeping second hand) and the current month calendar with today's date highlighted. All the pictures are very colourful and neatly drawn.

Supplied with the product is a parent/teacher guide offering suggestions to enhance the learning process. It also gives details on how to record the student's progress or indeed up to ten different users after each game has been completed. A control screen is simply accessed by the parent/teacher and allows adjustments to suit the user.

There is no time limit to complete each game and when incorrect answers are given, on-screen assistance is offered subject to the settings in the control screen.

Supplied in 5.25" format only, is suitable for CGA, EGA or VGA screens and requires 512k. Price : \$59.95

HOORAY FOR HENRIETTA (5 - 12 years)

This product (from Scetlander) provides varied and stimulation practice in addition, subtraction, multiplication and division over a wide range of ability levels.

Exercises are linked to an absorbing storyline featuring Henrietta, Hopeless Henry and John the Parrot. Henrietta and Henry are due to marry in the morning, but John the Parrot is determined to make sure they don't. He steals the groom's clothes and kidnaps the groom himself. If Henry is not rescued, John will cover him in cold custard. Getting Henry to the church on time and suitably dressed is the challenge for Henrietta. Her success depends upon how well she does over four screens of math questions. Each screen has Henry reading a newspaper, oblivious to impending disaster as a large tub of cold

custard hovers above him. Whether giving the correct answers moves Henrietta closer to a lever or a winning line determines the fate of Henry.

Once again the parent/teacher control screen is used to adjust the problems to suit each user. Whilst the student can select one of eight levels of difficulty, the control screen can be used to adjust any level to 'low', 'medium', or 'high'. In addition, the parent/teacher can set the program to concentrate on all or any one of the math functions.

To add to the fun and introduce a little excitement, a timer can be set from very slow to very fast, the latter encouraging quick thinking. There's also a 'High Score' table for achievers to record their names.

Once again, a comprehensive results monitoring facility can be invoked to record the child's progress. These can be printed out for future reference.

Supplied in 5.25" format only, is suitable for CGA, EGA or VGA screens and requires 512k. Price : 59.95

HENRIETTA'S BOOK OF SPELLS (7 - 14 years)

This is another program from Scetlander and is designed to help with reading, spelling and familiarity with a wide range of words.

By now Henrietta and Henry have got married, but while out for a stroll, Henry stumbles upon Castle Spellalot, home of Morgana the Morbid, an evil and nasty witch. She hates happy people and so turns Henry into a miserable, fat frog. Only Henrietta can save him from a life of leaping, swimming and croaking by finding 'magic letters' to make 'magic words' to describe something in Morgana's garden.

The program consists of five exercises, each with three skill levels and a choice of words from



five to nine letters. The words are supplied from a pool of 2500, and the pool can be edited to suit individual requirements if necessary.

While there is no time limit to complete each exercise, a clock on each screen shows the actual time taken plus penalty time for clues requested.

Supplied in 5.25" format only, is suitable for CGA, EGA or VGA screens and requires 512k. The product as supplied will only load from the A: drive.

Price : \$59.95

RODY AND MASTICO

(5 - 10 years)

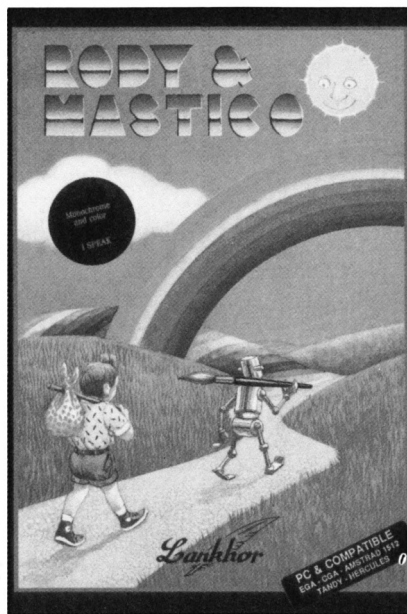
"L'étoile multicolore" a disparu, vos enfants sauront-ils aider Rody à la retrouver? Put into English, this means "the multicoloured star" has disappeared, will your children be able to help Rody find it? - and by now you would have guessed that this product is from France. It's a little different from what you would expect in an educational game and has a number of extra features to give it longevity.

The story line starts in Professor Goblino's laboratory. His chewing gum machine is not working because a vital piece of equipment (the multi-coloured star) has been stolen. His assistant (?), a young boy called Rody is charged with the responsibility of recovering the star, and Mastico the Robot will provide a deal of help throughout the adventure.

The screen is split into three sections, the lower two-thirds reserved for the main picture, and the rest of the screen for the dialogue and four icons. The icons show a picture of Mastico's head, a 'turning page' notebook, a paintbrush and a hand around an ear. All will become clear if we start the game.

Following a burst of music from the internal speaker on loading the game, the robot 'speaks' and

recites the contents of the dialogue box. His 'voice' is not dissimilar to a dalek (if you have ever seen Dr. Who on TV), and can be described as mono-inflective. Having described the situation, he will then ask a question such as "Which part of the machine does the chewing gum come from?". (Using the mouse (or keyboard), a small version of Mastico's head is moved by the player to the point in question and clicked. If right, Mastico will nod and smile, otherwise a frown with a shake of the head and message to try again will occur. If all is well, clicking on



the notepad will bring up the next screen (at the greengrocer to buy provisions) with another question to be answered. If at any time the player needs to hear the question again, then clicking on the 'hand around the ear' icon will make Mastico recite again.

Selecting the paintbrush removes all the colour from the screen and replaces the top section with a palette of paint pots, pattern fills and a printer option. As far as the child is concerned, this feature is one of the most attractive as it allows him/her to spend as much time as needed

painting the picture to his/her own specifications. It is also an excellent opportunity to learn the application of colours in their correct environment. The fills are reasonably fast and accurate and mistakes can be corrected by using a 'sponge' icon. Pressing the right mouse button gives a suggested colour if doubt exists. The customised pictures can be saved to disk for later display or printed out on a printer. When the child has finished, selecting the notepad icon will resume the adventure.

There are over a dozen screens to go through to complete the game, and if necessary, the difficulty level of questions can be increased at any stage by merely selecting a 'child with back-pack' icon.

Supplied in 5.25" format only, is suitable for CGA, EGA, VGA, Hercules or Tandy screens and requires 512k. Also suitable for Amstrad PC1512.

SUMMARY

My 10 year old children had a great time with the games, except Mix and Match which was clearly too young for them. The adrenaline was running (accompanied by much noise and excitement) when playing the Henrietta pair. Rody and Mastico, on the other hand, presented moments of thoughtful silence broken only by the music and 'talking' robot.

To parents (or teachers), these games will provide their young students with absorbing fun and at the same time exercise the grey matter which is more than can be said for non-educational arcade games.

All the above products are distributed by Pactronics (02) 748 4700 and are available from all good dealers and The PC Mag by mail order on (03) 803 9661.

PC PUBLIC DOMAIN

A selection of disks for IBM PCs or compatibles containing compilations of some of the better games and more useful utilities in the Public Domain.

PC-SOFT #1 - 19 Basic2 utilities or games on one 5.25" disk, with:

3DGRID.BAS, 3D-VIEW.BAS, ANAGRAM.BAS, ANGLES.BAS, BAS-INIT.BAT, BRAHMA.BAS, BRAHMA2.BAS, BUSES.BAS, ENIGMA.BAS, EUROQUIZ.BAS, MANDEL.BAS, MATHS.BAS, OXO.BAS, ROBOPOST.BAS, STYLISER.BAS, SUNDIAL.BAS, TENPIN.BAS, TURTLE.BAS.

Probably specific to Amstrad PC1512 or 1640 owners only as all these programs require BASIC2. A good mix of games and utilities including an educational BUSES game for young children and a Mandelbrot generator.

PC-SOFT #2 - Eight games on one 5.25" or 3.5" disk with:

3DOXO.EXE, BOUNCY.COM, DRAGONFLY.EXE, JOIN4.COM, MM.EXE, MOLECULE.EXE, RACE.COM, REVERSI.COM.

Some popular games including a clever 3-D version of Noughts and Crosses, some shoot-em-ups and versions of Othello and Connect4.

PC-SOFT #3 - Twenty-four utilities on one 5.25" or 3.5" disk with:

BEEP.COM, CAL.COM, CALENDAR.COM, CGA2.COM, CHOICE.COM, CLEANUP.COM, CLICK.COM, CLR.COM, CURSOR.COM, DELB.BAT, DOSEDIT.COM, DOSMAP.EXE, DRIVE.COM, ETIMER.EXE, FILEDATA.COM, FSORT.BAT, FULLDIR.EXE, GDEL.EXE, HDFLASH.COM, KD.COM, LOSTFILE.EXE, LYNE.EXE, MEDIT.COM, NVRSAVE.COM.

Lots of useful utilities including a typewriter simulator, a directory killer and a file finder. Also contains a utility to allow mono screen owners to run CGA graphics in shades of grey (about 60% successful).

PC-SOFT #4 - Six games on one 5.25" or 3.5" disk with:

CRIB6.EXE, GALACTIX.COM, JASON.EXE, RIMTRIX.COM, SNAKE.COM, WEASEL.COM.

More popular games including a very good version of Cribbage and a humdumming brain teaser. Some games require at least CGA.

PC-SOFT #5 - Twenty-three utilities on one 5.25" or 3.5" disk with:

PEEK.COM, POINTER.ACC, POPTIME.EXE, PRCODES.COM, PRMODE.COM, PRINTC.COM, PSTASH.COM, RENDIR.COM, SCRDMPEX.E, SEE.EXE, SET UTILITIES, SGR.COM, SIZE.EXE, TSTDATE.COM, TIMEFIX.COM, TIMEPARK.COM, TV.COM, WORDS.COM, WYH.EXE.

Lots of printer utilities in this one, including a special effects printer mode selector, plus a word counter and an automatic hard disk parker. It also contains a memory resident text screen dump to a named file.

PC-SOFT #6 - FORD DRIVING SIMULATOR: version 2 on one 3.5" or 5.25" disk

The latest edition of an excellent driving simulator from Ford of America. Offers a choice of several different events: Test Track, Slalom, Drag Strip and Grand Prix. Good 3D representation. All ages. Not suitable for mono screens.

Reviewed November 1990 - TAU.

PC-SOFT #7 - FUNNELS & BUCKETS and WP for KIDS on one 3.5" or 5.25" disk

Contains a simple word processing program for young children (with large on-screen text) plus Funnels and Buckets: a program to improve arithmetic. Suitable for Ages 8 and up.

Reviewed November 1990 - TAU.

PC-SOFT #8 - JUNIOR WORD GAMES on one 3.5" or 5.25" disk

A series of programs involving exercises with Synonyms, Sentences, Opposites, Plurals, Verbs, Jobs, Comparisons etc. It also includes a popular Wordfind game. Suitable for Ages 8 and up.

Reviewed November 1990 - TAU.

PC-SOFT #9 - EDUCATIONAL GAMES FOR KIDS - 1 on one 3.5" or 5.25" disk

Contains a series of colourful and attractive games to teach the alphabet on the keyboard, simple maths and shapes. Plus Hangman with facilities to change word file and picture of the 'victim'. Age 4 to 8

Reviewed November 1990 - TAU.

5.25" FORMAT \$10.00 each • 3.5" format \$12.50 each

Refer to Page 53 of the November 1990 issue for full details on contents of disks, and to Page 30 of this issue for details of postage charges to be added to order.

**ORDERS TO:
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Mt. Waverley, Vic 3149
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GAME PLAY

SPACE QUEST 4

HELTER SKELTER

4D SPORTS BOXING

LEXI-CROSS

VERDICTS

■ ■ ■ ■ ■	Outstanding
■ ■ ■ ■	Above average
■ ■ ■	Average
■ ■	Fair
■	Waste of money

SPACE QUEST 4

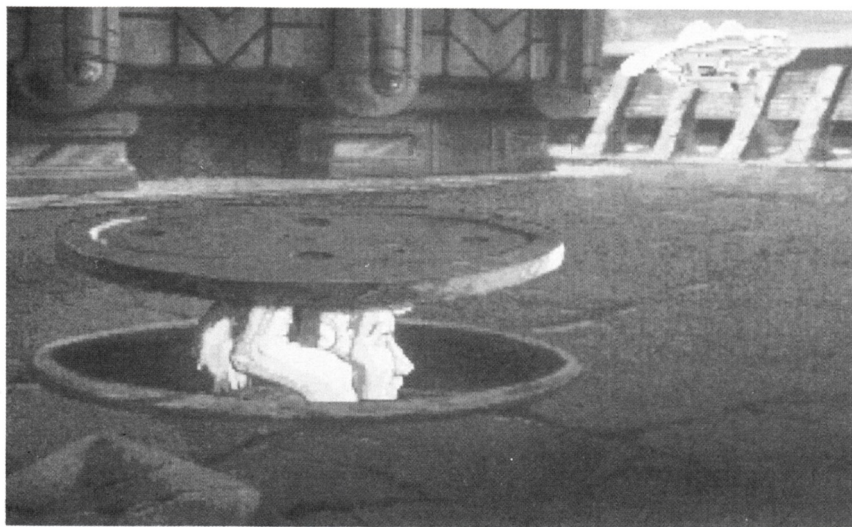
- Published by Sierra • Distributed by Ozisoft • Supplied on 3.5" (720k for EGA) or 3.5" (1.44mb for VGA) or 5.25" (1.2mb for either EGA or VGA) • Price \$84.95 • Requires 640k, EGA, VGA or MCGA screens
- Supports Ad-Lib, Game Blaster and Roland modes.

Sierra fans, especially followers of Roger Wilco's exploits in the Space Quest series, will be happy to know that Space Quest 4 lives up to all that they would expect to find in a 3D Space adventure from Sierra.

Once again, Sierra have found it necessary to produce a game in a number of different formats (as shown above). The size and complexity of the game inhibits production on standard 360k 5.25" disks (there would be far too many to fit into the box),

either a 720k 3.5" disk drive or a 1.2mb 5.25" drive from which to install the game on your hard disk. If you have a VGA screen you'll also need a 1.44mb 3.5" drive or a 1.2mb 5.25" drive from which to install. Having got the mechanics out of the way, let's take a look at the game itself.

The action starts in an intergalactic bar where ex-janitor Roger Wilco is recalling to bug-eyed aliens some of his past adventures. His story is interrupted by two ominous



An escape from the sewers blocked?

shuts out anyone with a CGA screen, and in all honesty, makes things intolerably slow sometimes on a PC running at 8mHz or less. However, if you have an EGA or VGA screen on a 286 or 386, then you'll be happy.

A word of warning though, before you buy the package make sure that your computer configuration will cope with the size of disk supplied. If you have an EGA screen, you must have

looking Sequel Policewho arrest him and take our hero of three previous successes outside to meet the evil Vohaul (at least a hologram version of him).

However, just as the henchmen are about to despatch Roger to the eternal Milky Way, two strangers suddenly appear, create a time door and thrust Wilco through it. The time tunnel takes him to his old haunt Xenon. However, Xenon is not the



Get the code right and you're away!

bustling city he once knew. It looks war ravaged and desolate with a large and threatening complex dominating the horizon. In fact, Roger has been transported in time to Space Quest 12. (Hence the sub-title of the game 'Roger Wilco and the Time Rippers.)

A walk-through (if you need to use it) will get you going through the sewers of the city and providing some of the answers as to why Xenon is in the state you currently find it. Get everything right and you should find yourself in a position to transport elsewhere. I eventually found the answer (or code) to enable me to do this, but I must register a complaint with Sierra that there was no real logic behind it. To my mind it's not playing fair!

Estros and the amazonian 'Latex Babes' are the next hurdle to overcome, apart from the chasing armed Sequel Police, and success in this section (Space Quest 10) will see you on a shopping trip at the Galaxy Galleria. There are plenty of puzzles to solve here, not the least to keep one step ahead of the Sequel Police who, if they spot you, tend to fire first then ask the questions.

If you enjoy playing arcade games in the middle of an adventure you get two opportunities, although they are not absolutely necessary unless you are going for maximum points.

Next you'll warp to Space Quest 1 and, apart from meeting some humorous yet aggressive bikies, you will get an indication of how Sierra graphics have improved as the scenes have been faithfully reproduced in the blocky graphics of that era.

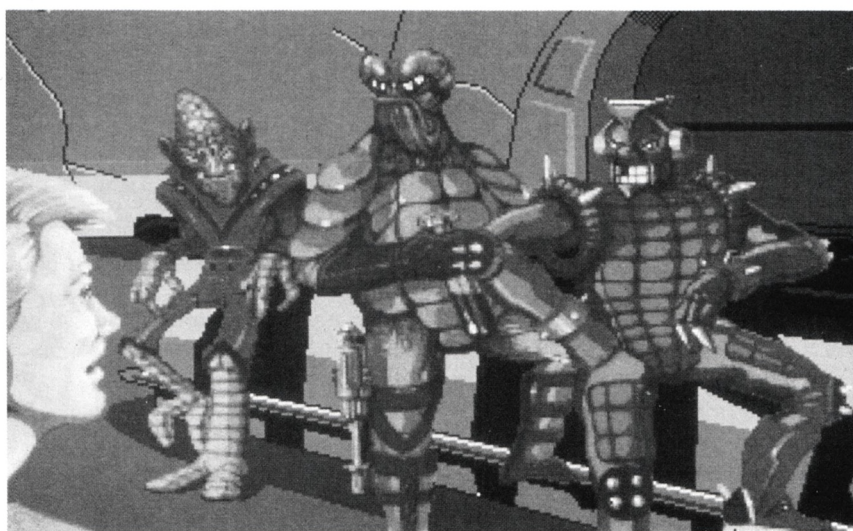
The in-game graphics are of

course superb, VGA naturally being the best, but even in EGA little is lost. The interaction between the game and player is achieved with the 'point and click' system making manual text entry obsolete. The sound is excellent, the music very atmospheric - in fact I am beginning to run out of superlatives to describe Sierra games. Once again, the sound effects and orchestrations are not heard at their best unless through a sound card system. In any case you are paying for them when you buy the game, so why not use them?

One of the hallmarks of Sierra games is the humour, and PC Games magazine puts it in a nutshell by describing SQ4 as "Warp speed and warped humour." Sierra have also introduced "scrolling screens" rather than the old fade-out style. This helps to keep continuity and concentration with the game.

The puzzles have so far been tricky but not impossibly hard, and I am now stuck about two-thirds through the game! Perhaps you can do better?

VERDICT ■ ■ ■ ■



Re-visiting Space Quest 1

HELTER SKELTER

- Published by Audiogenic • Distributed by Pacronics
- Supplied on 5.25" disk only • Price \$49.95
- Requires 512k, Hercules, CGA or EGA screens.
- Supports Joystick or Keyboard.

There is a certain formula that programmers try to find in the hope that it will produce playable and therefore successful games. It seems that if you choose a simple concept, and add a little fun you produce a game that all ages will like. If you add a little bit of a challenge to the game concept you have the possibility of having a great game. Well, Audiogenic have tried to put all these things together to make a hit, and have produced Helter Skelter, but the question is have they produced a hit, or a flop? Well, after hours of playing, it's still good fun and that's one of the elements that make a game a hit isn't it.

Look at all the monsters. Everywhere you look there are monsters. Well, being a good, trustworthy red ball, it's up to you to smash them. The trouble is, that all those platforms keep getting in the way, and the clock is running. You have to clear this level before the timer runs out, or you'll lose one of your lives. Go for it dude, smash those monsters. The concept of Helter Skelter is simple; you control a red ball named "Billy" (if you play with

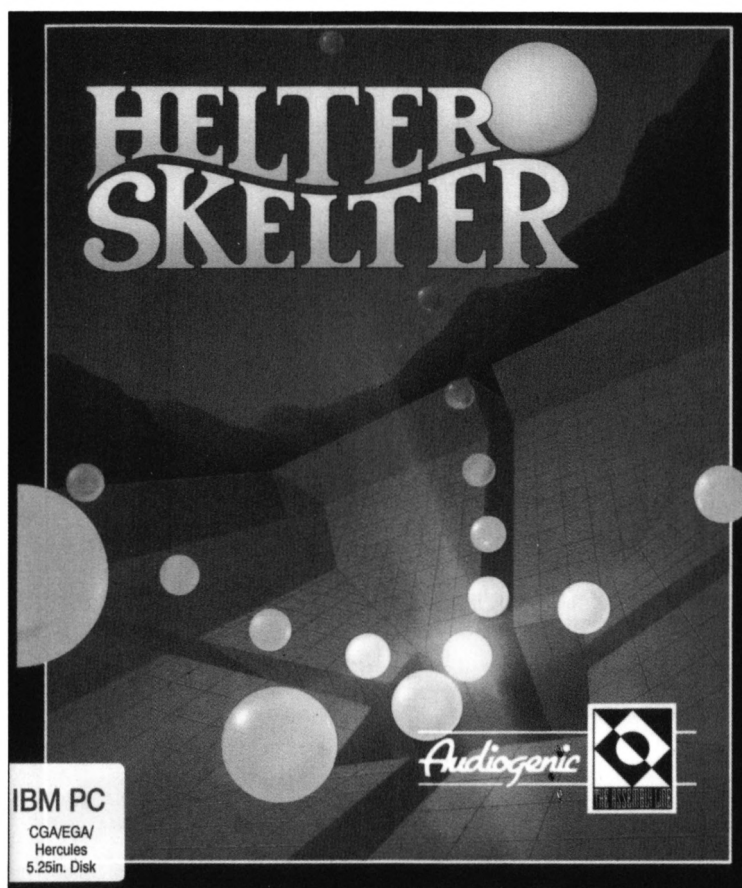
another player, your cousin "Bobby", a blue ball will help you). Your mission is to squash all the monsters on each level, but this must be done in the correct order, or else they multiply (double). Complete the

your ball left or right, and fire controls the height of his jump, and this is done by either keyboard or joystick. Each monster you squash is worth points to your score, and a bonus is added for finishing before the timer runs out. An extra life is awarded for 200,000 points, but you cannot exceed 10 balls at any one time. Tokens also appear at irregular intervals. Hit them and such bonuses as extra time and freezing the monsters. There are two levels that are impossible to complete for only

one player, and the program skips over these unless the two player option has been selected. There are 80 levels to complete, so to reduce the frustration of always having to start at the beginning, a four letter password is given every 10 levels. Type this password after you've selected your method of control and it's off to that higher level.

Graphically, Helter Skelter is good. It supports EGA, CGA and Hercules, but unfortunately there is not a VGA version. The sprites are clear, and the background graphics don't clutter the screen or obscure

the sprites. Movement of the sprites is smooth and well done. Sound is only the standard PC sounds, and there is no mention in the documentation of whether or not other sound systems are supported. Gameplay is where Helter Skelter really stands out. It's one of those games that you



level, and it's on to another with different platforms to get in your way and different monsters. You start the game with five lives, and lose one every time you fail to beat the timer.

With such a simple game, the controls have to be as simple. You control the movement of

can get into immediately, you become thoroughly involved in solving the problem of how to complete the level and you have to just keep trying to reach the next level. All in all, one of those infuriatingly addictive games that are great fun to play. The game loads all in one hit, so the amount of disc access is limited to the initial loading.

If eighty levels were not enough to keep you involved, Helter Skelter also contains a screen designer to create your own screens, with platforms where you want them. You also get to decide which monsters populate each level, and which

direction they initially move in. Control of the screen designer is by either keyboard or mouse and is very easy to use. The screens you create can be saved to disk, but should not be saved on the original game disk. By using the screen designer, Helter Skelter's longevity becomes infinite. With potentially an unlimited number of screens to complete, you could be playing this game for a long, long time.

Helter Skelter was originally released in 1988 for the Amiga and Atari St and was a hit. Now, two years later the PC version is out and it really is just as good as the others. There is only one

gripe with the game, and that's with the documentation. It's only a single printed sheet, but the pages are not printed in a logical order. This is a black mark in what is otherwise a good game. But, from a game players point of view, Helter Skelter is good and has a lot of playability. Because of the eighty levels and the screen designer, it will keep you going for a very long time. All things considered the wait for the release of this game was worth it, as Audiogenic have again proved that simple games are easiest to make into hits.

VERDICT ■ ■ ■

4D SPORTS BOXING

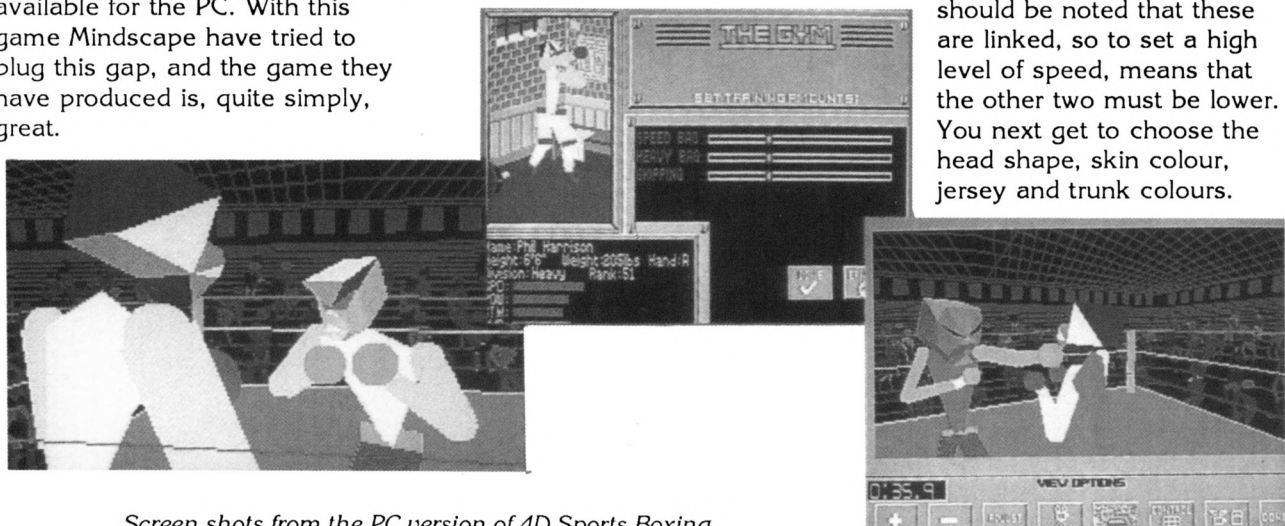
- Published by Distinctive Software • Distributed by Mindscape Int.
- Supplied in dual format • Price \$59.95 • Supports Ad-Lib card
- Requires 512k (CGA or Hercules) or 640k (EGA or VGA)

Mindscape launched their 4D Sports range with a driving simulator. The second in that series is now available, and as a complete change of pace, the subject this time is boxing. There haven't been that many boxing simulators for the home computer, and very few (if any) available for the PC. With this game Mindscape have tried to plug this gap, and the game they have produced is, quite simply, great.

The first thing you'll notice about 4D Sports Boxing is the graphics. Upon loading the game, you're presented with the options screen, where you can change your input device (you can use either joystick, mouse or two different keyboard combinations), the number of rounds (from three

to 15), choose between the red and blue boxer and decide if you want the boxers weight and height expressed in either imperial or metric measurements. Next, a quick visit to the gym allows you to view the boxers provided with the program, or to create your own. If you decide to make your own, you choose the name, height (anywhere between 152 and 195 cm), weight division (choose any division from light at 61 kg to heavy at 113 kg). You also get to set the initial speed, power and stamina levels. It

should be noted that these are linked, so to set a high level of speed, means that the other two must be lower. You next get to choose the head shape, skin colour, jersey and trunk colours.



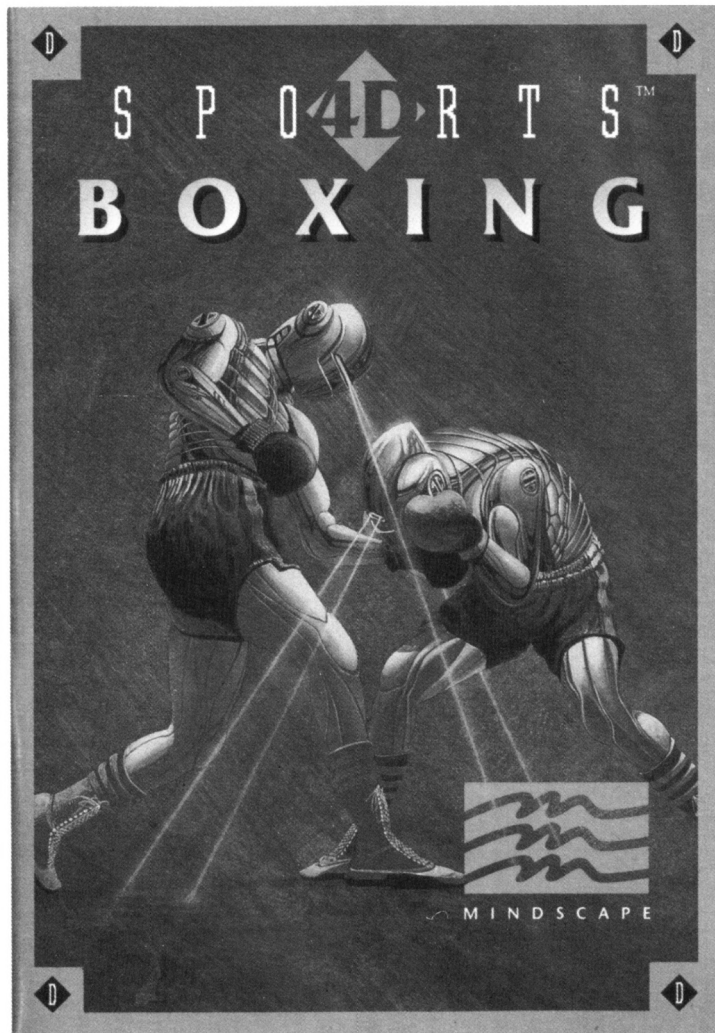
Screen shots from the PC version of 4D Sports Boxing

Once you've built your man, it's into the program proper and the Boxing ring.

There are two different types of boxing that you can try. You can either fight an exhibition bout, or go straight into the main event. Once your bout is announced, you can set the in-game options, which include the viewing options; the fight can be seen from one of the nine cameras around the ring, or through the eyes of your fighter. If you try the main event, you start as the 51st ranked boxer and your aim is to fight your way to the top. Your first fight is against Larry Lunchbox with \$1000 prize money. On your way up the ladder, you get to fight such fighters as Lance "Squisher" Boil (prize money \$10,990), Mohamed Ali Baba (\$40,960), Wilma Headhurt (\$385,015), Ugotabe Kidding (\$548,052) and Ivan Horrible Attitude (\$810,190) before you get a crack at The Champ, with a final purse of \$1,000,000. Each of the boxers along the way are different in appearance, and can be either right or left handed. As you can only challenge boxers either one position above you or below you, to reach The Champ you'll have a lot of boxing. The money your boxer earns is saved on a high score table, which also shows your win/loss ratio. In addition, as you progress through a series of fights, your speed, power and stamina are increased by your training, and you'll need

all of these to be at maximum levels to fight the better boxers.

4D Sports Boxing will work on all PC's although to get the best out of the program you will need an XT with at least 8 MHz, VGA graphics and 640K of RAM memory. An added sound board will greatly improve the sonics within the game, but even with an internal PC speaker the sound is quite good. You can run the



game with 512K, but you'll only be able to run CGA or Hercules graphics. Control is best with a joystick with different punches being decided upon by which fire button and direction are pressed. As stated before, graphically this game is great (VGA), and naturally, the lesser graphics lose

a little. Each boxer is depicted as a solid figure, but if the game runs too slowly on your PC you can reduce each boxer until they are merely stick figures.

The other good features in this package are the digitised ring shots prior to each bout, and the way the announcer introduces each fighter as they wait to commence each fight. You also get an action replay facility, which operates like a VCR and lets you review each round to see where you go wrong. Although the game suggests the use of a hard disk, if you are playing from 3.5 in disks this doesn't matter, as the entire program comes on one disk, therefore there is no disk swapping required. For users of 5.25 in drives, there are two disks and therefore some swapping is inevitable.

Mindscape have been very impressive with their 4D Sports range. Of the two released so far, Boxing is by far the best. It's very playable, and lots of fun. Having a goal to strive for (i.e. to be The Champ), it's a game in which you must have just one more go.

I am looking forward in

anticipation to the release of more games in this series. If Mindscape can maintain this standard, 4D Sports Tennis, their next offering in this series, should be great.

VERDICT ■ ■ ■ ■

LEXI-CROSS

- Published by Interplay • Distributed in Australia by Electronic Arts
- Supplied in dual format • Price \$49.95 • Supports Sound Cards
- Requires 512k (for CGA or EGA) or 640k (MCGA or VGA)

Now here's a game that is a somewhat different from the norm although you could argue that it contains little bits of lots of games. Let me explain that convoluted start.



Lexi-Cross is tagged "the Galaxy's hottest TV Game Show" and as such moves the player into the year 2091. (Sounds a long way away, but it's only 100 years!). The game is essentially a word game between contestants, but will no doubt remind you of a cross between Lexicon and Wheel of Fortune, and it all happens in a TV studio environment.

Contestants can be human vs. human, human vs. robot (the computer), robot vs. robot (for demonstration purposes) or human vs. modem (actually against another human but down a telephone line). While the robots look like, well... robots, the human participants can be selected from nine graphic representations. Choosing a robot contestant will allow the player to set the 'intelligence' of the opponent.

Two types of gameshows are on offer. The first is a 'no frills' practice version which skips all the razzmatazz normally accompanying TV Shows and goes straight in to the game.

The full feature 'on the air' version really goes to town with a title sequence, establishing shots, commentary on play, contestant introductions, between round commentary, final words and credits. The game timer is always on and any result goes into the player's history record.

So what's the object of the game? Simple - to reveal words which are hidden under a matrix of tiles and then solve a puzzle that the words suggest by typing in the answer before your opponent. However, whilst both contestants will have the same words hidden on their grids (and



both grids are always in view) the words may well appear in different places on each.

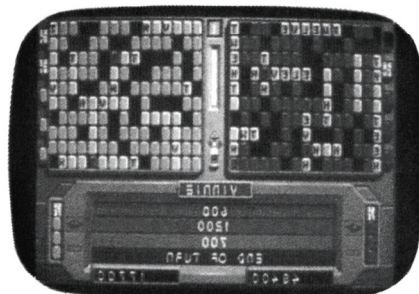
Following the opening sequence then, the contestants are each faced with a matrix of 160 grey tiles. Taking alternate turns the players can choose to do one of four things; turn over a tile in the hope that a letter or bonus will be revealed, pick a letter, choose a vowel or solve the final puzzle. It will become clear later why the last three options would not be chosen at the start of a game.

Using a mouse or keys, the player moves a mini-robot to a desired position on the matrix and flips over a tile. This make

reveal a letter in which case the player can flip another tile. However, there are many tiles which can alter the player's score quite dramatically. For example, flipping over a tile with a [+] or [-] will add a number of points to either his/her own score or the opponents. There are tiles which allow a player to reveal for a few seconds all the tiles' values in a particular row, tiles which can be saved and used to get out of trouble later, and so on.

As the lettered tiles become exposed and scores increased, a player can choose to pick a letter that has not yet been revealed. This is a big gamble but worth it if successful as all tiles with the matching letter will be flipped over. A wheel containing points, 'lose a turn' or bankruptcy is spun with all the attending excitement. There's also the option to choose a vowel, similar to picking a letter, but as more words become obvious, players can have a stab at solving the final puzzle - identifying the word suggested by those revealed in the matrix.

Lexi-Cross is best played against another person as it becomes an exciting battle to accumulate the most points. The graphics are clear (VGA), the



sound a little limited during the game, but the concept and gameplay refreshingly different. I enjoyed the game, and found it a pleasant break from adventures and shoot-em-ups.

VERDICT ■ ■ ■ ■

Moonlighting with DTP

The secrets behind producing a newsletter or hobbyist magazine without sending you broke are explained by John de Rivaz.

The numbers of English speaking literate people in the world make desk top publishing for small special interest groups an ideal business idea for a second income. When one considers how user groups for obscure computers, or fan clubs of television series have developed from a hobby into a full time business for the proprietors, there is always the chance that the subjects you have chosen will launch you into a full time career more enjoyable and fulfilling than your present job.

Build up gradually

With care and discipline, it should be possible to start using the most primitive of equipment, and build up gradually if the circulation and income warrants it. All that is needed to start is a simple word processor. If you have not used one before, there are several to choose from. They range from simple to complex and within the range offer a wide variety of options.

You could also consider purchasing a stand-alone word processor (like an Amstrad PCW) which provides the computer, printer and software in one package.

Printing can be done on a personal photocopier, or at a copy shop, and once your print run is past 200 copies, by a local offset litho firm. Prices do vary, and you are advised to get several quotations, and also a quotation of when the job will be done.

Don't be ripped off for advertising

It is unlikely that any newsletter will flourish if there is a lot of 'editor talking'. Therefore you need articles. One can start by paying for advertising, but this is really money wasted - it doesn't create anything. Also advertising prices are set by what big companies will pay - there are no raw materials or consumables involved. The pricing is entirely based on what the market will

take, and that is set by rich companies.

You cannot get something for nothing, and the way I recommend starting is to make the first one (or even two) issues free of cost, and to circulate them as widely as possible. What you would have paid in advertising now has gone to your readers, and created something - your newsletter. You will have to write the first issue yourself, but in it you can offer free subscription to the following volume to those who send in articles. If your subject is popular enough, your newsletter will soon get them pouring in! People love to see their name in print, and you may well start some writing careers.

Editors of mainstream magazines are usually very helpful in printing readers letters about computer newsletters at no cost to the promoters. If your newsletter is on another subject, there are usually other magazines with similar policies. There will be some that will help, and others that won't, so you need to write to as many as possible. With monthlies you may have to wait two or three months for your letter to appear.

The real boost to such newsletters in the computing field are columns of free 'club spots' that are appearing in leading computer magazines. These are editorially produced, so you can't write your own copy, and you need to ensure that the columnist gets a free copy of your newsletter.

Another fruitful source of readers are other newsletters that are specifically published as listings of small publications. A well known world wide example is published by Mike Gunderloy, Fact Sheet Five, 6, Arizona Avenue, Rensselaer, NY12144-4502, USA. Send them your newsletter, and they will send you theirs, with details of yours

published therein. Many such listings are one offs and you may need several insertions before readers take you seriously. But all it costs you is to send them free copies of your newsletter, and you get theirs free in return. Fact Sheet Five is not itself a small publication. Its worldwide circulation is over 7,000 readers, and it reviews videos, audios and also computer programs.

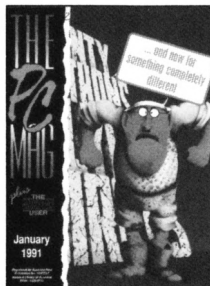
Expanding your equipment

Once you have established a circulation and need for your newsletter, then you can justify the purchase of more elaborate equipment to produce it, such as a PC capable of running WordPerfect, and a laser printer. WordPerfect is very easy to learn and set up, and although it hasn't all the features of a desktop publishing system, it has the great advantage that you can edit the text and the whole newsletter all in one go without switching between programs. You can get a laser printer working with WordPerfect without knowing anything about laser printer programming at all. You can probably get WordPerfect for about \$600 if you shop around. Your PC will need a hard disk - WordPerfect will run from floppies, but it is too slow to be practicable as there are lots of disk accesses.

In conclusion

It is important to remember that the money you receive in advance for subscriptions is money that you are holding in trust for the duration of the volume. You should apply it to printing the newsletter, and any surplus to its improvement. Do not consider taking an income from it until it is well established. Do not throw your income away rashly on flamboyant gestures such as big advertisements or other non productive expenses.

MISSING SOMETHING?



JANUARY 1991

PCs & compatibles • Advice for new computer owners • First of a series on MS-DOS • Robotics • Hard drives and their functions • Trackman mouse • GW Basic Graphics • Reviews of A-10 Tank killer, Cardinal of the Kremlin, All dogs go to Heaven, Sherman M-4.

CPC • WP type-in - part 2 • Machine code tutorial part 2 • Calendar Type-in

PCW • Numbering Pages with LocoScript

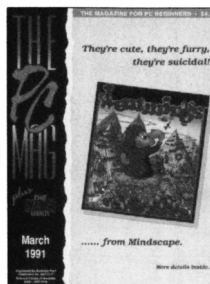


FEBRUARY 1991

PCs & compatibles • Video Frame grabber • DOS part 2 • LC24-10 Star printer • Sim Earth • Hard drives • Reviews on Octadial, Monty Python's Flying Circus, Railroad Tycoon, Silent Service 2, Oils Well, Quest for Glory 2 • Programs for the home.

CPC • Five games reviewed • Basic short cuts • Discussing disks • Final part of WP Type-in.

PCW • Two new games reviewed • Page numbers

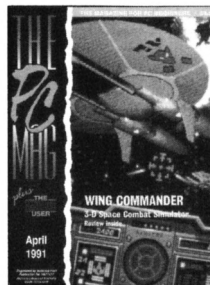


MARCH 1991

PCs & compatibles • Tasword PC2 • DOS part 3 • Answers on High Density disks • Reviews of ATF2, Hidden Agenda, PGA Golf, Bill & Ted's Excellent Adventure, Atomix, Mind Games, Stellar 7, Kings Quest 5, Life & Death 2 • Maximiser contact organiser.

CPC • Machine Code Guide part 3 • Reviews of UN Squadron, Srtider 2, Time Machine, Flimbo's Quest • More on disks • CPM • Two type-ins

PCW • Description and explanation of USER command.



APRIL 1991

PCs & compatibles • Easy Start integrated software package • Report on new CAD package from Generic • Reviews on Das Boot, Pinball Magic, Super Off-Road, Wing Commander, Mortville Manor, Mayday Squad Heros • MS-DOS' Tree structure • Two packages to solve a reference problem.

CPC • Discussing disks part 4 • Three new type-ins • Machine Code guide part 4 • Printer problems

PCW • Maintaining user dictionaries • Hot tips



MAY 1991

PCs & compatibles • utilities to enhance Windows 3 • More on DOS part 5 • Choosing DTP software • Printer Problems • Reviews on Covert Action, Wonderland, The Power Pack, Red Baron, Jones in the Fast Lane, Secret of Monkey Island

CPC • More on disks part 5 • Puzzle Type-in • Reviews of Ninja Remix, Line of fire, Loopz, Soccer Mania

PCW • Three new educational packages with graphics reviewed • Tips in exchanging text.

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Books for Productivity

Abacus are prolific publishers of books to help PC users get more from their computers. Here's another five to add to their impressive list.

Abacus is an American publishing company (Grand Rapids, Michigan) who already have an impressive list of titles to their name covering almost all aspects of computing. Their range includes the well known Abacus Quick Reference Guides and Books for Beginners series covering dBase, Lotus, MS-DOS, Word etc., and the popular Productivity Series. We've looked at some of them in past issues.

Pactronics is responsible for importing them into Australia and have supplied us with the latest five titles. Here's a run down.

QUICKBASIC TOOLBOX

Most readers will know that QuickBasic is a much more sophisticated version of the once simple BASIC language (**B**asic **A**ll-purpose **S**ymbolic **I**nstruction **C**ode) that not only allows you to perform structured programming but is also versatile and pretty easy to use. However, this does not necessarily mean that programs created using QuickBasic are going to be user friendly. To overcome this, programmers may spend a great deal of time coding menus and interactive dialogue boxes. Enter QuickBasic Toolbox.

This book provides the QuickBasic programmer with the necessary tools for adding a user-friendly interface to any program, even existing ones. There are various kinds of toolboxes; some with "do everything" functions with countless parameters

while others contain basic routines that enable you to customise your program - this book concentrates on the latter without losing too much flexibility of the former.

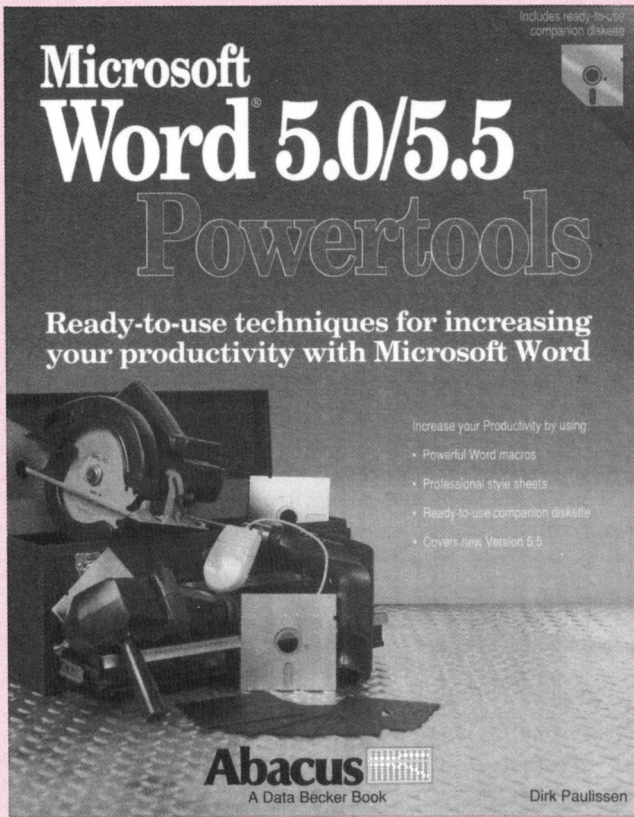
The principle used in the routines is simple - you define the menus, keyboard functions, window arrangements and program functions, and QuickBasic Toolbox will manage what you define. Some of the topics covered are: complete routines for SAA interfacing, mouse support, pull-down and pop-up menus, presentation graphics (pie and 3D bar charts), label editor and printer, macros and background processes etc.

Supplied with the book is a companion 5.25" disk containing the source code and documentation of all the routines and functions so that in the event a function will not fit a particular programming situation, the code can be altered accordingly.

MS-WORD 5.0/5.5 POWERTOOLS

MS-Word is ranked among the best word processing programs on the market. Even so, there are occasions when Word cannot provide solutions to particular publishing problems. MS-Word Powertools can offer solutions, increase productivity and show new ways to use MS-Word.

The book contains programs, macros and style sheets which can be applied to daily sessions with MS-Word 5.0 or 5.5 and, the book claims, you do not have to be an expert. Where differences do



occur between 5.0 and 5.5, suitable references are made. Being more specific, Powertools provides macros for adding borders to pages or paragraphs, utilities which perform different functions outside of Word (e.g. a program which furnishes statistics about your document), macros to let you use Word as a friendly editor for creating sourcecode in different programming languages and more. Supplied with Powertools is a companion 5.25" disk containing complete ready-to-run macros, style sheets and sample form letters.

BATCH FILE POWERTOOLS

There are a number of ways to simplify working with MS-DOS. One such method is using a special interface program such as DOS-Shell, Norton Commander or Windows 3.

However, these are often inconvenient or take more time to process than entering directly on the DOS command line! Batch Files too have their limitations, for example, DOS does not have a command that allows you to query the keyboard for input during a batch file run.

Batch File Powertools provides an alternative making it easier and faster to execute the same commands from the DOS command line. For example, instead of entering `cd c:\docs\bus\export\1990\cust` to change to the cust

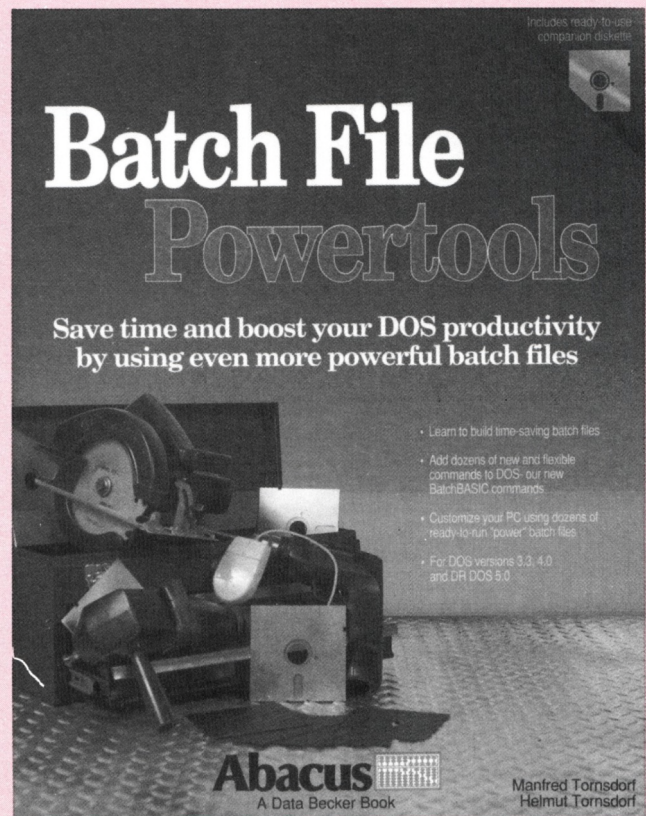
directory, Powertools provides a method using a TCD BatchBasic command as simple as `tc d cust`. Batch File Powertools also comes to the aid of batch file users - and that means most of us - by providing 'super-commands' such as ASK and INPUT for querying the keyboard. Batch commands are provided to enter numbers or text while a batch file is executing, include basic arithmetic operations, create loops in batch files, browse directories, compare strings, convert to upper case. All the tools become extensions of existing DOS and batch file programming; no new user interface or special compiler is required.

Batch File Powertools should boost your computing productivity with techniques for making powerful batch files. Included with the publication is a 5.25" disk containing BatchBasic adding many new commands to DOS plus dozens of practical examples. It covers DOS 3.3, 4.0 and DR DOS 5.0.

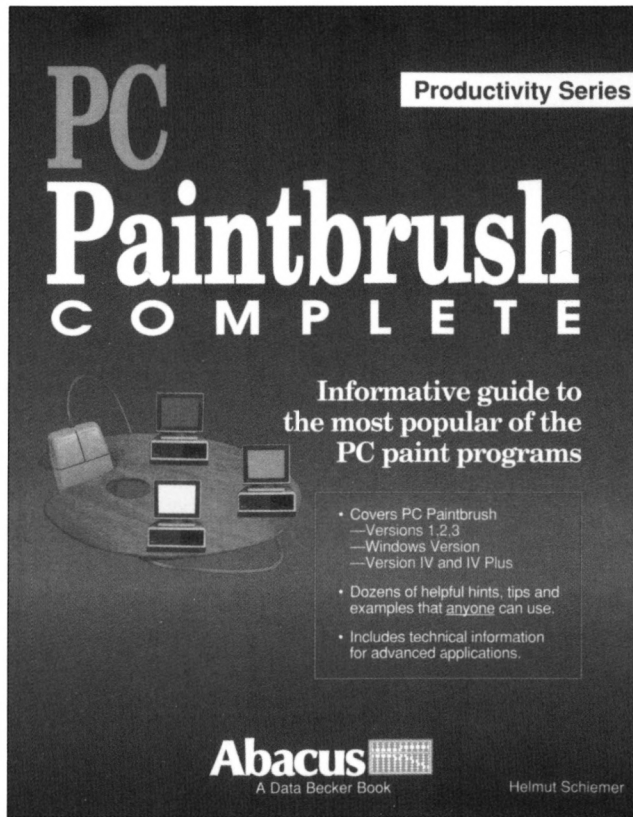
PC PAINTBRUSH COMPLETE

PC Paintbrush 1.0 was first launched in 1984. Since that time well over 500,000 copies have been sold and the Paintbrush File format for pixel pictures is now used as standard. There are also a number of identical 'OEM' versions often included in a mouse package.

PC Paintbrush Complete covers most versions



REVIEW



(Paintbrush 1.X to 3.X; Paintbrush for Windows; Painbrush IV; Paintbrush IV Plus) although it does recommend that you purchase PC Paintbrush 4 or 4 Plus by Zsoft to take full advantage of the latest features. It explains to the reader many hints, tips and hands-on examples of getting the most from the built-in menus and tools as well as teaching about page sizes, orientation, captions and more. It also helps with printer problems and input devices such as mouse, scanner or joystick.

The book comprehensively covers PC Paintbrush menus, use with Windows, scanning, tools and technical information. Utilities provided in the book include FRIEZE (graphics interface), GRAYTOBW (from colour to black and white), SETCOLOR (adjusting the printer colour palette) and TIFFDUMP (viewing TIFF files).

STEPPING UP TO DR DOS 5.0

This book is sub-titled "Learning DR-DOS in a hurry". That may not be good advice, but the publication certainly presents a fast-paced guide on how to use the most important features of DR-DOS 5.0. In typical Abacus style, it presents hands on examples to get you going quickly.

For a start it describes DR-DOS 5 and then compares it to MS-DOS. The book continues to describe what it calls the 'highlights' of DR-DOS 5

and explains why DR-DOS is easier to use than MS-DOS. It doesn't dwell on the limitations of MS-DOS, rather, it tends to focus on the new features of DR-DOS which overcome the problems. It suggests that if you are a network user, DR-DOS could well be the answer. A special utility called FILELINK is provided to transfer files and data between two computers; a useful program for laptop users.

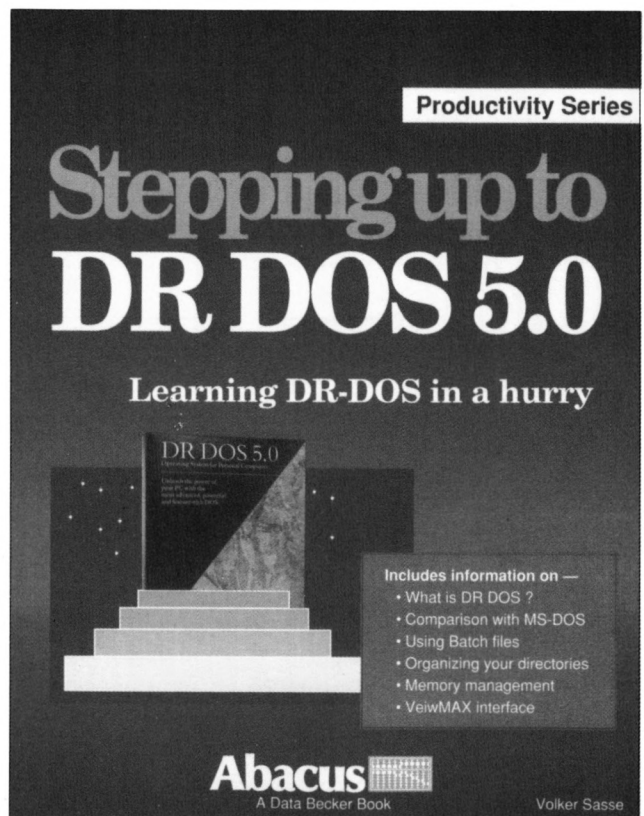
Stepping up to DR DOS 5 covers the installation of DR-DOS, storing data, shortcuts, backing up, filter commands, fine tuning, batch files, processing text, memory management and error messages. Within the Appendices are a list of both internal and external DR-DOS commands and a comprehensive glossary.

All five books are imported and distributed by Pactronics (02) 748 4700, and are available at all good computer dealers or by mail order (plus postage) from Strategy Publications (03) 803 9661.

The prices are as follows:

Stepping up to DR DOS 5	34.95
PC Paintbrush Complete	39.95
QuickBasic Toolbox + disk	69.95
MS WORD 5/5.5 Powertools + disk	69.95
Batch File Powertools + disk	69.95

REVIEW



Patterns in Chaos

The Chaos Theory is certainly complex but a by-product when using a computer can bring amazing graphics to your screen.

One of the most remarkable scientific theories to emerge in the last decade was the theory of chaos. It was all the more remarkable because it captured the imagination of the public, which, though it may not have understood the theories, certainly appreciated the beauty of fractals and Mandelbrot sets.

Put simply, Chaos Theory deals with the patterns underlying apparently random events, such as weather cycles, fluid flows and plant shapes. These patterns can be reduced to formula that can be manipulated and used to create new patterns. That's where the computer comes in.

Without the power of the computer, chaos theory would probably have remained a passion of scientists. But the computers ability to generate stunning images based on the mathematics of the new theories made chaos one of the more accessible areas of scientific endeavour.

A major reason for the popular

uptake of Chaos Theory was the 1987 publication of a book called *Chaos: Making a New Science*, written by a New York Times journalist, James Gleick, it stormed up the non-fiction charts and became a best seller.

In 1989, Gleick approached Autodesk, the world's fifth largest software house, with the idea of a program to illustrate some of the theories in his book. The result is *Chaos: The Software*, a \$99 suite of six programs that belong on every PC.

Don't be fooled by the price. *Chaos: The Software* is as professional a piece of entertainment software as you are likely to find. It needs just over 1.6 mbs of hard disk when installed and runs on any current PC (although more sensibly on at least a 286).

On booting, a colourful screen appears with a button for each of the six programs. There is also an image of half a dozen spheres, each sphere corresponding to a different program.

While not a Windows program, the interface is very Windows like. For instance, F1 calls up a context sensitive help window, complete with scroll bars and the means to search for particular text. The programs use slider bars, plus and minus buttons and text entry fields. And while there are plenty of keyboard shortcuts, a mouse is the easiest way to interact with the software.

To get the most out of *Chaos: The Software*, some studying of the 238 page manual is necessary. Gleick's book would also make for a better appreciation of the programs. Each program is documented in a similar manner. Gleick explains the theory he is trying to illustrate, you are told how to use the program and, for the scientifically inclined, the mathematics of the program is detailed.

The most widely known area of chaos theory is that of fractal images. The most famous is the Mandelbrot set, a colourful image that reveals new layers of detail as you zoom into it.

The Mandelbrot Sets program allows the user to explore five different types of fractals - Mandelbrot sets, Julia sets, cubic Mandelbrot sets, cubic Julia sets and Rudy sets. New images are created by zooming in or out on a portion of an on-screen image.

Each fractal is painted in four passes, increasing in detail with each pass. Processing power is a definite plus here, as even with a 386SX, images take a few minutes to be completed. *Chaos: The Software* is a great reason to add a maths co-processor to your PC.

All the programs can be run without reference to the manual. There are common features to most of the programs too, such as the means to store up to four images in memory. This 'stamping' shows miniatures of the four images down the left of the screen. Clicking on a miniature

brings it back to the main screen.

Another common feature lets sound be generated as the images are drawn. They may not be the most melodic tunes, but they add an aural dimension to the software.

All programs have an enormous range of variables, varying from program to program. The Mandelbrot Sets has a range of fill patterns and colour palettes. It also has 21 pre-set images to give an idea of the possibilities.

Having exhausted the pre-set images, the user can tweak the parameters associated with each image type. Both images and parameter sets can be saved for future use. The images, stored as GIF files, could then be loaded into packages that support that file format.

Strange Attractors is another program with a graphics bent. It visually demonstrates how a chaotic system, such as a population, changes with the passage of time. The images are not as symmetrical as Mandelbrot and Julia sets, but they can be zoomed, panned and tweaked to produce some beautiful pictures.

There are four types of attractors to experiment with - Lorenz, Yorke, Henon and logistic. The program has stamping, sound, colour cycling and a range of tweaks for each attractor.

Fractal Forgeries is the most impressive of the six programs, for it generates synthetic images of mountains, clouds, planets and contour maps. The images are produced from mathematical equations and can be rendered in up to 256 colours. That takes time, but to see a full screen image of a fictitious, mathematical planet, complete with cloud, icecaps and continents, is worth the wait. Even better, animations can be produced and stored to files that can be played back in Autodesk Animator.

With this program, playing with

the parameters produces an infinite array of different images. Variables include the height and hilliness of the terrain, the angle of the sun and the time of day.

Magnets and Pendulum is a different sort of program. It illustrates the manner in which a swinging pendulum is affected by different arrangements of magnets. While not as visually stunning as Mandelbrot sets, it does produce some intriguing effects. There are seven preset magnet layouts. Press the mouse button and the pendulum starts swinging, leaving a trail behind it. The bob can be given a hard or soft push from any location. Magnets can be moved, made stronger or weaker and the simulation played in steps or continuously. In addition, each layout has slightly different variables to play with, such as reversing the polarity of magnets or reversing the swing. Up to 32 layouts can be stored in memory, though not to disk.

The most stunning display is a layout that demonstrates basins of attraction. It takes some hours to complete, but the result is a fractal-like image that can be saved as a .GIF file.

Despite its name, **The Chaos Game** is not a shoot 'em up arcade romp. It is a mathematical puzzle which mixes simple rules for moving and replicating a triangle with a little randomness. The result is recognisable patterns such as ferns, shells and geometrical shapes.

There are 21 pre-set patterns, nine colour palettes and plenty of tweaks available. While stamping, zooming and file saving are standard features, the real pleasure is in changing the rules and making your own patterns. Most will be forgettable, but occasionally an image emerges that is quite stunning.

The sixth program, **Toy Universes**, is an advanced version of that old public domain program,

the Game of Life, in which pixels on the screen turn on and off according to the status of their neighbouring pixels.

Toy Universes is an example of a cellular automata program, with the computer simulating the growth of colonies of cells. It has four sets of rules - Hodge, Eat, Nlucky and Tube. Each results in different patterns that change constantly, as if they were alive. There are plenty of options to each rule set, enough to keep anybody amused for hours.

And that is the appeal of this suite of software. You can generate truly stunning images without having to be artist. You can make that blank computer screen a thing of the past - this is just the sort of program to have running at times when you are not working on your PC. And you can tell your boss that you are learning all about chaos theory in the process.

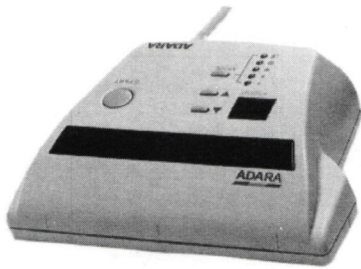
Of all the programs, Fractal Forgeries is the most amazing. Mandelbrot Sets is the most accessible, while if Toy Universes appeals, check out CA Lab, another Autodesk produce that really gets into cellular automata.

The strength of Chaos: The Software is that each of the half dozen programs is a winner in its own right. Combining them into one package results in an affordable collection of programs that is well worth examining.

But Chaos: The Software is not only fun, it is also educational. The manual explains the theories quite well and the tweaking options available within each program show just how few limits there are to chaos theory.

Kester Cranswick

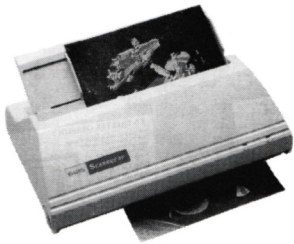
Chaos: The Software is produced by AutoDesk (03) 429 9888, distributed by Reckon Software (02) 550 2666, and available at all good dealers or by mail order from Strategy Publications for \$99 (plus postage) on (03) 803 9661.



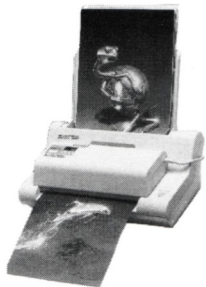
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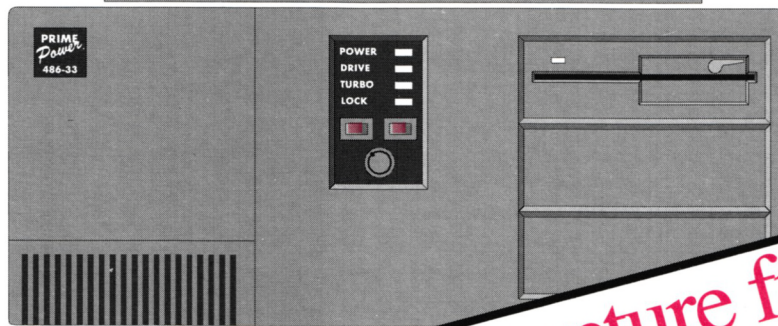
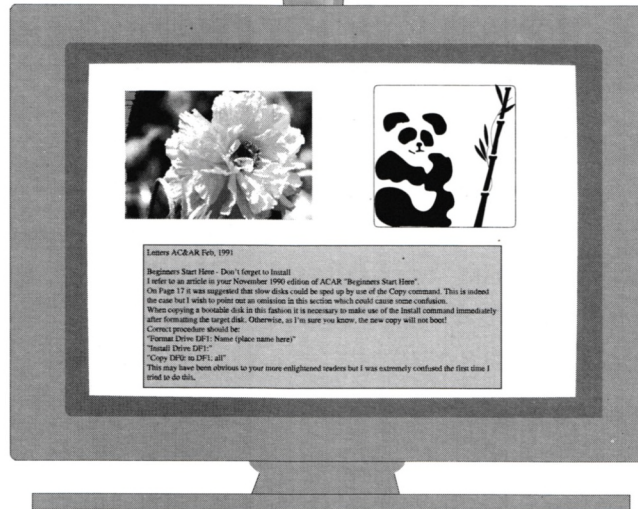
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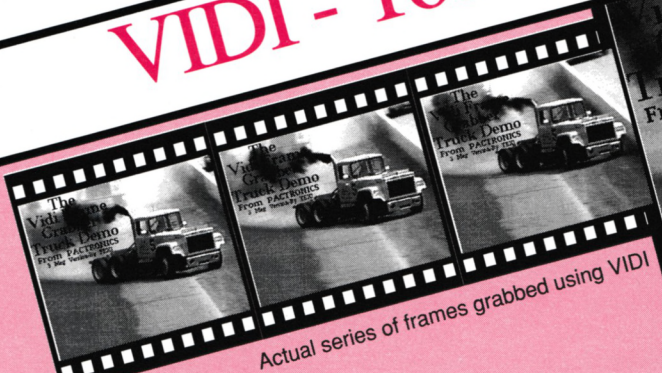
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South Australia: Refer Head Office or Victoria.
Western Australia: Pactronics, unit 13, 133 High Rd Willeton 6155, (09) 354 1122

Organising VCs & pics

Chris Collins studies two databases and a drawing program with a difference now released on Shareware.

Welcome to June 1991, and this month's Compatible's Corner. Some people may not have noticed that postage charges jumped something shocking in April. Before, I could send out your diskettes for a maximum of \$1.10 even to Western Australia or Queensland, now it costs \$1.80 just to send them across Melbourne. What a jump! However, because money is tight (and we are in the middle of the recession that we needed to have - Paul Keating) I won't be increasing the prices at all.

Editorial decisions cut my column last month, so I start this month with the bits that you were denied. db-VCR to be precise.

db-VCR

db-VCR is simply a database for you to keep track of all your video cassettes. Having said that, let me say this. The execution of db-VCR as a program is one of the best that I have seen. db-VCR occupies only one 360k 5.25" diskette and has a

registration fee of US\$17.95 so it is very cheap for what it is.

db-VCR is a totally menu driven database specifically set up to be used for tracking video tapes. The information that is input when entering a tape includes title, director, actors, actresses, type of film, speed, starting point, ending point, time and a couple of other fields as well. There are also three free-form fields for you to add comments.

Once all of your data is input, db-VCR allows you to sort the info by either title or tape ID. At this point you can either VIEW, ADD, EDIT, DELETE or do any of the other things that are necessary in a database. When adding information to a record, if the information is not self explanatory, a small menu pops up showing you what your options are. For example, when you get to the SPEED field, a small menu pops up showing SP (Standard Play), EP (Extended Play) or LP (Long Play). This makes things much easier.

The printing facilities are fairly

limited in what they can do. Basically they will only print a listing of all of the video tapes in your collection, sorted by either title or tape ID.

This is an excellent database program, and I would recommend it to anyone who has a lot of tapes to keep track of.

ImageAccess

ImageAccess is another simple database but this time is used to access picture files with a record. It is the only one of its kind that I have been able to find in the shareware market. In the commercial market, Superbase2 and Superbase4 (which both run under Windows) do this job. But nothing until ImageAccess did it for the shareware market.

The uses that spring to mind are many, and some of them are listed below. These are some that came straight out of the manual, so forgive me for quoting.

- Museums can catalogue items, including a description, price paid, and a grey scale photograph of the item in question.
- Genealogists can do a family tree, and associate a photograph of the person with their record.
- Personnel files can include a photograph of the person involved.
- Clip art for desktop publishing can be arranged and sorted with descriptions for each item. You can then look to see if the picture will show what you want. These are just some of the uses that it could be put to. Collectors are the people who could gain the most from a program like ImageAccess. After entering your data, your graphic of the item is never more than one keystroke away!

What hardware do I need to run ImageAccess, I hear you ask. Well, the hardware is not really that great, an XT compatible or better with at least 512k RAM,

and an EGA or VGA screen. A hard disk is strongly recommended. I reckon it is a necessity! ImageAccess does support a limited range of printers including the Epson LQ 24 pin dot matrix, IBM proprinter X24 range, and the HP Laserjet series. Also you will need a way to be able to convert your photographs into either PCX, TIF or MSP format.

ImageAccess is menu driven, and that does make it rather simple to use. However, the implementation is rather difficult to use. To get out of a menu, you must always press ESC, or it won't let you out. This is one of the few problems that I found with the use of the program, as opposed to its capabilities.

Go to the FILE menu first to either LOAD a file, or to CREATE a new file. A sample database, with graphics, is included. Load this and you will get the best example of how the program works. After LOADING a file, you can then search through the text, or step one record at a time, to find the record that you want. To see a graphic that is involved with a record, simply press F10. Presto, there is your associated graphic! Press ESC to go back to the record.

You can print out reports, although the formats that are available are very limited. Basically the only option that you have is the number of records that will appear on the page. This will change depending on your database, but it doesn't leave a lot of leeway if you only want to print certain information from each record. If a graphic is attached to a record, this will print as well.

Query is the search menu, and will allow you to search for a string anywhere in a record. ENTER will get you the next match, and F10 will display the graphic. The search is not case

sensitive, neither is it a complete search. By this I mean that if you search for THE, you will also get THEY and THERE and any other word with THE in it.

Overall, that program falls down on the database query and report areas, but as a first version of a new style of program it isn't too bad. If the author can improve both of the above parts of the program, it will be an excellent program. Registration is US\$49.00 and ImageAccess comes on only one 360k diskette.

Fractal Graphics

Fractal Graphics is a drawing program with a difference! Like most drawing programs, Fractal Graphics allows you to use either the keyboard or the mouse to control the cursor, and create pictures on the screen from dots and lines. Fractal Graphics is different! It uses a powerful new tool for drawing. This tool is called a fractal template. You create a fractal template, and then use this template to do your drawing. Shortly you will find that you are able to create amazingly realistic scenes on your computer screen. Because Fractal Graphics is designed for the person who can't draw, if you have the least amount of ability in this field, you can excel with Fractal Graphics.

What does your system require to be able to run Fractal Graphics? Well, your system had best be an XT or better IBM compatible with at least 384k of memory. CGA or better graphics are required as is DOS v.2.1 or better. Optional components are a Microsoft compatible mouse, and a maths co-processor. A hard disk isn't required, as the program will run off floppies, but it does make Fractal Graphics operate a lot quicker.

What can Fractal Graphics do? Well, this is where it gets exciting. Being a drawing package, of course you can draw with it. But

when you draw, instead of using a point as your drawing cursor you use a fractal. There are approximately forty fractal templates on the diskette for you to choose from. You can draw or paint the current fractal template in the present position, move it and then draw or paint again. The effects are outstanding. If you could draw and use the fractal templates to their best, or even create your own, I am sure that the effect would be absolutely incredible.

I played with the drawing and painting parts of the program for over four hours and had a great time. The effects that I got, whilst not very realistic, were certainly out of this world.

Fractal Graphics comes on only one 360k diskette, and has a registration fee of US\$59.00. The author promises a 120 page manual and guidebook as well as another 150 fractal templates. The on-line help that the program has is certainly enough to get you started, but if you wanted to get into Chaos theory and much more, the manual and guidebook will be required.

Well people, that's about all we have time for this month. If you require any of the programs listed above or any of the others that have been reviewed over the last 3 years, please send a cheque or money order with your order to:

MacroDisk
Unit 2, 47 Vernon Street
South Kingsville Vic 3015

Each 360k 5.25" diskette costs \$7.50 and each 720k 3.5 diskette costs \$15.00. Please do not forget that it is up to you to specify 2 programs to go on each 3.5 diskette. Allow 14 days for delivery.

IBM PC and Compatibles Mail Order Software Catalogue

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Heat Wave (Superboat racing) /3.5 or 5.25		59.95	Colorado /3.5 or 5.25	CEH/512	69.95	Mortville Manor (dig. sounds) /3.5 or 5.25 ...	CE/512 39.95
Horse Racing /5.25	CET/210	69.95	Conquest of Camelot /dual (S)	CEVH/512	69.95	MTV's Remote Control: TV trivia game /3.5 or 5.25	29.95
Horse Racing: Stable Owner's module		39.95	Covert Action /dual		99.95	Muppet Advent: Chaos at Carnival /3.5 or 5.25	29.95
Indianapolis 500 /dual (S)	EV/384	59.95	Crossword Magic /5.25	C/128	69.95	Murder Club /3.5 or 5.25	ECVH/384 89.95
International Soccer /dual		49.95	Crossword Mania /3.5 or 5.25	C/256	34.95	Nightbreed Movie /3.5 or 5.25	69.99
Italia '90: World Cup Soccer /dual		59.95	Curse of Azure Bonds /dual		49.95	Nightmare on Elm Street /5.25	54.95
Italy 1990		59.95	Curse of Ra /3.5 or 5.25	EV/512	59.95	Nightshift /3.5 or 5.25	59.95
Jack Nicklaus 90 Vol 3 /3.5 or 5.25		59.95	Dark Heart of Uukrul /dual		39.95	Nobunaga's Ambition 1 /3.5 or 5.25	89.95
Jack Nicklaus Courses Vol 1 /3.5 or 5.25 ...	CEH/384	39.95	Darkside /5.25		54.95	Nobunaga's Ambition 2 /3.5 or 5.25	99.95
Jack Nicklaus Courses Vol 2 /3.5 or 5.25 ...	CEH/384	49.95	David Wolf Secret Agent /3.5 or 5.25 (S) ...	CEVH/640	69.95	Off Shore Warrior /5.25	59.95
Jack Nicklaus Unlimited Golf + course design /3.5 or 5.25		79.95	Day of the Viper /3.5 or 5.25 (E/V need 512k)CH/384		59.95	Ogre (from Board Game) /5.25	49.95
Kick Off 2 /3.5 or 5.25		79.95	Death Trak /dual (S)	CEV/512	69.95	Oil's Well /dual (5.25" are 1.44mbs) (S)	CEV/512 69.95
Lakers vs Celtics (Basketball) /dual		49.95	Defender of Crown /dual		69.95	Omnicon Conspiracy /dual (S)	CE/512 79.95
Links : Challenge of Golf /3.5 or 5.25 (S)			Die Hard /dual (S)	CEV/512	59.95	Ooze /5.25	49.95
[286/386 or faster]	VMD/640	69.95	Don't go alone /3.5 or 5.25 (S)	CE/384	59.95	Operation Stealth /3.5 or 5.25 (S)	CEVTH/640 59.95
Lombard Rally /5.25		59.95	Dragon Wars /dual		59.95	Pawn, The /5.25	69.95
Low Blow /3.5 or 5.25	CET/512	29.95	Dragons Lair 2 /3.5 or 5.25	CEVT/640	99.95	Penthouse Jigsaw /dual	69.95
Mario Andretti's Racing Chall /3.5 or 5.25 (S)			Dragons of Flame /dual		59.95	Personal Nightmare /5.25	CE/ 79.95
[640k recommended]	CEVMT/512	49.95	Dragonstrike /3.5 or 5.25		59.95	Pipe Mania /3.5 or 5.25	CEVH/ 59.95
Masterblazer /3.5 or 5.25		59.95	Drakkhen /dual		79.95	Police Quest 1 /dual	CEVH/256 49.95
Microprose Soccer /3.5 or 5.25	CE/ 59.95		Dream Warrior /5.25		29.95	Police Quest 2 /dual (S)	CEVH/512 59.95
Motocross /dual	CET/512	59.95	Driller /5.25		69.95	Pool of Radiance /dual	CET/384 49.95
PGA Tour Golf /dual		59.95	Dungeon Master /5.25		69.95	Ports of Call: maritime simulation /5.25	59.95
Powerdrift /5.25		59.95	E-Motion /3.5 or 5.25		59.95	Prince of Persia /dual	69.95
Pro 4 Soccer Simulator /dual	CE/256	49.95	Escape From Hell /3.5 or 5.25	CEH/512	49.95	Psychic War /3.5 or 5.25	CEVH/384 79.95
Pro Tennis Tour /3.5 or 5.25	CEH/ 49.95		Eye of Horus /dual	CE/512	69.95	Punisher /dual	89.95
Sharkey's 3D Pool /dual		69.95	Eye of the Beholder /dual (S)	CEVMT/512		Quest for Glory 1 /dual (S)	CEVH/512 79.95
Skidoo (Snow-mobile racing) /5.25		39.95	[VMT need 640k]		59.95	Quest for Glory 2 /dual (S) [1.2mb 5.25"]	CEVHT/640 79.95
Street Rod 1 /dual		49.95	Faces Tris 3 /dual		59.95	Quest of the Time Bird /5.25	C/ 59.95
Street Rod 2 /dual	ECTH/512	49.95	Faery Tale Adv. Bk 1 /dual (E needs 640k) ...	C/512	49.95	Questron 2 /dual	49.95
Streets Sports Baseball /5.25	C/256	39.95	Family Feud /5.25		49.95	Railroad Tycoon /dual	89.95
Stunt Car Racer /dual		69.95	Fiendish Freddy /3.5 or 5.25	EVT/512	59.95	Red Storm Rising /3.5 or 5.25	CE/ 59.95
Stunt Driver /3.5 or 5.25	CE/640	59.95	Friday Night Poker /3.5 or 5.25	CE/256	59.95	Rise of the Dragon /3.5 or 5.25 Hi-Density (S)	
Super Off Road /dual (S)	ECT/512	59.95	Fun House: TV game /3.5 or 5.25		29.95	[286 or faster]	VD/640 79.95
Superstar Soccer /5.25	CE/256	59.95	Future Wars /3.5 or 5.25		59.95	Romance of Three Kingdoms /3.5 or 5.25	109.95
Test Drive 2: Calif. Challenge /3.5 or 5.25			Galleons of Glory /dual (S)	CEVMT/512	79.95	Santa Paravia /5.25	29.95
(EGA needs 512k)	CH/384	39.95	Garfield Trivia Game /3.5 or 5.25	C/256	39.95	Satan /3.5 or 5.25	59.95
Test Drive 2: European Challenge /3.5 or 5.25		39.95	Genghis Khan /3.5 or 5.25		89.98	Savage Empire /5.25 Hi-density (S)	
Test Drive 2: Musdecars /3.5 or 5.25			Ghosts & Goblins /3.5 or 5.25		59.95	- needs expanded RAM for music/286 ..	VEMTD/640 69.95
(EGA needs 512k)	CH/384	59.95	Gold Rush /dual (S)	CEVH/256	49.95	Scapghost /dual	CE/512 49.95
Test Drive 2: Supercars /3.5 or 5.25			Grand Slam Bridge /5.25		69.96	Scraples /5.25	CE/256 49.95
(EGA needs 512k)	CH/384	39.95	Hard Nova /dual	EVMT/512	59.95	Secret of Monkey Island /3.5 or 5.25	69.95
Test Drive 2: The Duel /3.5 or 5.25			Harpoon /dual	CEVT/640	69.95	Secret of Silver Blades /3.5 or 5.25 (S)	CE/512 49.95
(EGA needs 512k)	CH/384	49.95	Hidden Agenda /5.25		99.95	Shogun /5.25	CEV/384 69.95
Test Drive 3: The Passion /dual		79.95	Hillstar /dual	CE/384	59.95	Sierra Starter Pack /3.5 or 5.25	79.95
Turbo Cup /5.25 (with Car)		59.95	Hoyle's Book of Card Games - 1 /dual (S)	CEVH/512	69.95	Silpheed /dual (S)	CEVH/512 59.95
TV Sports Basketball /5.25	CEV/512	69.95	Hoyle's Book of Card Games - 2 /dual (S)	CEVH/512	69.95	Sim City /dual (EGA needs 640k)	CHT/512 89.95
TV Sports Football /5.25	E/512	69.95	Indiana Jones Last Crusade/dual (S)	CEVH/384	69.95	Sim City Graphic Set 1 /3.5 or 5.25 (needs SimCity)	
W/Class L/Board RealSound /dual	CEVH/384	69.95	Infestation /dual		69.95	Ancient Asia/Medieval Times/Wild West	CEVTH/ 59.95
Wayne Gretzky Ice Hockey /5.25		69.95	Ingrid's Back /5.25		49.95	Sim City Graphic Set 2 /3.5 or 5.25 (need SimCity)	
World Cup Soccer /dual		59.95	Iron Lord /5.25		59.95	Future USA/Future Europe/MoonColony ..	CEVTH/ 59.95
			It came from the Desert /5.25	CEV/512	69.95	Sim City Terrain Editor /3.5 or 5.25	34.95
			Jones in the Fast Lane /dual (S)	CEV/512	69.95	Sim Earth /dual	EMVTH/640 109.95
			Kings Quest 1 /dual	CEVH/256	49.95	Ski or Die /3.5 or 5.25	ET/384 29.95
			Kings Quest 1 enhanced /dual	EV/512	69.95	Slots and Cards /5.25	CEV/ 59.95
			Kings Quest 2 /dual	CEVH/256	69.95	Sorcerian /dual (S)	EV/512 69.95
			Kings Quest 3 /dual (S)	CEVH/256	69.95	Space Max /5.25	C/192 69.95
			Kings Quest 4 /dual (S)	CEVH/512	69.95	Space Quest 1 /dual	CEVH/256 49.95
			Kings Quest 5 /3.5 (S) VGA version			Space Quest 2 /dual (S)	CEVH/256 59.95
			[1.4mb 3.5"]	EMVT/512	89.95	Space Quest 3 /dual (S)	CEVH/512 59.95
			Kings Quest 5 /5.25 (S) VGA version			Space Rogue /3.5 or 5.25 (VGA needs 512k)CET/384	69.95
			[1.2mb 5.25"]	EMVT/512	89.95	Spellcasting 101 /3.5 or 5.25 (S)	CEVD/512 79.95
			Kings Quest 5 /dual (S) EGA version			Scrabble De Luxe /dual	59.95
			[1.2mb 5.25"]	EMVT/512	99.95	Star Command /5.25	79.95
			Knights of Legend /5.25	CET/384	69.95	Star Fleet 2 /5.25	CE/512 69.95
			Lap Top Chess /3.5	C/256	52.95	Star Trek (Next Gen) /5.25	49.95
			Legend of Djel /5.25		49.95	Star Trek V /3.5 or 5.25 (needs 286 or 386)EVT/640	69.95
			Legend of Faerghail /3.5 or 5.25	CEH/640	69.95	Steel Thunder /5.25	CEV/384 49.95
			Leisure Suit Larry 1 /dual	CEVH/256	69.95	Stryx /5.25	EV/640 59.95
			Leisure Suit Larry 2 /dual (S)	CEVH/512	69.95	Tangled Tales /3.5 or 5.25	44.95
			Leisure Suit Larry 3 /dual (S)	CEVH/512	69.95	Teenage Queen /5.25 (Strip Poker)	CE/ 59.95
			Leisure Suit Larry 1,2,3 Pack /3.5 or 5.25		99.95	Tempus /5.25	79.95
			Lemmings /5.25		69.95	Terran Envoy /5.25	CE/512 49.95
			Lexi-Cross /dual		49.95	Tetris /dual	CEH/256 59.95
			Life and Death 1 /dual	CE/512	59.95	Thexder 1r /dual (S)	CEVH/256 59.95
			Life and Death 2 /5.25 (S)	EVTD/640	59.95	Thexder 2 - Firehawks /dual	79.95
			Lightspeed /dual		99.95	Third Courier, The /3.5 or 5.25 (S)	
			Living Jigsaws (animated) /3.5 or 5.25		69.95	(VGA needs 512k)	CEH/512 59.95
			Loom /3.5 or 5.25	ECV/512	69.95	Titan /5.25	59.95
			Loopz /5.25		59.95	Tournament Bridge /5.25	CE/128 89.95
			Lord of the Rings /3.5 or 5.25		59.95	Treasure Trap (Deep Sea Diving) /3.5 or 5.25	59.95
			Lords of the Rising Sun /dual	EV/512	69.95	Trivial Pursuit Genus /dual	49.95
			Lost Patrol /3.5 or 5.25		69.95	Tunnels & Trolls - Crusaders of Khazan /dualCET/	59.95
			Magic Candle 1 /3.5 or 5.25	CE/256	69.95	Ultima 4: Quest of the Avatar /3.5 or 5.25	79.95
			Manhunter 1 New York /dual	CEVH/256	59.95	Ultima 5: Warriors of Destiny /3.5 or 5.25 (S)CEVH/640	79.95
			Manhunter 2 San Francisco /dual (S)	CEV/256	69.95	Ultima 6: False Prophet /5.25 (needs 640k)	84.95
			Mega Traveller /5.25		105.95	Ultima Trilogy: 1, 2 and 3 /5.25	79.95
			Midwinter /dual	TECMV/640	89.95	Ultimate Casino Gambling /5.25	CE/256 59.95
			Might & Magic 1 /5.25	CEH/256	49.95	Usurper, The /dual	59.95
			Might & Magic 2 /5.25	CEH/256	49.95	Vegas Gambler /dual	49.95

PC COMPATIBLES MAIL ORDER

War of the Lance /dual	49.95
Welltris /dual	CEH/256 59.95
Wheel of Fortune /5.25	44.95
Where Time Stood Still /5.25	61.95
Win, Lose or Draw 2E: from TV game /3.5 or 5.25	29.95
Windwalker /3.5 or 5.25	CEVH/384 59.95
Wolf Pack /dual	CEVH/512 89.95
Wonderland /5.25 (S)	
[no graphics with CGA]	CEVMHD/640 79.95
X-Men 1 /dual	69.95
X-Men 2 /dual	89.95
Xenon 2 /dual	69.95
Zak McKracken /dual	CEVH/256 59.95
Zeldiand /dual	CEVMHT 79.95
Zork Trilogy /dual	CEH/128 69.95
Zork Zero /dual	CEV/384 69.95

TUTORIALS

Book-keeping (to Trial Bal) /dual	199.00
Financial Accounting Tutor (FANA) /5.25	199.00
lankey 2 Finger Typist /5.25	59.95
lankey Crash Course for beginners /5.25	59.95
Introduction Amstrad PC1512 & 1640 Cse /5.25	59.95
Introduction Amstrad PC20 Course /3.5	59.95
Introduction IBM PC/XT/AT & Compatibles /5.25	59.95
Introduction to Amstrad PC2086 /3.5	59.95
Introduction to Amstrad PPC Course /3.5	59.95
Mastering Your PC: tutorial /5.25	39.95
Mavis Beacon Teaches Typing /dual	CETH/256 69.95
Perfect Typing /5.25	C/256 29.95
Speed Read /5.25	99.95
Typing Tutor IV /5.25	C/128 69.95
Typing Tutor with Word Invaders /5.25	49.95

UTILITIES

Back Up Pro /dual	CET/640 89.95
Disco (personalised menu system) /5.25	99.95
Disk Tools /5.25	29.95
Dos-RX /5.25	64.95
Gift List /5.25	24.95
Lottery Trend Analysis /3.5 or 5.25	CH/256 34.95
Lottery Wheel Analysis /3.5 or 5.25	C/256 34.95
MS-Quickbasic Compiler /3.5 or 5.25 (also for OS/2)	185.00
MS-QuickC /3.5 or 5.25	185.00
MS-Windows V.3.0 /3.5 or 5.25	249.00
Music Construction Set /5.25	29.95
PC Protection /5.25	C/256 39.95
Program Director /5.25	CEH/128 95.95
Recall (quick storing & retrieving) /5.25	29.95
Tasprint Style writer /3.5 or 5.25	95.00
Xtree Pro /3.5 or 5.25	179.00
Xtree Pro Gold /3.5 or 5.25	199.00
Xtree (v2.0) /3.5 or 5.25	79.00

WAR/MILITARY/SIMS

A-10 Tank Killer /5.25 or 3.5 (S)	CEVH/640 69.95
Air Combat /dual	69.95
Ancient Art of War at Sea /dual	79.95
Ancient Art of War /dual	79.95
ATF 2 /3.5 or 5.25 (EGA/VGA version)	EV/256 69.95
ATF 2 /5.25 (CGA version)	C/256 69.95
Battlehawks 1942 /dual	CEVH/384 69.95
Blue Max /dual (S) [VGA needs 640k]	CEVMT/512 69.95
Carrier Command /3.5 or 5.25	59.95
Command HQ /dual	89.95
Conflict in Europe /dual	69.95
Das Boot (including book) /dual	69.95
Destroyer /3.5	49.95
F-15: 2 Strike Eagle /3.5 or 5.25	CEVH/384 69.95
F-16: Combat Pilot /3.5 or 5.25 (EGA version)	E/384 59.95
F-16: Combat Pilot /5.25 (CGA version)	C/384 59.95
F-16: Falcon /dual	CE/256 59.95
F-19: Stealth Fighter /3.5 or 5.25	CEVH/384 109.95
Fighter Bomber /5.25	CEVH/ 69.95
Fire and Forget 1 /5.25	49.95
Fire and Forget 2 /dual	59.95
Gunboat /3.5 or 5.25	CEVH/512 59.95
LHX Attack Chopper /3.5 or 5.25 (640k best)	CEV/512 69.95
MS Flight Simulator Vers 4 /3.5 or 5.25	CEVH/384 95.00
MS Aircraft & Scenery Designer /dual	
(requires MS Flight Simulator v.4)	CEVD/640 69.00
Nights of the Sky /dual	99.95
Operation Harrier /3.5 or 5.25	CEV/ 59.95
PHM Pegasus /5.25	59.95
Red Baron /dual	79.95

Renegade Legion: Interceptor /5.25	59.95
Second Front /5.25	59.95
Secret Weapon Luftwaffe /3.5 or 5.25	69.95
Sherman M4 /3.5 or 5.25	54.95
Silent Service 2 /dual	89.95
Storm across Europe /5.25	29.95
Team Yankee /dual	89.95
Their Finest Hour /3.5 or 5.25 (S)	CEVH/512 69.95
UMS 2 /dual	89.95

PUBLIC DOMAIN/SHAREWARE

PC-Soft #01: 19 BASIC2 (Amstrad) utilities and games /5.25 (needs Basic2)	10.00
PC-Soft #02: Eight games /3.5 or 5.25	12.50
PC-Soft #03: Twenty-four utilities /3.5 or 5.25	12.50
PC-Soft #04: Six games /3.5 or 5.25	12.50
PC-Soft #05: Twenty-three utilities /3.5 or 5.25	12.50
PC-Soft #06: Ford Driving Simulator v2 (not mono screens) /3.5 or 5.25	12.50
PC-Soft #07: Funnels etc. (Maths)/Word Processing for Kids (Age 8 and up) /3.5 or 5.25	12.50
PC-Soft #08: Junior Word Games (Age 8 and up) /3.5 or 5.25	12.50
PC-Soft #09: Educational Games for Kids - 1 (Age 4 to 8) /3.5 or 5.25	12.50

PC-SIG SHAREWARE

4-DOS /3.5 or 5.25 - command line control	19.95
Amy's First Primer /3.5 or 5.25 - pre-reader	C/128 19.95
Auto Menu /3.5 or 5.25 [Hard drive recommended]	19.95
Crossword Creator /3.5 or 5.25	-/256 19.95
Dan CAD /3.5 or 5.25 - wire frame, design	C/640 19.95
Express Check /3.5 or 5.25 - reconciler	-/256 19.95
Challenger Games /3.5 or 5.25 - graphic advs.	C/128 19.95
Crazy Shuffle /3.5 or 5.25 - concentration	CEVM/190 19.95
Family History /3.5 or 5.25 - genealogy	-/128 19.95
Fast Bucks /3.5 or 5.25 - home accounts	-/128 19.95
Fast Invoice /3.5 or 5.25 - invs/purchase ords etc	-/128 19.95
Frac /3.5 or 5.25 - 3D Tetris style game	E/256 19.95
Fractal Graphics /3.5 or 5.25	HCEV/384 19.95
Google Math /3.5 or 5.25 - math game	C/384 19.95
Hugo's House of Horrors /3.5 or 5.25 - adv	EVD/360 19.95
Kid Games /3.5 or 5.25 - 2 to 10 yrs educ	-/128 19.95
Line Wars /3.5 or 5.25 - alone or over phone	CE/ 19.95
Mahjong /3.5 or 5.25	HCE/ 19.95
Mega-CAD /3.5 or 5.25	EVD/512 19.95
Mortplan Loan evaluator /3.5 or 5.25	-/256 19.95
Newkey /3.5 or 5.25 - keyboard redefiner	-/35 19.95
PC Chess /3.5 or 5.25	-/128 19.95
PC Fastype /3.5 or 5.25 - typing tutor	C/ 19.95
PC Jigsaw /3.5 or 5.25	CEVMH/ 19.95
PC Key Draw /3.5 or 5.25 - graphics (needs 2 floppies)	19.95
PC Write /3.5 or 5.25 - word processing	19.95
Printer Utilities /3.5 or 5.25	-/256 19.95
Race /3.5 or 5.25 - driving game	CE/ 19.95
Simply Labels /3.5 or 5.25	256/ 19.95
SR-Info /3.5 or 5.25 - related database .. 2 floppies/400	19.95
Super Pinball /3.5 or 5.25 - arcade	C/ 19.95
Typesetter PC /3.5 or 5.25 - desktop publ.	CEVH/512 19.95
Vegas Johnny's Draw Poker /3.5 or 5.25	-/256 19.95
Virus Scan /3.5 or 5.25	-/19 19.95
Weak Link /3.5 or 5.25 - needs RS232 port + cable	19.95

ACCESSORIES

Disk Drive Head Cleaner /3.5	17.95
Disk Drive Head Cleaner /5.25	17.95
Disks: 10 Verbatim Valulife Double Density /3.5	35.00
Disks: 10 Verbatim Valulife Double Density /5.25	18.00
Disks: 10 Verbatim Valulife High Density /3.5	60.00
Disks: 10 Verbatim Valulife High Density /5.25	30.00
Dust Cover: Amstrad PC1512/1640 - keyb'd & mon	36.00
Dust Cover: Amstrad PC20 - unit only	18.00
Dust Cover: Amstrad PC2086 - keyb'd & mon	39.00
Dust Cover: Amstrad PC2286/2386 - keyb'd & mon	39.00
Dust Cover: Epson LQ500, LX800	17.00
Dust Cover: Other clones (please identify) - keyb'd	18.00
Dust Cover: Other clones (please identify) - mon/system	25.00
Dust Cover: PS/2 - keyb'd	18.00
Dust Cover: PS/2 - mon/system	25.00
Dust Cover: Star NX1000, NX 24-10, NB 24-10	17.00
Dust Cover: Star NX15, NB 24-15	30.00
Ribbons: Epson FX800, LX800, 850	10.95
Ribbons: Epson LQ500, 800, 850	15.95
Ribbons: Epson LX80, 86, 90	8.95
Ribbons: Epson MX/FX/RX 100, 100+, 105, 105+	10.95

Ribbons: Star LC24-10, NX24-10	15.95
Ribbons: Star NX1000, LC10	10.95

PERIPHERALS

Ad-Lib Sound Card	199.00
Adara AHS-405C Colour Hand Scanner	1395.00
GLUIS 321 A4 Page Scanner (200 dpi)	895.00
Joystick: Anko Precision	49.95
Joystick: Anko Standard	39.95
Joystick Games Card - 2 ports	49.95
Joystick: JS-606 Pistol Grip	49.95
Joystick: Junbo	29.95
Joystick: Konix Speed King (hand held)	49.95
Lightscan 200H Mini Hand Scanner	199.00
Lightscan 320F Flatbed Scanner (300 dpi)	P.O.A.
Lightscan 400J Hand Scanner	399.00
Lightspeed 400P A4 Hand Scanner	1595.00
Mouse Bus Card for X-30MD: frees serial port	46.95
Mouse: Champ AD-M36 + Image and Graphics software	99.00
Mouse: Genius XM-6X serial + Dr Halo /5.25	79.95
Mouse: Qtronic X-30MD serial + Dr Halo, pad, etc. /5.25	119.95
Printer Cable: parallel	29.95
Qtronic Hand Scan MS-7400 (400dpi) 64 grey shades	395.00
Sound Source (sound add-on for Disney games)	99.95
Soundblaster Card	349.00

PUBLICATIONS

Abacus Quick Ref. Guide: dBase 3	24.95
Abacus Quick Ref. Guide: GW-Basic	24.95
Abacus Quick Ref. Guide: Lotus 1-2-3	24.95
Abacus Quick Ref. Guide: MS-DOS	24.95
Abacus Quick Ref. Guide: MS-Word	24.95
Abacus Quick Ref. Guide: Word Perfect	24.95
Batch File Powertools + 5.25 disk	69.95
Books for Beginners: Cobol	36.95
Books for Beginners: dBase 4	36.95
Books for Beginners: Excel	36.95
Books for Beginners: GW-Basic	36.95
Books for Beginners: Lotus 1-2-3	36.95
Books for Beginners: Microsoft Word	36.95
Books for Beginners: Microsoft Works	36.95
Books for Beginners: MS-DOS	36.95
Books for Beginners: Unix and Xenix	36.95
Books for Beginners: Ventura	36.95
Computer Viruses	49.95
Finding Free Software	34.95
Laptop Users Guide	36.95
Lotus Agenda	39.95
Microcomputer Troubleshooting & Repair	49.95
Microref Keyb'd Template: dBase 3 Plus	19.95
Microref Keyb'd Template: dBase 4	19.95
Microref Keyb'd Template: Excel	19.95
Microref Keyb'd Template: Lotus 1-2-3 v2.01	19.95
Microref Keyb'd Template: Lotus 1-2-3 v2.2	19.95
Microref Keyb'd Template: MS-Word v5	19.95
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GAME PLAY

TEENAGE MUTANT
HERO TURTLES

SIM CITY

RICK DANGEROUS 2

VERDICTS

- ■ ■ ■ ■ Outstanding
- ■ ■ ■ ■ Above average
- ■ ■ ■ Average
- ■ ■ Fair
- ■ Waste of money

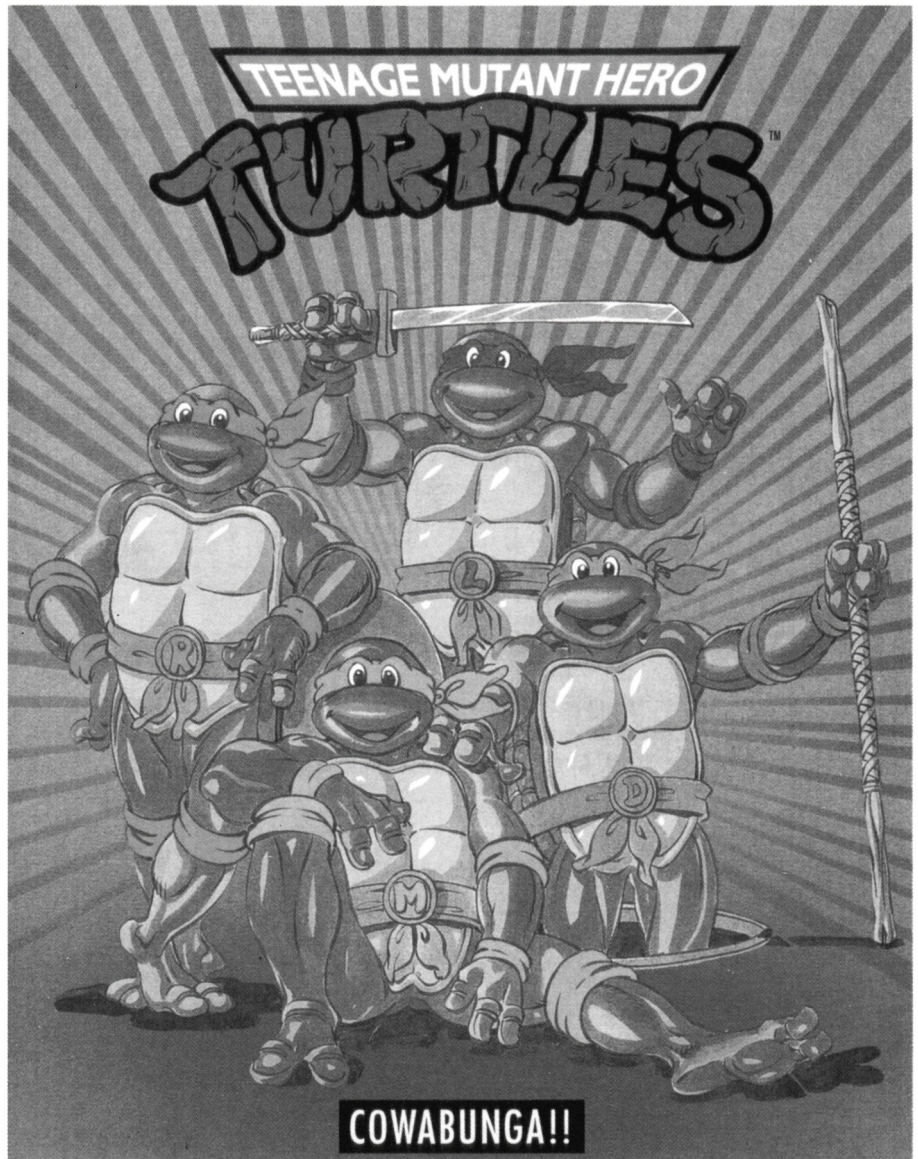
TEENAGE MUTANT HERO TURTLES

- Published by Imageworks • Available through The PC Mag
- Suitable for Amstrad 464, 664 and 6128
- Prices: Disk \$42.95, Tape \$32.95

At first I wondered why this game had 'hero' instead of 'ninja' in the title. I can only assume that it is not a licence from the film as the plot is different - hence the different name. But all your favourite characters are here in stunning colour and heaps of action.

As you would expect, April

O'Neil has been kidnapped by Shredder and the reptilian four are sworn to rescue her. The action starts above ground, dodging bulldozers and the odd ninja before entering the sewers. Underground are giant bees, frogs and the like doing their utmost to hinder progress towards the damsel in distress.



As there are four turtles on the job, you effectively have four lives. Once a turtle fails and is captured, you can choose who will take his place. Each turtle has a different weapon but it is used in the same way to kill the nasties. If you don't succeed in destroying the nasties in the first hit, your energy level reduces, and when the level is at zero, you're a goner! However, scattered around the sewers are pizzas (fallen off the back of a home delivery truck?) to replenish strength and extra weapons.

Before rescuing April, you must defeat an 'end of sewer' baddy or two but you will find that they put up more of a battle than the others. The next stage is to defuse a number of bombs which have been planted inside a dam. You need to be quick here as there is a timer on the bombs and if you fail it's the dreaded "Game Over" message. The third level finds you back above



Michaelangelo dispatching an end-of-level baddy

ground in a turtle wagon in search for a special machine which will turn Shredder back to a man.

Teenage Mutant Hero Turtles had excellent graphics and plenty of colour. It's perhaps not aimed

at more mature gamers wanting a bit more sophistication, but the young 'uns will get a heap of fun out of it.

VERDICT ■ ■ ■

SIM CITY

- Published by Infogrames • Available through The PC Mag
- Suitable for Amstrad 464, 664 and 6128
- Prices: Disk \$44.95, Tape \$34.95

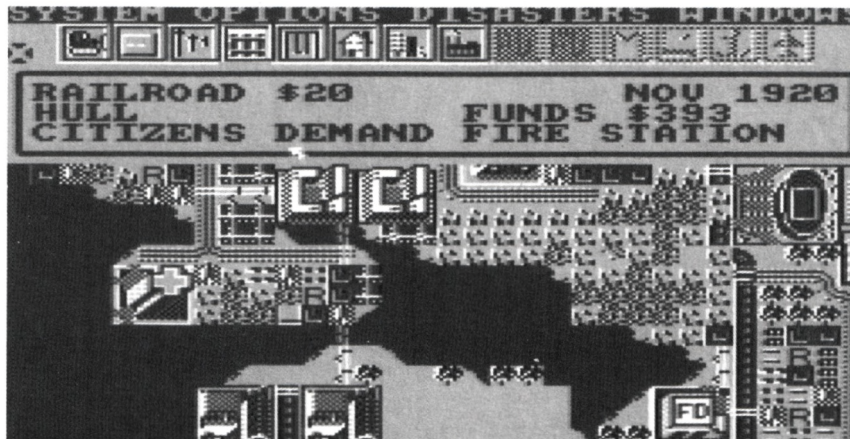
Sim City has been, and still is, an extremely popular game on the IBM and Macs, and has been used quite widely in schools. It is a city simulator and you are placed in the hot seat as a yet-to-be-constructed town's mayor. With a \$20000 budget, you have to decide where to put the roads, railways, buildings, and set the taxes to name just a few responsibilities.

It all needs careful planning. You'll need decide upon how many houses to build and the number of people the town is going to support. In turn, the population must be given work so

the number of factories constructed is important. The residential population will also

support commercial centres, so space has to be allocated to these. Then there's the problem of providing essential services (power etc.) and transport facilities to move everyone around.

The program doesn't expect you to build everything yourself, merely provide the land for some



AMSTRAD CPC

enterprising person to do it for you. If you make the mistake of putting a factory right in the middle of a residential area or a nuclear power station in the middle of a commercial zone, the residents or owners will be most upset. This will cause the property values to decrease and the income from taxes likewise.

It is important to keep everyone happy, and the game allows you to start with substantial funds and easy going people at the lowest level. It's a good place to start and get to understand how the game should be played but you'll soon want to move to a higher and more competitive level.

Every game will generate a different style of landscape, but will always provide choice living areas on the coast with forests and lakes further inland. As the town expands maps showing the pollution levels, crime statistics and traffic problems are accessed by using pull-down menus. If you are really adventurous you can switch on disasters such as a tornado, earthquake, flood or even an air crash.

The interesting aspect and whole point of the game becomes clearer as the town increases in size. The problems increase with demands from the population on services and amenities while your popularity probably decreases.

It is easy to see why Sim City has been used as a teaching aid in schools. It requires much forward planning, reasoning and logical thought to achieve a balanced and thriving community. It is sufficiently different from any other game to keep players absorbed for hours and hours. Don't expect amazing graphics or sound - you won't get them - but in this type of game they really are not necessary.

VERDICT ■ ■ ■

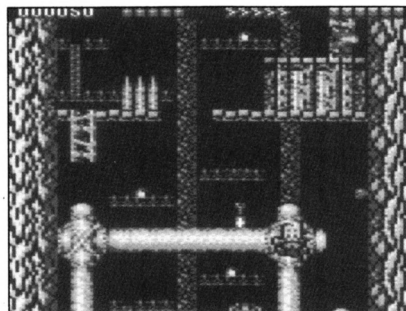
RICK DANGEROUS 2

- Published by MicroStyle • Available through The PC Mag
- Suitable for Amstrad 464, 664 and 6128
- Prices: Disk \$42.95, Tape \$32.95

Rick dangerous has been brought out of retirement to deal with a rather large problem which has appeared in the centre of Hyde Park (in London, England). It's an alien spacecraft! In fact he has much more on his plate than first meets his eyes.

The machine from outer space is the first of five levels of fast paced action he will encounter. Four of the levels can be completed in any order, but all four must be completed before launching into the fifth level.

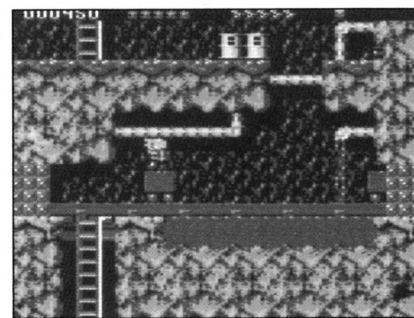
Once inside the spacecraft (after dodging the external fire) he must avoid roaming robots and more laser fire. Success



moves him into the next level where he can take control of the craft and fly away to the planet Freezia with slippery platforms and lethally pointed icicles. There are two other planets to visit, Vegetabilia and the Atomic Mud Mines before the final and sweat inducing last level (assuming you have any energy left in your joystick hand that it!).

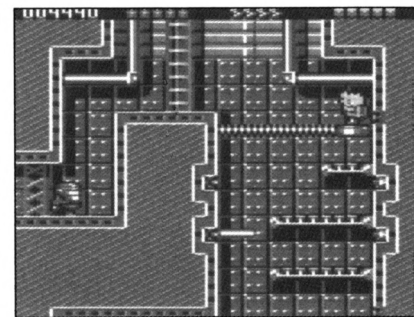
If you have played the original Rick Dangerous and liked it, you will be even more happy with this sequel. It can be played using the keyboard or, as I prefer, with a joystick. The screens scroll horizontally or vertically and if

you can keep a map going you'll find it very useful. Each level has a different set of graphics, its own tune and with it a different set of traps and baddies to avoid or kill. You will become quite proficient at ducking and kicking buttons to turn off laser fire in the first level



and your reactions will be nicely tuned for the next, more difficult level.

Whilst Rick Dangerous 2 may fall into the older blocky type platforms game, it is clearly the work of a dedicated team of programmers, whose intention was to produce a well designed, colourful and action packed



game with plenty of puzzles. I am pleased to report that they succeeded one hundred percent.

VERDICT ■ ■ ■ ■

Twin Type-ins

Two short type-ins - the first is a game requiring quick reactions and the second a sound demonstration.

Catch-it may not be in the rave games category (it's only 39 lines long), but it does give a good example of how to develop a small game and have a bit of fun at the same time.

The idea is to use the "z" and "\ " keys to move a basket to the left or right and catch the falling bank notes. At the same time you must avoid the brick walls. If you find you've got some arrows beside the bricks don't worry - so did we - and we can't work out why they are there.

```

1 'Catchit game
2 'The PC Mag - June 91
3 'Catch the money but avoid the bricks
4 'Use z and \ to move left or right
140 DEFINT a-z:MODE 0:BORDER 0:INK 0,0
150 INK 1,26:INK 2,19:INK 3,6:INK 4,24:INK 5,15
160 SYMBOL 240,0,239,239,239,0,247,247,247
170 SYMBOL 241,255,221,169,189,157,189,141,255
180 SYMBOL 242,16,84,85,213,255,254,124,60
190 ENV 1,15,-1,2:ENV 2,15,-1,15:ENT-1,8,-4,1
200 high=0:DEF FNchr=INT(RND*618)
210 WHILE NOT asleep
220 x=320:score=0:dead=0:hue=&BBDE
230 WHILE NOT dead
240 TAG
250 CALL hue,1,2,3:MOVE FNchr,398:PRINT CHR$(240)
260 IF RND<0.6 THEN 290
270 MOVE FNchr,398:PRINT CHR$(240);
280 CALL hue,1,2:MOVE FNchr,398:PRINT CHR$(241);
290 CALL hue,1:MOVE x,14:PRINT CHR$(242);

```

```

300 TAGOFF
310 PRINT CHR$(30)CHR$(11)
320 pixel=TEST(x+12,16)
330 IF pixel=2 THEN score=score+10:SOUND 135,100,0,0,1,1
340 IF pixel=3 THEN dead=-1
350 dx=4*(INKEY(71)=0 AND x>2)-4*(INKEY(22)=0 AND x<618)
360 x=x+dx:score=score+1
370 WEND
380 SOUND 135,0,0,0,2,,1
390 WHILE SQ(1)<>4
400 col=INT(RND*27).
410 CALL &BD19:BORDER col:INK 0,col
420 WEND
430 CLS:INK 0,0:BORDER 0
440 IF high<score THEN high=score
450 PEN 4:PRINT"SCORE" score "HIGH" high
460 PEN 5:PRINT:PRINT"Press space to play"
470 WHILE INKEY$<>" " :WEND:CLS
480 WEND

```

Soundfx provides a noise demonstration in the form of RSXs. So once loaded, and at the 'Ready' prompt just type IZAP (for example) and listen. You will be advised of any typing errors in the data statements. Note that the "I" is found by hitting both the shift key and the @ at the same time.

```

100 'Sound fx
110 'The PC Mag - June 91
120 'Commands are iExplode
130 '          iBang
140 '          iPing
150 '          iZap
160 '
170 '
180 MEMORY &9CFF
190 a=&9D00
200 s=0
210 FOR d=1 TO 20
220 READ b$
230 FOR c=1 TO LEN(b$) STEP 2
240 f=VAL("&"+MID$(b$,c,2))
250 POKE a,f
260 s=s+f
270 a=a+1
280 NEXT c,d
290 READ e
300 IF e<>s THEN PRINT "Error in data":END
310 CALL &9D00
320 PRINT "RSXs have been installed"
330 NEW
340 DATA 010e9d210a9dcd1
350 DATA bcc9cba30e9d1c9d
360 DATA c32f9dc3459dc371
370 DATA 9dc35b9d4558504c
380 DATA 4f44c542414ec75a
390 DATA 41d050494ec70021
400 DATA 359dc3879d000000
410 DATA 0000000f07101010
420 DATA 001e000000214b9d
430 DATA c3879d0000000000
440 DATA 001f0710101000004
450 DATA 00000021779dc387
460 DATA 9d6400c800c90000
470 DATA 38101010001e0000
480 DATA 0021619dc3879dc8
490 DATA 00c800c800003810
500 DATA 1010001400000000
510 DATA 00c57e4f78cd34bd
520 DATA 23c10470fe0e20f1
530 DATA c9,12152

```

Guide to M/code - 5

If you are suffering withdrawal symptoms because we didn't give you your dose of machine code last month - here's some pretty scrolling to break the drought.

Following on from last time (April 1991), Program 1 below does something a little more useful than putting pretty coloured stripes on the screen.

PROGRAM 1

```

org    &8000
    ld a,1    ;pen 1
    call &bc2c ;scr ink encode
    ld c,25   ;no of lines to scroll
    ld b,0    ;roll screen down
call   loop
    ld a,0    ;pen 0
    call &bc2c
    ld c,25
    ld b,1    ;scroll screen up
call   loop
ret
loop
    push af
    push bc
    call &bc4d ;scr h/w roll
    pop bc
    pop af
    dec c
    push af
    ld a,0
    cp c
    pop af
    jr nz,loop
ret

```

This program scrolls the screen down clearing each line with pen 1 then it scrolls back up again clearing each line to pen 0. This has the effect of clearing the screen by pulling down a curtain then lifting it again, a bit more interesting than just CLS.

The pen number to be used for SCR HR SCROLL needs to be encoded into a form that the computer can understand. The firmware routine to use is at &BC2C and is called SCR INK ENCODE.

The A register is loaded with the pen number, in this case 1, and then the routine at &BC2C is called. This puts the encoded ink number back into the A register ready to be used by the scroll routine &BC4D. The C register is being used as a counter and the program loops until C=0. The check being made with instruction CP C which means compare the contents of C with the contents of A and if not zero then go around the loop again.

The push and pop instructions are there to save the contents of the registers because the firmware routine SCR HW SCROLL changes them.

PUSH AND POP

Push and pop involve using the stack. The stack can be thought of as a metal spike sticking down from the ceiling. When the computer comes across PUSH AF it scribbles down the values held in the register pair AF and pushes a scrap of paper onto the spike. It does the same for the following instruction PUSH BC. You have now pushed two pieces of paper onto the spike hanging from the ceiling.

There are more than two bits of paper hanging on the spike because the computer also uses the stack. When the computer comes across the CALL LOOP instruction it sticks the address of the following instruction on the stack so it can remember where to go when it comes across the return. As there are two returns in the program then there must be two addresses on the stack which the computer is going to use. The other address is where the last return goes to, usually back to Basic.

This use of the stack by both the programmer and the computer is the one reason why machine code programs crash. For example, the first time around PUSH BC will put the value &0019 on the stack and if it isn't popped off again then the computer will treat it as the address to where it should return. At &0019 is the instruction RST 0 which is the machine code equivalent of CTRL + SHIFT + ESC, definitely a crash.

When you write a program using push and pop you must make quite sure that you keep track of what is on the stack and the order in which everything was pushed. Note how the registers are popped in the reverse order to how they were pushed. If you think of pieces of paper on a spike on the ceiling

then it's obvious why. There is an advantage though in that you can use push and pop to swap the contents of two register pairs.

BACK TO SCROLLING

You don't have to scroll the whole screen all at once. You can scroll just a window. This time the firmware routine is SCR SW SCROLL. This scrolls a piece of the screen using software rather than hardware and is consequently slower. You have probably seen the difference before when scrolling windows from Basic.

The effect of SCR SW SCROLL is much the same as SCR HW SCROLL but you also have to specify the area of the screen you want to scroll. This is much the same as defining a window from Basic. There is a slight difference though. In Basic you think of the top left corner of the screen as location 1,1. In machine code you must think of it as location 0,0. Similarly the bottom right corner of a mode one screen is, in machine code, location 39,24.

Program 2 is very similar to the earlier one. The main difference is that it is a window that is being scrolled. The registers H,L,D and E are used for the window co-ordinates.

PROGRAM 2

```

org    &8000
      ld a,1      ;pen 1
      call &bc2c ;scr ink encode
      ld c,10     ;no of lines to scroll
      ld b,0      ;roll screen down
call   loop
      ld a,0      ;pen 0
      call &bc2c
      ld c,10
      ld b,1      ;scroll screen up
call   loop
ret
loop
  push af
  push bc
  ld h,0         ;left column
  ld d,10        ;right column
  ld l,0         ;top row
  ld e,15        ;bottom row
  call &bc50 ;scr s/w roll
  pop bc
  pop af
  dec c
  push af
  ld a,0
  cp c
  pop af
  jr nz,loop
  ret

```

An optional extra

Here's a little bonus which doesn't have much to do with the Machine Code tutorial that's currently running. At worst it may confuse you, in which case ignore it, but to those who do understand what is going on, they may find it of use. It may even save someone 're-inventing the wheel'! Try it anyway, and see what you make of it.

It concerns a point that stumped me when I first started using machine code and that was how to print numbers in decimal (this could be useful for scores etc.).

One answer is to use BCD (Binary Coded Decimal) arithmetic, but the most flexible way is to use a routine such as the one listed below. It repeatedly subtracts powers of ten from the original number, printing the number out digit by digit. Although neither fast nor elegant it does the job, and you might find it useful.

Does anyone know of a better way?

```

printhl ;subroutine to print out the
        ;contents of HL as a five digit
        ;decimal number. Corrupts HL,DE
        ;and A registers.
      ld de,10000
      call digit
      ld de,1000
      call digit
      ld de,100
      call digit
      ld de,10
      call digit
      ld de,1
digit   ld a,255 ;set the counter
loop   inc a
      scf:ccf ;clear carry flag
      sbc hl,de ;subtract DE until
              ;negative
      jp nc,loop
      add hl,de

```

If you would like to respond to the challenge above of producing a neater way of achieving the same result then send your listing with covering letter to:

*The Editor
The PC Mag
1/641 High Street Road,
Mount Waverley, Vic 3149.*

SIX-PACK

TAPES

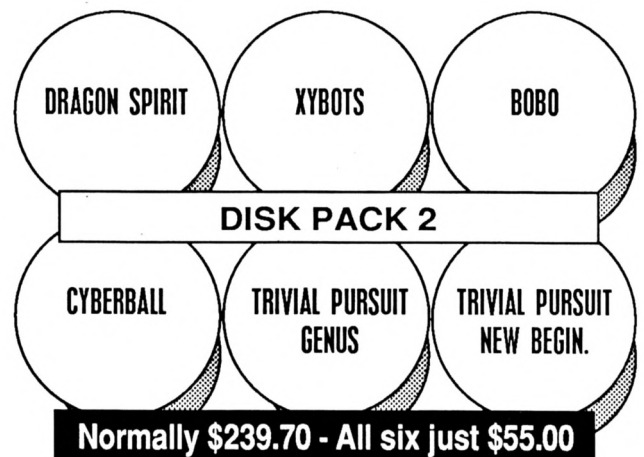


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Combining datafiles

To make better use of disk space or for easier look-up facilities here's the inside information on how to combine two LocoFile datafiles.

To combine datafiles, you need to be able to insert the records from one datafile into the other. It's not possible to do this directly in LocoFile because it would mean opening two datafiles at the same time, whereas LocoFile can only open one datafile at once. However, this doesn't mean you can't combine your datafiles. This is yet another area in which using LocoMail with LocoFile supplies the answer.

THE BASIC PRINCIPLE

The trick is to convert one of the LocoFile datafiles into a LocoMail datafile because in this form it can be inserted into a LocoFile datafile. (A LocoMail datafile is essentially a LocoScript document which holds information in a consistent order - for example, a series of records with items of information laid out in the same way in each record).

The way to convert the datafile is to use LocoMail's ability to extract information from a

LocoFile datafile and insert it into a LocoScript document. In other words, what you do is create a LocoMail master document containing the instructions needed to extract information from a LocoFile datafile. Merge the master document with the LocoFile datafile and save the result as a document on disk.

Once the records have been saved in this way, all that's left to do is use the Insert data option to pull them into the other LocoFile datafile. Below we show you how to combine two datafiles with a worked example.

THE STEPS

We can break down the job of combining two datafiles into 3 steps:

1. Setting up the LocoMail master document
2. Merging the LocoMail master with the first LocoFile datafile and saving the resulting LocoMail datafile to disk

3. Inserting the saved LocoMail datafile into the second LocoFile datafile.

For the purposes of this article, we're referring to the two datafiles we're combining as the Extract datafile and the Target datafile. The Extract datafile is the datafile we are extracting the information from. This information will be saved as a LocoMail datafile. The Target datafile is the datafile we're inserting the LocoMail datafile into.

It doesn't matter if the two datafiles you want to combine have different items. For example, the Extract datafile may have more or less items than the Target datafile and they may use different item-names. You can choose which items to extract, but what you need to ensure is that the items you decide to extract from the Extract datafile have an item that you can slot the information into in the Target datafile.

In the example we're looking at here, we want to combine two name and address datafiles which have a different structure, as you can see in the box on the next page.

We want to extract the name, address and work phone no from the Extract datafile and insert them into the Target datafile as contact, address and phone number. We'll look first at the instructions to extract these items from the Extract datafile.

1. The Master document

The first thing to do is to create a document and type the LocoMail instructions. Extracting all the records is essentially a repetitive action which is best handled by using a program unit. If you want more information how they work, you can refer to Chapter 9 of the LocoMail User Guide. The program unit that we need looks like this:

```
(+Mail)sep="$":eor="(Unit)
"␣
extract="␣
name:sep:address:sep:      One
      work_phone_no:eor␣   Line
$+␣
"␣
%extract@name␣
(-Mail)
```

You'll notice that there are underscores between the words in the LocoMail item for the work phone number. LocoFile lets you have spaces between the words, but LocoMail has to work with single words. LocoFile automatically recognises the underscore character in a LocoMail item-name as being equivalent to space in a LocoFile name. So `work_phone_no` matches up with the LocoFile item `work phone no`.

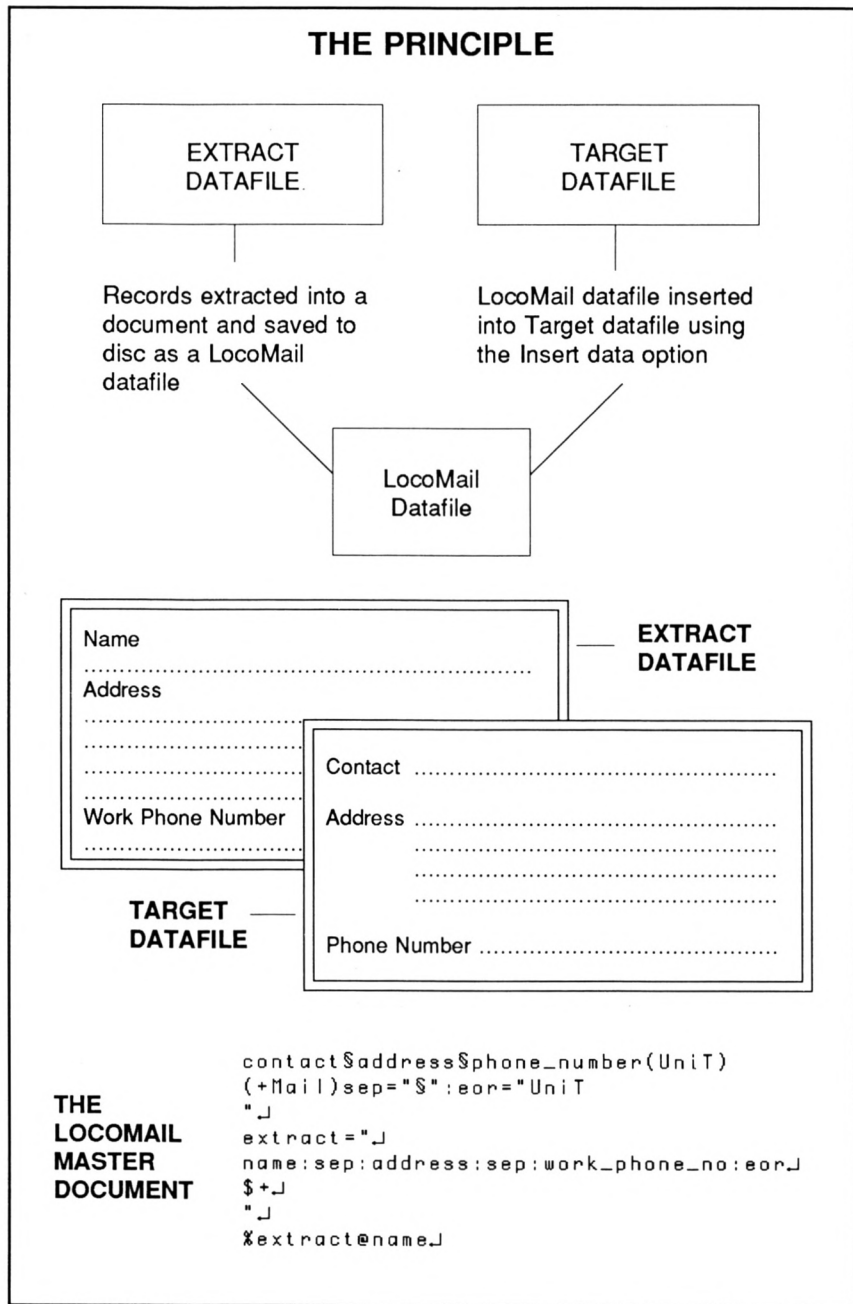
`sep` is simply a LocoMail item holding the character `§` which is used to separate one item of information from another. `§` is generally a good separator to use because this character is unlikely to occur in the information you're extracting from the datafile. If your data does include this character you'll need to use an alternative character as a separator. Chapter 2 of the LocoMail User Guide discusses the range of characters you can use. (On a PCW8256/8512 `§` appears on the keyboard. PCW9512 owners have to press EXTRA and I to produce this character). The item `eor` contains the (Unit) code used to divide the records.

All that's needed to complete the instructions is a command to repeat the program unit until the end of the LocoFile datafile. In this case, the command is `%extract@name`. (You should note that this only works if the item name either isn't empty or isn't zero in any of the records. You will need to substitute an item in your own datafile which you know will never be empty or

zero).

If you Merge this master document with the Extract datafile you'll end up with all the records in a LocoMail datafile. But before you can insert the data into the Target datafile, LocoFile needs to know how all the items of information are organised. For example, it needs to know where one item ends and another begins and similarly

when one record ends and the next one starts. LocoFile understands datafiles in the same way as LocoMail - by looking at a record pattern. A record pattern is a special record which tells LocoFile the structure of the records. Given the structure, LocoFile can insert each item of information correctly. So what we need to do is put a record pattern at the top of the document.



The record pattern

The record pattern gives a name to each item of information in a record and identifies the character used to separate each item. Whereas you have a choice about the items you extract from the Extract file, you don't have a choice about the item-names in the record pattern. The names used to describe each item of information must match the names of the items in the Target datafile. It's this match which allows LocoFile to insert the items into their correct slot in the Target datafile.

As the record pattern is the first thing LocoFile looks for, you simply have to add it at the top of the LocoMail master document, remembering to separate each item-name with the same character used to separate the items in the records themselves.

`contact$address$phone_number(UniT)`

You'll notice that the record pattern ends with a (UniT) code to match up with the (UniT) code we've used to divide the records. We could have used either (UniT) or ↓ to mark both the end of the record and the end of the record pattern, but the trouble with using ↓ is that you end up with a multi-page document with each name, address and phone number on its own page. Unless you want to use the document for some other purpose where dividing each record with a ↓ would be helpful, we recommend that you use the (UniT) code to divide the records. This is because you'll end up with a smaller document to save to disk at the end of the Merge. The complete master document shown on the previous page.

Next month we will continue the steps, looking at merging and saving and inserting into LocoFile.

Give your child an unfair advantage!

The Fun School 3 series for PCW owners consists of three packages each containing six stunning educational programs that will help to develop many skills including number and word skills at your child's own pace.

Beautifully-created pictures and stunning animation will keep your child coming back time and again. The series has been developed by the winning team which put together Fun School 2, the biggest-selling educational package ever with more than 150,000 in the UK alone.

FUN SCHOOL 3 - For Under Fives

- Counting:** Help Teddy reach the jar of honey by counting up to nine.
- Letters:** Join in all the fun at the alphabet fair by pairing large letters.
- Matching:** Pair up the shapes to fill teddy's piggy bank with money.
- Actions:** Make Teddy jump, hop, skip, sleep, juggle, eat and more.
- Painting:** Colouring fun down on the farm with all the animals (mono).
- Gallery:** Learning to read is really easy in the Fun School gallery.

FUN SCHOOL 3 - For Fives to Sevens

- Toystore:** Spend your pocket money wisely in the well-stocked shop.
- Time:** Tell the time and watch the cuckoo clock come alive.
- Funtext:** Explore the Viewdata-style database then take the challenge.
- Collect:** Guide the frog from log to log to create and solve the sums.
- Electricity:** Fix the incorrect circuits to set the bell ringing.
- Journey:** Travel around the village and learn about directions.

FUN SCHOOL 3 - Over Sevens

- Treasure Search:** Follow the compass directions to find the jewels.
- Word Search:** Pick out the words cleverly hidden in the large grid.
- Robot Draw:** Create beautiful patterns and learn how to program.
- Planetary Maths:** Solve the sums before they hit the forcefield.
- Sentences:** Correct spelling, punctuation and grammar mistakes.
- Database:** Store information, sort it, search it, then test yourself.

SEE REVIEW ON PAGE 42 OF THE MAY ISSUE OF THIS MAGAZINE.

Each pack of six games is \$54.95 (plus postage) and all are available by mail order from:

Strategy Publications
1/641 High Street Road, Mount Waverley, Vic 3149

Tel: (03) 803 9661 • Fax (03) 887 9640

CPC & PCW PUBLIC DOMAIN DISKS

The following discs contain compilations of public domain programs which have been tested under CP/M Plus. Unless otherwise stated, programs will run on the PCW, 6128 and 464/664 with extra memory and CP/M Plus. Programs for the 464/664 are on the CP/M 2.2 Collection. The discs are supplied in Data format and contain documentation files to help the user get started and provide instructions on running the programs.

But remember, as Public Domain programs they are supplied on an as-is basis.

CP/M 2.2 COLLECTION

For 464/664 disc drive users with CP/M 2.2. Contains File Manager, Compare, Find, Disc sector editor, Key definer, Bad sector eliminator, Grep, FullScreen text editor, EasyLister, File transfer utility, Unerase erased files, erased files catalogue and many more.
CPC Ref: #430

FULL SCREEN TEXT EDITOR

This machine code editor offers full screen editing, full block operations, windowing, automatic horizontal scroll (line length up to 255 characters), macro functions, word-wrap and formatting, pagination, find/replace, undelete and many user options.

The editor, which is less than 10k in size, is fast because it edits a file entirely in memory. It produces ASCII text files and has enough features to be used as a word processor. A comprehensive on-disc manual is included together with keyboard configuration files for the CPC and PCW.
CPC Ref: #601 PCW Ref: #801

DATABASE

A small relational database suitable for storing simple data and producing reports and forms letters from the data. Offers free format query language with macros and commands plus on-line help. The disc also contains an Inventory Database. Whilst these databases provide a useful introduction and you can use them to set up a full operational database system they are not meant to replace commercial packages for professional or business use.

CPC Ref: #602 PCW Ref: #802

COMMUNICATIONS

Programs to allow data transfer between computers (local and remote), access databases and bulletin boards. UKModem7, New Kermit, MEX and various communications utilities. The disc also contains software for Prestel (Viatel) emulation (PCW only).

CPC Ref: #603 PCW Ref: #803

VIDEO CLERK

Keep track of your video collection. With four Sort options and Forms Management system for printing out the data in order of title number, video number, global alphabetic or unique. Includes extensive on-disc documentation.

CPC Ref: #604 PCW Ref: #804

FIXED ASSETS LOG

Allows you to keep a record of all your assets and their value. For example, at home, you may wish to keep a record of how much money you are spending on your computer or the value of a stamp collection etc. In business you can use it to keep a record of how much money you have tied up in land, buildings, office equipment, cars etc. It can also be used as a stock-taking program.

CPC Ref: #605 PCW Ref: #805

COMPLETE UTILITIES

• *Newsweep* - one key erase, copy, rename and print, plus many other features. Ideal for sorting out your disc collection quickly and efficiently • *Superzap* - disc sector editor - edit by track/sector or filename. Fully menu-driven with cursor key SETKEYS file • *DisckitA* - multi-choice disc formatter, offers 178k data format for PCW discs and 5.25" second drive formatting • *Unerase* erased files • *Read/write* PCW discs on a CPC • *CP/M v2.2 emulator* • *Make* - allows you to copy files across user areas • *Cleanup* - useful for speedy file deletion • *Lookat* - speedily lists any file in Hex and ASCII • *Screen*

Dump (CPC only) • *Password* • *Easy Lister* • *Password Protection* • *File* • *Scrambler* • *File Splitter* • *Directory check*
CPC Ref: #606 PCW Ref: #806

TEXT PROCESSING UTILITIES

• *Sideways* - prints text file sideways on an Epson-compatible printer. Ideal for those wide spreadsheets • *Sortany ASCII* list into alphabetical order • *Word count* - can be used on any ASCII file • *WSClean* - removes higher order bits from a text file and converts it to straight ASCII • *Calendar Generator* - prints out calendar for any year • *Simple Spell Checker* - with starter dictionary and dictionary editor • *Scoring card generator* • *Banner printers* • *Typewriter emulator*
CPC Ref: #607 PCW Ref: #807

DISC ORGANISATION

Catalogue your disc collection and produce a printed index. Useful for speedy location of files and for keeping your discs in order. Library utilities for archiving and saving disc space. File dating system. Squeeze and unsqueeze for saving up to 40% disc space. Menu system - allows menu-driven access to programs on a disc. Completely and easily user-definable.

CPC Ref: #608 PCW Ref: #808

Z80 PROGRAMMER

A complete Z80 Assembler which is capable of converting an ASCII assembler file into a fully executable machine code .COM program. Plus Z80 Disassembler, Z80 Debugger, Z80 Library, 8080 Disassembler, Z80 to 8080 Translator and associated utilities.

CPC Ref: #609 PCW Ref: #809

'C' PROGRAMMER

The Small 'C' Compiler by Mike Bernson. Includes source code and 25k of documentation. Produces executable .COM programs.

CPC Ref: #610 PCW Ref: #810

'C' TOOLBOX

A disc full of 'C' source code examples together with the corresponding executable .COM programs. Useful to those wishing to see some practical examples of 'C'. As a bonus, the programs are quite useful too. The 'C' source was written for a variety of compilers and may need modifying to compile on MIX or Small 'C'.

CPC Ref: #611 PCW Ref: #811

FORTH, STOIC AND 'C' INTERPRETER

For experimenters interested in using these languages. Documentation is included on disc.

CPC Ref: #612 PCW Ref: #812

GAMES COMPENDIUM

A varied selection of the best machine code programs available for CP/M. Includes Pacman, Snake (PCW only), Chess, Othello, Mastermind, Spellit, Awari, Life, Golf, Polish Pong, Maze, Biorhythms, Word Search puzzle maker, TicTacTo.

CPC Ref: #613 PCW Ref: #813

ADVENTURES

• *Colossal Cave Adventure* which originated on main frame computers. With game save and re-load • *Bestiary* (written in Mallard Basic for either PCW or 6128 Mallard users. Standard CPC users see *Adventurer's Attic March 1989*) - you play the part of a young prince, your greatest love being to read the ancient bestiaries about strange and often legendary animals. Your task is to find a solution to the terrible blight which, one

year, destroys both crops and animals in the kingdom. Includes game save and re-load • *Return from Arg* - a short but interesting new adventure written in 'C'.

CPC Ref: #614 PCW Ref: #814

PCW GRAPHICS (PCW only)

Simple user-designed graphics drawing program. Enables you to create, save, edit and print pictures on your PCW. Plot lines, points, boxes, four fill patterns, easy to use and wholly interactive • *PCW Screen Font designer* with several ready-to-run font sets • *Biomorph* - fascinating, graphic demonstration of natural selection - develop your own bugs! • *Readme* - program to display any ASCII text file in 45 character format on the 90 character screen - makes it easier to read.
CPC Ref: #815

HOW TO ORDER YOUR DISCS

Before placing your order, please make sure you have selected the correct item for your computer.

Software for CPCs have a reference starting with #4 (for CPC464s with a disk drive and CP/M 2.2) or #6 (for CPC6128 running CP/M Plus).

Software for PCWs have a reference starting with #8. These discs can be converted to run on a PCW9512.

You may either order over the phone quoting your credit card, or by post enclosing a cheque, money order or quoting your credit card number and expiry date.

The cost of each disk is as follows:

CPC 3" disks	15.00
PCW 3" disks	15.00

(Please add relevant postage as shown on Page 46)

STRATEGY PUBLICATIONS
641 High Street Road
Mount Waverley
Victoria, 3149

(03) 803 9661

Moonslayer	29.95	39.95
Pictionary	29.95	
Scapghost (6128)		49.95
Sim City	34.95	44.95
Snoopy		39.95
Star Control	32.95	42.95
Storm Lord		26.95
Tusker	29.95	44.95
War in Middle Earth		39.95

CPC UTILITIES

Logo Screen Dump		30.00
Tascopy	39.00	39.00
Touch 'n' Go Typing Tutor (6128 only)		59.00

CPC WAR/MILITARY/SIMULATIONS

Scramble Spirits	29.95	39.95
Sonic Boom		39.95
Space Harrier 2	29.95	39.95
UN Squadron	29.95	39.95

CPC PUBLIC DOMAIN DISKS

PD#430 - CP/M 2.2 collection		15.00
PD#601 - Full screen text editor		15.00
PD#602 - Relational Database		15.00
PD#603 - Communications		15.00
PD#604 - Video Clerk		15.00
PD#605 - Fixed Assets log		15.00
PD#606 - Complete Utilities		15.00
PD#607 - Text Processing Utilities		15.00
PD#608 - Disc organisation		15.00
PD#609 - Z80 Programmer		15.00
PD#610 - 'C' Programmer		15.00
PD#611 - 'C' Toolbox		15.00
PD#612 - Forth, Stoic & 'C' Interpreter		15.00
PD#613 - Games Compendium		15.00
PD#614 - Adventures		15.00

CPC ACCESSORIES

Disk Drive Cleaning Kit: 3"	19.95	
Disks: 3" Maxell	7.25	
Disks: 3" Amsoft LIMITED SUPPLY ON SPECIAL	6.95	
Dust Cover: 464 monitor & keyboard	35.00	
Dust Cover: 6128 monitor & keyboard	35.00	
Dust Cover: DMP200/2160/3160 printer	17.00	
Mouse mats	12.95	
Ribbons: Black Nylon for 2000/2160/3160	19.95	
Ribbons: Black Nylon for DMP4000	19.95	
Screen Filter	29.95	

CPC TYPE-INS FROM THE AMSTRAD USER

Individual Monthly Type-ins on tape	5.00	
Year Disc 01 - Type-ins from Iss. 1 to 12	50.00	
Year Disc 02 - Type-ins from Iss. 13 to 16	22.50	
Year Disc 03 - Type-ins from Iss. 17 to 20	25.00	
Year Disc 04 - Type-ins from Iss. 21 to 24	25.00	
Year Disc 05 - Type-ins from Iss. 25 to 28	25.00	
Year Disc 06 - Type-ins from Iss. 29 to 32	25.00	
Year Disc 07 - Type-ins from Iss. 33 to 36	25.00	
Year Disc 08 - Type-ins from Iss. 37 to 40	25.00	
Year Disc 09 - Type-ins from Iss. 41 to 44	25.00	
Year Disc 10 - Type-ins from Iss. 45 to 48	25.00	
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Year Disc 12 - Type-ins from Iss. 53 to 56	25.00	
Year Disc 13 - Type-ins from Iss. 57 to 60	25.00	
Year Disc 14 - Type-ins from Iss. 61 to 64	25.00	
Year Disc 15 - Type-ins from Iss. 65 to 70	25.00	

CPC PERIPHERALS

AMX Mouse Mk III with CPC interface	169.00	
Centronix Printer Cable	22.95	
J/Stick - StarBlazer: robust with 3 fire buttons	44.95	

SPECIAL

256k Memory Expansions for 464/664
Were \$309 - Now \$225 (+ \$5.50 postage)
256k Silicon Disk for 464/664
Were \$329 - Now \$225 (+ \$5.50 postage)

5.25" Second Disk Drives for 464/664/6128 + cable
Were \$379 - Now \$295 (+ \$10.00 postage)
6 Position ROM Boards for 664/6128
Were \$210 - Now \$160 (+ \$5.50 postage)

(Please specify your computer when ordering)

J/Stick - StarCursor: 4- or 8-way actionbuttons	54.95	
J/Stick - StarFire: fully microswitched	39.95	
J/Stick - Winner 220	34.95	
Joystick Splitter (allows use of 2 joysticks)	17.50	

PCW GAMES

Bridge Player 2150	69.95	
Classic Collection 1: with Hop-it, Munch-it & Shoot-it	49.95	
Classic Collection 2: with Caverns, Skiing & Climb-it	49.95	
Double T Patience	64.95	
Fairlight	39.95	
Heathrow/Southern Belle	39.95	
Lancelot	39.95	
Scapghost	49.95	

PCW BUSINESS

Brainstorm: ideas processor	79.00	
Cardbox Plus: card file system database	99.00	
Datatore II: report/mailling generator & labels	89.95	
Masterfile 8000: very fast relational database	139.00	
Mini Office Professional: WP, DB, S'sheet	149.00	
Money Manager Plus: cashbook/personal acc.	99.00	
NewWord 2 (PCW Wordstar)	150.00	
Prospell: spell checker	79.95	
Protext: word processor	149.00	
Protext Filer: pop-up database for Protext	59.95	
Protext Office: as Filer + merge & invoices	79.95	
Scratchpad Plus: powerful spreadsheet	99.00	
Supertype II: 8 different fonts	39.95	
System 3 (not for 8256): stock control, invoices	129.00	
Tait Accounting: small debtors, creditors & inv.	99.00	
Tait Database & Labeller	29.95	
Tas-spell 8000: spell checker for Tasword	56.00	
Tasprint 8000: different typesyles	39.00	
Tasword 8000: word processor	69.95	

PCW EDUCATIONAL

Better Maths (12-16)	29.95	
Better Spelling (12-16)	29.95	
Biology (12-16 yrs)	29.95	
Chemistry (12-16yrs)	29.95	
Fun School 3 (under 5 yrs)	54.95	
Fun School 3 (5 to 7 yrs)	54.95	
Fun School 3 (over 7 yrs)	54.95	
Magic Maths (4-8)	29.95	
Maths Mania (8-12)	29.95	

PCW GRAPHICS

Art Gallery 1 (needs Printmaster Plus)	50.95	
Art Gallery 2 (needs Printmaster Plus)	50.95	
Desk Top Publisher (not for 9512)	59.95	
Graphics, The Universe	85.00	
Micro Design 2	175.00	
Print Master Plus	59.95	
Tas-sign 8000	69.95	

PCW LOCOMOTIVE PRODUCTS

24 Pin Printer Driver PCW 8000	74.95	
24 Pin Printer Driver PCW 9000	74.95	
Extra Printer Driver 8256/8512	69.95	
Keyboards disc 8256/8512	69.95	
Keyboards disc 9512	69.95	
Locofile 8256/8512	125.00	
Locofile 9512	125.00	
Locofile/Locomail PCW8000	205.00	
Locofont 24 - different fonts for 24-pin printers	74.95	
Locokey	69.95	
LocoLink: true LocoScript file transfer from PCW to PC	79.95	
Locomail	175.00	
Locomail 2 Examples disc	17.50	
Locomail Sorting Program	39.95	
Locoscript 2	97.00	
Locoscript 2 Upgrade disc	59.95	
Locoscript 2/Locospell	155.00	
Locospell 2	85.00	
Printer Support Pack: for both 8000s & 9000s contains Printer Drivers (8000), Printer Drivers & Character sets (9000), 24-pin Printer Drivers (8000 & 9000), and Printwheel disk (9000)	120.00	
Printwheel Disc 9512	69.95	

PCW TRAINING

Introduction 8256/8512 & Loco1	59.95	
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Introduction 9512 & Loco 2	59.95
Introduction CP/M on PCW	59.95
Touch 'N' Go Typing Tutor	59.00

PCW UTILITIES

Startrack	54.95
Wordloco	49.95

PCW PUBLIC DOMAIN

PD#801 - Full screen text editor	15.00
PD#802 - Relational Database	15.00
PD#803 - Communications	15.00
PD#804 - Video Clerk	15.00
PD#805 - Fixed Assets log	15.00
PD#806 - Complete Utilities	15.00
PD#807 - Text Processing Utilities	15.00
PD#808 - Disc organisation	15.00
PD#809 - Z80 Programmer	15.00
PD#810 - 'C' Programmer	15.00
PD#811 - 'C' Toolbox	15.00
PD#812 - Forth, Stoic & 'C' Interpreter	15.00
PD#813 - Games Compendium	15.00
PD#814 - Adventures	15.00
PD#815 - PCW Graphics	15.00

PCW ACCESSORIES

Daisy Wheels: Courier 10	19.95
Daisy Wheels: Cubic Pica 10	19.95
Daisy Wheels: Letter Gothic 10/12	19.95
Daisy Wheels: Mini Gothic 15/Micro	19.95
Daisy Wheels: Orator 90%/10	19.95
Daisy Wheels: Prestige Elite 12	19.95
Daisy Wheels: Prestige Pica 10	19.95
Daisy Wheels: Script 12	19.95
Disk Drive Cleaning Kit: 3"	19.95
Disks: 3" Maxell	7.25
Disks: 3" Maxell High Density	7.75
Dust Cover: 8256/8512 complete	55.00
Dust Cover: 9512 complete	60.00
Keyboard Protector: 8256/8512	34.95
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Ribbons: Black Carbon/Multistrike 8000s	19.95
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Ribbons: Black Nylon 9000s	19.95
Ribbons: Blue, Red or Green Nylon 8000s	24.95
Screen Filter	29.95

PCW PERIPHERALS

Joystick interface (Kempston)	49.95
Mouse (AMX) plus interface	199.00
Mouse (Kempston) plus interface	199.00
Proscan hand-held scanner with software	499.00
RAM Expansion unit: 512k (SCA)	329.00
Scanner: attaches to 8000 printers	279.00
Serial Interface	165.00

CPC BOOKS

Advanced User Guide	9.95
Child's Guide to the Amstrad Micro	13.95
Computer Games Guide (400 hints, tips etc)	29.95
High energy programs for the CPC (type-ins)	9.95
Watson's 1 - First steps in Basic	17.95
Watson's 2 - Exploring Basic	17.95
Watson's 3 - Computer Games	17.95
Whole Memory Guide	30.95

PCW BOOKS

LocoMail User Guide	54.95
LocoScript2/Mail/Spell - assignments & solutions	32.95
Mallard Basic - Intro and Reference	45.50
Pocket Wordstar	30.95
Program your PCW	32.95
Using Databases on the PCW	35.95
Word Processing with the PCW	27.95

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We have back copies of most issues of The Amstrad User and The PC Mag to complete your collection.

**PLEASE ALLOW 14-21 DAYS
FOR DELIVERY**

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President: Andrew Seaborn

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Secretary: G. Atkinson (09) 381 5434

Vic Chips User Group

Sec: V. Hoeksema (09) 527 7426

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Amstrad Computer Club Tom Price

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Secretary: D. Dienelt (08) 339 1314

Northern Computing Society

Pres: Chris Clemas (08) 255 3470
Sec: Fred Cummins (08) 281 209 1

ACT

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Treas: Rod MacKenzie (062) 54 7551

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Secretary: Enid Baker (003) 431 313

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Pres: Peter Gibson (004) 24 7586
Sec: J. Westerhoff (004) 24 3977

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President: J. Nicholson (002) 72 9610
Sec: Lance Brown (002) 28 2018

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Amstrad User's Group

Contact: John Court (09) 666 143

Southland Amstrad Computer Club

Contact: Glenda Conner (03) 2157249

Wellington Amstrad User Group

President: Patrick Faury (04) 766 185
Secretary: Lesley Walker (04) 679169

CONTACT LIST

Victoria

Brian Ellis, Reservoir
(03) 469 4425 A/H

South Australia

Dave Green, Port Pirie
(086) 326 834

CLASSIFIEDS

FOR SALE

Ribbons re-inked \$5.00 plus return postage. J. Thamm, Box 269, Two Wells SA 5501 (Ph: 085 20 2377)

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Amstrad PC2086 (8MHz XT) with 30mb hard disk, 14" VGA colour monitor, 3.5" (720k) internal floppy drive and mouse. Very good condition. Has only been used for testing, reviewing and demonstrating software. Comes with manual and original DOS disk. \$1500 Collect or freight at your cost. Ring (03) 803 9211.

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
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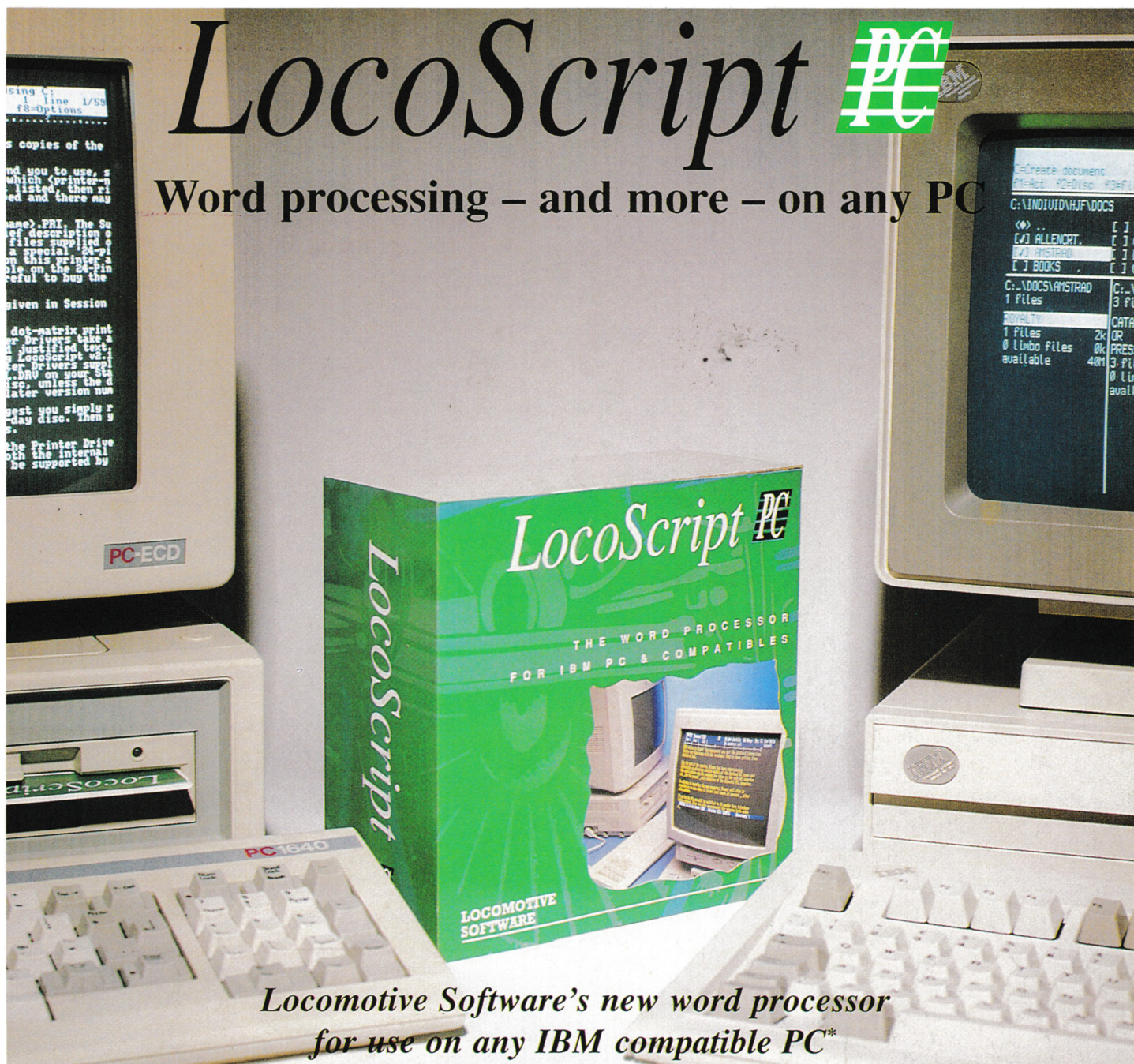
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