

THE PC MAG

plus
**THE
AMSTRAD
USER**

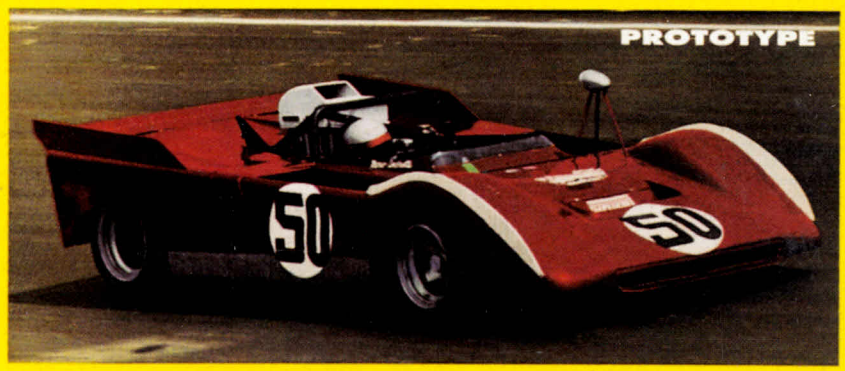
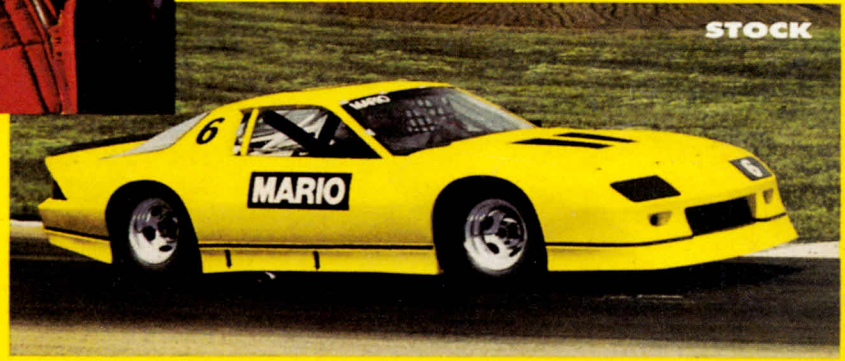
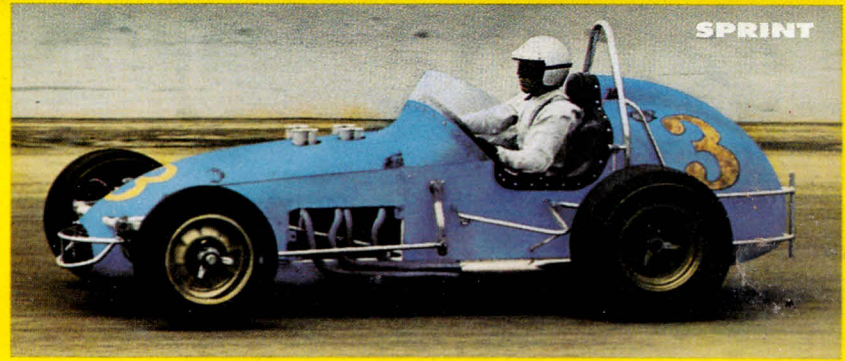
**August
1991**

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Jan. 1991

Soft-Talk continues to lead the way with its latest blockbuster — **DYNAMITE PACK #3**. Over 200 of the best PD and Shareware* software products we could find for IBM and compatible computers; including many EGA/VGA titles (especially games), so that you can take full advantage of the colour and graphic capabilities of your computer.

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A state-of-the-art text editor which can edit files up to 32 Megabytes and 2 BILLION lines. Possesses on-line context sensitive help, a full menu system, and all the word processing features needed for documentation.

Mega-Star:

A full featured word processor that has special abilities for people who need to edit/examine numerous files. Also possesses on-line help and pull-down menus.

Word Fugue:

Wordstar compatible word processor, but with the entire keyboard user configurable. It also features a pull-down menu system, context sensitive help, background printing, table of contents and index generation, multiple windows, multi columns with word wrap, and a spelling checker. You can also add or delete words from the dictionary.

File Express:

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SSQL V2.2

A structured query language developed to query and maintain relational databases.

As-Easy-As V4.0:

A spreadsheet providing a choice of pull-down or panel menus, macro recording, playback and single stepping, goalseeking, text search, replace, justify and 3D simulation.

Billing:

Utility for tracking & billing hours for contract programmers and other professionals.

Dayo Quotes:

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Over 30 popular Calmer utilities including NBY; which scans for 234 different virus strains. — All latest versions for January 1991.

Swap:

Provides an application independent method for one MS-DOS application to run another.

Sarah's Diary:

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Image 3-D:

Design and modelling program enabling you to create, view, and edit 3D wire-frame objects and images.

VRAM:

VRAM lets you break the 604k memory barrier without additional memory boards or other hardware.

Painter's Apprentice:

A complete paint and drawing program for users with EGA and VGA computer systems.

Magic Menus:

A complete system organiser packed with features not found in any other menuing program. It allows you to define your own pull-down and pop-up menus to control the functions of your computer.

Graphics Menu:

A menu system that allows the user to take advantage of the EGA/VGA colours and graphics.

Smooth:

An EGA/VGA text-browsing utility that makes reading from the screen easier by providing smooth scrolling in either direction at user selectable speeds.

CMOS:

CMOS can quickly restore configuration of a machine on which the battery has been disconnected or the CMOS has been otherwise trashed.

Window Menu:

State-of-the-art screen windowing to organise your computer system and display the applications, programs, and commands you use for your access.

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Fill:

Fill will copy all your hard disk files, filling up each floppy disk; allowing you to optimize your floppy disk space, and keeping your files in their original-executable format.

EasyCase:

Computer Aided Software Engineering Tool for drawing dataflow diagrams, state transition diagrams, transformation graphs, structure charts, etc., for (real time) system analysis and design.

Vehicle Maintenance:

Provides a type written check off sheet listing items to be serviced at pre-defined intervals.

Total System Statistics:

Produces a simple but comprehensive set of statistics of the PC/XT/AT computer on which it's run.

Other titles include:

VGA CAD, VGA Paint, Anyword, Screen Debut, VGASAVE, Compushow Slide Show, Foxy-Looks, Maxi Form, Universal on-line Electronic Speller V2.0, PCRemote, The STD Charger/Timer, VMS40, VGA Utilities, Lotto, Hi-Res Rainbow, PCLOCK22, the Baker's Dozen, EMS V4.0, Andy's Utilities, TBSCAN, Split, Traffic, VANSI, Fastbucks V4.0, Jem Logo, and much more.

Entertainment titles include:

Astro Chicken (By Sierra), Hulk Graphic Adventure (by Scott Adams), Aldo's Adventure, EGA Arkanoid, Fire King, Star Goose, Reach For The Stars, Majong VGA, Shooting Gallery, Sidewinder, VGA Sharks, Klondike, Space Flees, Aggression, Air Traffic Controller, Blackjack, Rad-Warrior, Clone Invader, The Adventures of Captain Comic, EGA Risk, Sorry, Collide, Backgammon, EGA Trek, Jigsaw Mania, EGA Bomb, Supemova, Panzer Battles, Sea Hung, EGA Othello, Pyramid Piano Man, The Las Vegas EGA Casino, Conquest, Defender, Growbugs, Hurkle, Maze 3.0, Bananoid, EGAIN, 3D Pong, Microbucks II: An Electronic Marvel, Solitaire, VGA Roulette, Video Poker, Lawn Bowls, Breakout, EGA-Rokis, Joust VGA, Mille-Bomes, EGA Pacman, Snarf, Las Vegas Solitaire, Freezer Frenzy, Scramble, and Pro Tennis.

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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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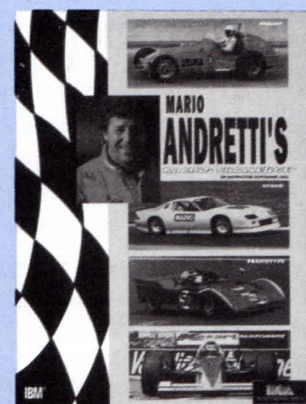
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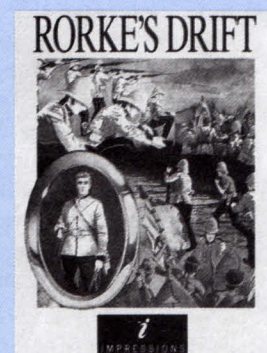
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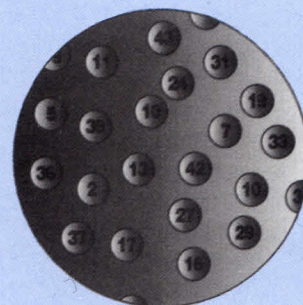
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NEWSNEWSNEWSNEWS

The latest information for IBM PCs and compatibles

PACTRONICS RELEASES

Imagine the convenience to bringing your laptop computer and scanner to the library, a business meeting, or anywhere you need to pull information instantly from hardcopy to computer file. The pocket size external **CAT Hand Scan Adapter** allows today's most popular hand-held scanners to connect directly into IBM PCs and compatibles through the parallel port. As an added bonus, **CAT Image Enhancer** software, which converts hand scanned dithered images into 16 levels of grey, is also included to create files for professional graphics manipulation. It features .TIF and .PCX grey-scale and scaled .PCX format conversion, direct output to Epson dot-matrix, HP Deskjet and HP Laserjet Printers, automatic scaling of images, and cropping capability. It supports Hercules, CGA, EGA and VGA display and is compatible with Ventura Publisher, Pagemaker, PC Paintbrush and word processors which take listed file formats.

In addition to the already popular **BeckerTools version 2.0** (reviewed on Page 6), three new components have been added to enhance the program even more; namely Backup, Compress and Recover. Becker Backup is a file and disk backup/restore utility featuring complete backup, changed files only, files by wildcard etc., password protection, optional compression and restore to original path. Becker Compress is a file and disk defragmenter to improve the performance of your PC by "cleaning up" the drive.

Becker Recovery is a utility to check and repair common file and disk drive problems. It features examination of floppy or hard disks for damage such as corrupted FATs, improperly chained clusters and corrupted files.

Virus Secure for Windows, written by international computer virus authority Ralf Burger, provides the necessary security for Windows users. Once installed in Windows it identifies over 200 known viruses and has the ability to "learn" more. It stays current with updates to the virus control file being made through a word processor. The checking facilities include Fast Check, Frequent offender check, Background check and check by file type. Virus Secure is a true Windows application, not a DOS program.

DOS 5.0 Complete is a new book published by Abacus providing detailed explanations and useful tips and tricks to help you get the most out of MS-DOS 5.0. It also includes a ready-to-use companion disk with dozens of powerful batch files. Topics cover using DOS 5's new memory management features, the improved shell, the new DOSKEY utility for faster command line editing, the new full-screen editor EDIT and Qbasic. It also contains a complete DOS command reference making it an encyclopaedia of knowledge not only for the computer whiz but for the everyday user.

For more details contact Pactronics on (02) 748 4700 or The PC Mag on (03) 803 9661.

DATAFLOW RELEASES

PC Globe 4.0 is an enhanced "electronic atlas" and an indispensable resource tool. Instant profiles of 190 countries and dependencies including detailed maps, graphics, facts and figures are provided in a single, simple to use source.

Version 4 offers new features including climatic charts of major cities, updated information, enhanced "point and shoot" capabilities and each country's flag and national anthem. You'll also find a vast array of demographic and economic data, travel information, visa requirements, currency conversions, time zones and international dialling codes. Advanced compression techniques allow for less than 1.5mbs of disk space making it ideal for laptops. PC Globe 4.0 supports Hercules, CGA, EGA, VGA, Tandy and MCGA and will cost \$119.95.

PFS: WindowWorks is an integrated program for Windows from Spinnaker giving advanced word processing, page layout, spreadsheet, database, graphs and charts, communications, labels - even hotlinking! Working with MicroSoft Windows version 3.0 or higher, WindowWorks lets you create memos, reports and newsletters, design your own powerful custom spreadsheets and your own databases, keep track of names and addresses, and get the latest information from on-line services. WindowWorks supports Hercules, EGA or VGA screens and requires a hard disk, a Hayes-compatible modem (if using communications) and a mouse.

NEWS NEWS NEWS

Five new products from Britannica Software have also been announced by Dataflow, of which the first four are educational titles.

Super Spellcopter (\$29.95) offers a fast action flying game with fundamental spelling lists compiled by teachers (you can also enter your own). Players dodge and weave, aim and blast and knock off (and remember) one spelling word after another. **Designasaurus II** (\$29.95) is a learning package where children create their own designasaurus then put the creature into a world to see if it will survive. Time travel is possible and on every trip they learn about ecology and paleontology before printing their creation. **Berenstain Bears Junior Jigsaw** (\$49.95) offers ten bear puzzles to piece together. Each

picture can be scrambled to 8, 15, 40 or 60 pieces. **Berenstain Bears Counting** (\$49.95) has eight different counting games using the numbers 1 to 9 and pots of honey, strawberries and apples. Apart from covering simple addition and subtraction, it also teaches weighing and charting and measuring. The program can be customised to suit the child's skill level.

The final product is ideal for the busy office. **Just the Fax** (\$49.95) contains dozens of templates, faxable typestyles, borders and scores of clip art illustrations to bring your fax to life. There is also a handy on-line phone book to make it easy to send personalised faxes.

More details from Dataflow on (02) 331 6153 or The PC Mag on (03) 803 9661

ELECTRONIC ARTS RELEASES

Two exciting new products have been released by Electronic Arts. **Armor Alley** is a head-to-head combat game from Three Sixty Inc. combining action with the planning and wit of a strategic wargame. The game can be played singly or with teams against each other (even over a modem), and combines four modes of difficulty each with thirteen levels of difficulty.

Castles (from Interplay) allows players to experience for themselves what it was like to design, build, defend and manage their own dream castle. Acting as local lords, players are faced with a variety of problems during the course of the game, and at the end, an option to participate in a campaign of further castle building to consolidate their position.

More details from EA on (075) 911 388 or The PC Mag (03) 803 9661.

HEART OF CHINA

Sierra followers will be happy to know that **Heart of China** is now released. It features full motion video capture with realistic 256 colour graphics and intuitive point-and-click interface.

Produced by Dynamix (part of

Sierra), HOC has a unique option to switch viewpoints between characters as the adventure progresses through Hong Kong, snowstorms in the Himalayas and on the Orient Express.

A full review will appear in next month's magazine.

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TAS-SPELL

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TASCOPY

For the 464/664/6128 family, prints out high resolution screen copies (up to poster size). For the PC, provides a graphics editor, graphics/text merge, font designer and screen snapshot to disc.

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Tasword 6128 (disc)	69.95
Tas-spell (disc)	49.00
Tascopy 464 (cass)	39.00
Tascopy (disc)	39.00
Tasprint 464 (cass)	39.00
Tasprint (disc)	39.00
Tasdiary (disc)	39.00
Tas-sign 6128 (disc)	69.95
Amstrad PCW 8256/8512	
Tasword 8000	69.95
Tas-spell 8000	49.00
Tasprint 8000	39.00
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IBM PC and Compatibles (3.5" on request)	
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Becker for Windows 3

Not the tennis player but the Abacus toolbox of management and file utilities comes under the critical eyes of Mike Turner.

Microsoft Windows 3 has established a solid following amongst computer users, myself included. About the only thing that stopped me from using Windows totally as a shell to DOS on my system was the lack of a good high powered disk and file management system. Let's face it, the supplied file manager in Windows 3, whilst a huge leap forward over previous Windows versions; is still far from adequate. I find the Windows File Manager tedious to use and lacking in the advanced functions that are available in DOS packages such as PC Tools and XTREE Pro.

Some seven or eight months ago now, Abacus Software released Version 1.0 of their Becker Tools package for Windows. This did just about everything that the Windows File Manager did and a whole lot more besides. About the only thing it couldn't do was launch programs directly. The package wasn't terribly well received in other

reviews I had read on it. Now Version 2.0 of Becker Tools has hit the streets, and it is fantastic!

The list of features, (which I will cover shortly), is quite a long one. There is something in this package for everyone up to and including the most technically minded. The package has superb disk and file management capabilities including the ability to undelete files, the ability to compress or pack files and then unpack them later and so on.... Becker tools has everything an advanced user needs to get right into the nitty gritty of a system. With features like sector, FAT, and hexadecimal editors to rescue files or salvage corrupted disks, this application provides a totally comprehensive set of tools to handle almost any contingency. Having said that; it is also extremely easy to use for beginners and can be graded to suit various experience levels. As with all Windows applications, the on screen help is great. It is so good in fact that the accompanying manual is almost

superfluous.

The easiest way to describe the power of this package is to briefly give you a list of the major features. Bear in mind that to tell you everything that this package can do would take considerably more column space than my editor would allow me. Anyway, here goes....

LAUNCH APPLICATIONS

You can launch applications directly from Becker Tools. These can be any executable file on the disk, including batch files. You may also nominate up to 10 Windows or DOS applications to be available on a Drop Down Menu called (surprise surprise), Applications. You may then execute them with one click of a mouse button. This feature makes Becker Tools almost good enough to use as a shell for Windows, giving the supplied Windows Program Manager a miss.

BACK UP FILES

You may pack and also encrypt files with ease. The back-up and restoration routines used are similar to but more efficient than the standard DOS equivalents. The savings to be made in disk space using Becker Tools for back ups is incredible. The documentation claims 50% to 80% savings. I regularly achieved savings in excess of 82% with text and data files. Obviously some file formats such as GIF files, (which are already stored in a compressed manner), have little or no savings. But other than these, there are lots of space savings to be made. Another nice touch is the ability to encrypt and password protect your back-ups. The other nice thing I liked was the ability to get a list of all the files that have been packed onto a disk. All too often with archiving type software, there is no way of knowing just what the contents of a particular archived file are. Not

any more with this package.

THREE USER LEVELS

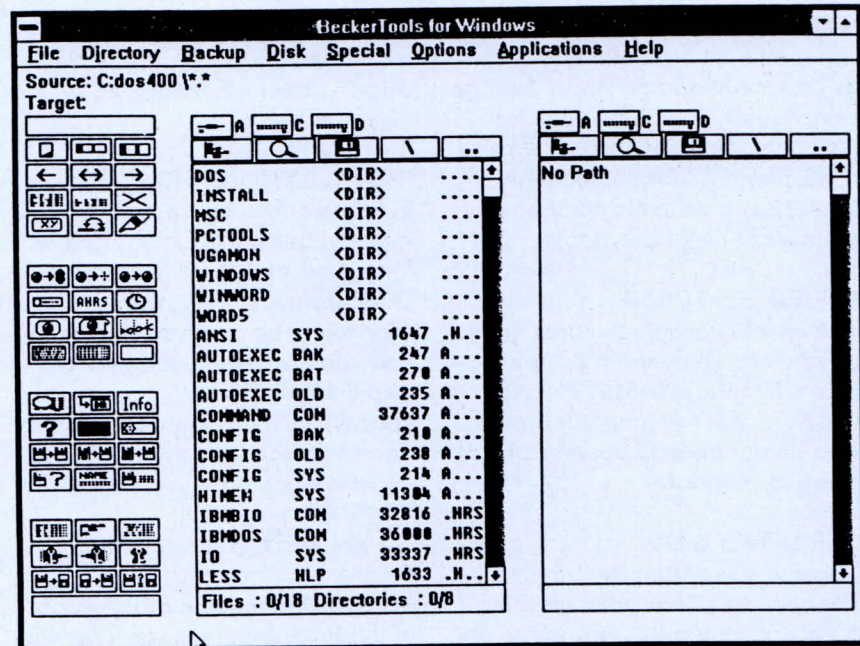
As I mentioned earlier the whole package can be graded for different experience levels. You may select beginner, intermediate or advanced modes. Each will display corresponding more and more options on the drop down menus and the icon panel on the left of the screen. You may wish to set Becker Tools up for beginners by default and then still have access to the advanced features yourself. This too is not a problem. You may also specify a password to be given to change levels. This stops the inexperienced getting into difficulty.

DELETING and UNDELETING FILES or DIRECTORIES

The undelete function is extremely good and works just as well for whole directories full of files as it does for an individual file. You may also disable the undelete function if you are really sure that you are never going to need the files or directories selected for deletion ever again. The deleting function is also far better than the DOS or File Manager equivalents. You may delete single files, groups of files or whole directories full at a single time. This can also include read only files if you wish. Be warned that this is a particularly powerful part of the package. It is probably unwise to disable the undelete option when doing this unless you are really sure of your intended action.

DUPLICATING and FORMATTING DISKETTES

You may duplicate diskettes in all available drives within your system. Unlike the DOS DISKCOPY command, there is no repetitious swapping of disks required. Source disks are read into memory in a single pass and then as many copies as you like can be made. You may also



The BeckerTools window

format diskettes in any capacity supported by your floppy drives and disk types. You may also totally wipe a diskette if you wish, for added security.

OTHER DISK HANDLING TASKS

You may compare disks in a single pass. You can create bootable system diskettes. Check for physical errors on any drive in the system including hard disks. Display the file allocation table (FAT) and check for bad clusters. Another nice utility is the clean-up function for disks. As you may be aware, when you erase a file on a disk, the actual contents of the file remain untouched. All you are doing, in essence, is to remove from the FAT any reference to the file. That way, the system doesn't know where the file starts and ends, or how to get into it. However, anyone with a HEX editor can look at the disk and still see the contents of the supposedly erased file.

With clean-up, all unallocated bytes on a disk are overwritten by a null byte; thus thwarting would-be spies. This could be

particularly useful in an office or school situation where sensitive data may be involved.

TEXT EDITING

For all the batch file fanatics like me there is a built in text editor which is far more versatile than the windows notepad. It can be used for both editing batch files and for straight text file generation. A nice touch is the search and replace facility, which takes a lot of the drudgery out of repetitious tasks.

INI EDITING

Also included is a general purpose INI file editor. This lets you edit and change parameters in those INI files that all windows applications seem to generate with gay abandon. Perhaps of more use is a specialised editor for your WIN.INI and SYSTEM.INI files. Unlike a standard text editor, this one displays and explains the various parameters in these files and then gives you the opportunity to alter the settings.

HEX EDITING

Another type of editor provided is

a hexadecimal one. This is not for use by the novices of feint hearted, as it can edit and generally change or destroy virtually any file on a disk, including all those .COM and .EXE files. Still for those in the know, it is a valuable addition to your set of disk utility tools.

OTHER FEATURES

The list of available features goes on and on. There are nice little things like the STARLITE screen blanker, which is great for those who do not already possess one of these for Windows.

THE DOWN SIDE

There is always one isn't there? For a start you will need an IBM/AT at the very minimum to run the package. In other words an 80286 or 80386 processor is essential. You will also need a hard disk drive and of course Windows 3 which, naturally enough, is not supplied with the package. Other correspondents have been critical of the user interface used in Becker Tools. It has been said by some to be too DOS like in its display and should make more use of intuitive icons. Others have said that the 45 odd icons that can be displayed in the quick reference area to the left of the screen are too cluttered and not intuitive enough.

As the old saying goes, you can't please all of the people all of the time. I think the user interface is absolutely marvellous. True, some of the icons don't really seem to convey to the user their purpose in life. But this is overcome by a status line down at the bottom of the screen which magically gives a description of the icon's function the moment you put the mouse pointer over it.

Price is perhaps another down side of this package. The old version retailed for around \$129, but I believe the RRP for Version 2.0 is around \$199. Still you have to look at what you get for the

money and in my book you get more than enough to justify that price. Others will no doubt disagree - so be it....

INSTALLATION AND USE

In terms of getting up and running quickly, this package is a breeze. It may be installed direct from the DOS prompt or from within windows. The program self installs and you are given the option of also letting the installation modify your WIN.INI file so that Becker Tools is loaded automatically as an icon every time you start Windows.

I would suggest rather that you put Becker Tools into your accessories or some other group of the Program Manager. That way if you inadvertently close the application instead of minimising it, you can get it back quickly. I also don't like loading up a lot of applications as icons on start up. This tends to use up available memory quite quickly. I used to do this until I noticed that often most of the icons would go un-touched for an entire work session. Now I tend to call up applications as I need them, and only minimise them if I think I will need to come back to them later in the session.

The program itself is very easy to use as you would expect of a Windows application. It follows all the standard conventions as far as using menus or a mouse goes. The screen is basically divided in half lengthwise with the source disk/directory on the left and the target disk/directory on the right. Files may be tagged with either the mouse or the space bar for group operations such as copying, moving, deleting and so on. Immediately to the left of the source disk area is a toolbox with the afore-mentioned 45 odd icons. This can be used to shortcut the menu system, once you know what they all mean.

The on line help is excellent as is the accompanying document-

ation; which consists of a 200 plus page paperback book. This is full of easy to read text and lots of useful diagrams to help you along the way. Also included is a quick reference card. This gives a quick overview of all the icons with their meanings and on the flip side keyboard shortcuts for all the items on the various drop down menus. I found it unnecessary to use this card at all, as the program is so easy to use.

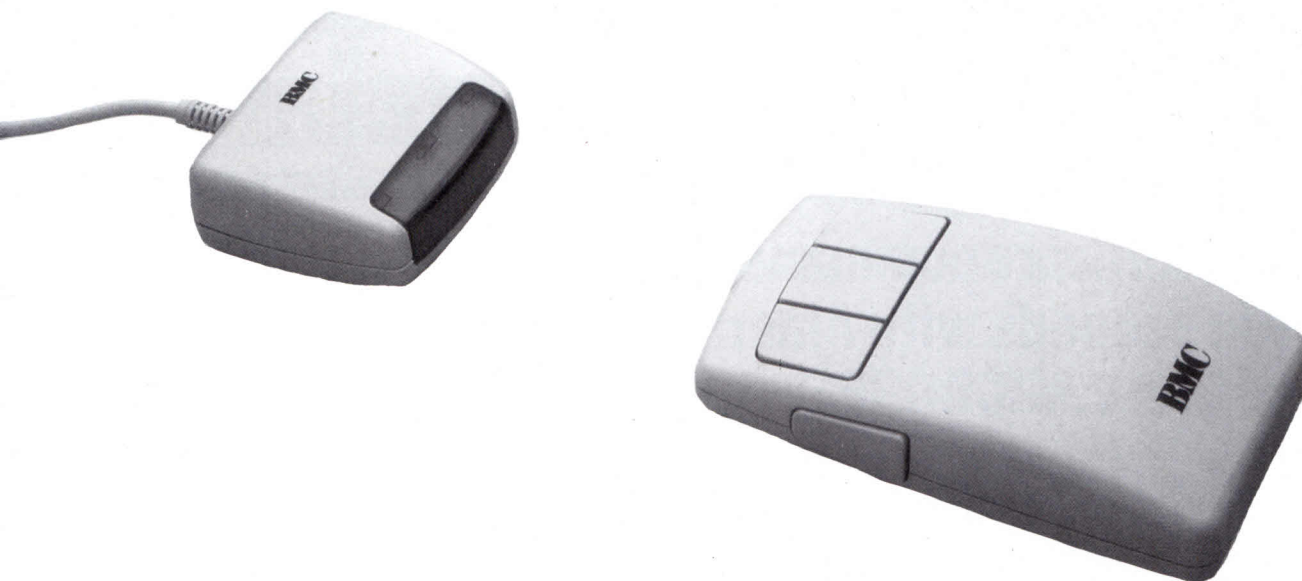
Still it is another nice touch that adds to the general impression that this is one very well thought out package.

SUMMARY

To the best of my knowledge there is nothing else that comes close to Becker Tools Version 2.0 as a first rate utility package for Windows. Whilst it is easy to use for beginners; it is really wasted on people with limited knowledge of their systems. Where this product comes into its own is with the "power user", who wants to completely control the management of the system. Anyone who has mastered programs like XTREE Pro, Norton Utilities or PC Tools Deluxe, will immediately feel at home with this package; and will probably, (as I did), delete the competition off the hard drive. So good is this package that it replaces all the others in one fell swoop.

If you are thinking about using Windows 3 as an operating system shell on your computer and want a package that will allow you to completely manage your system; then Becker Tools is for you. In my book it gets ten out of ten!

BeckerTools for Windows 3 (Version 2.0) is suitable for IBM ATs, 386 or 100% compatible computers, requires a hard disk and Windows 3. It is distributed by Pactronics (02) 748 4700 and is available from all good dealers or by mail order through The PC Mag (03) 803 9661 for \$199 + post.



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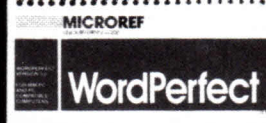
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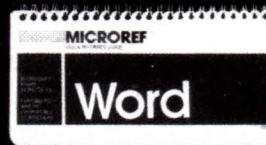
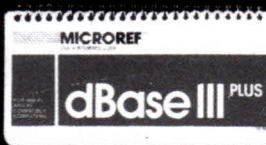
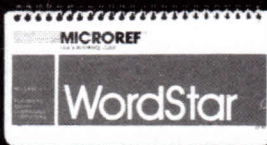
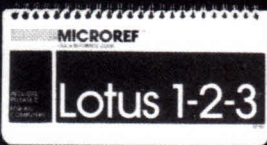
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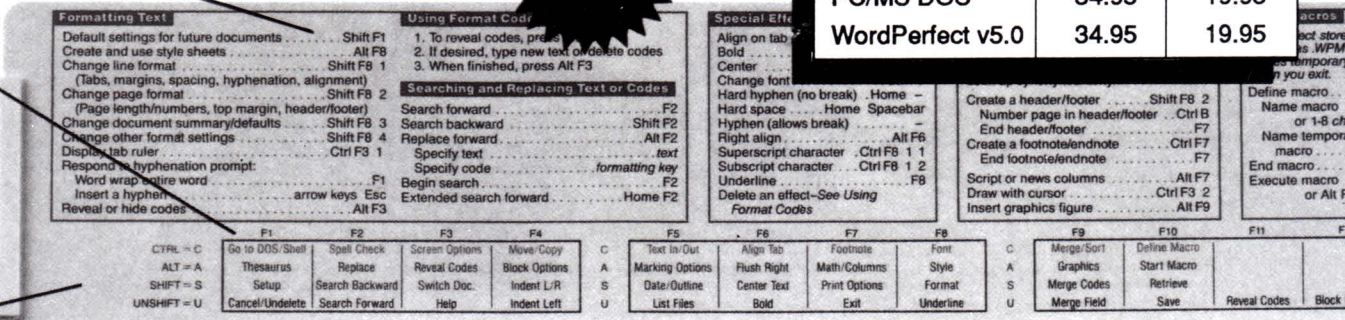
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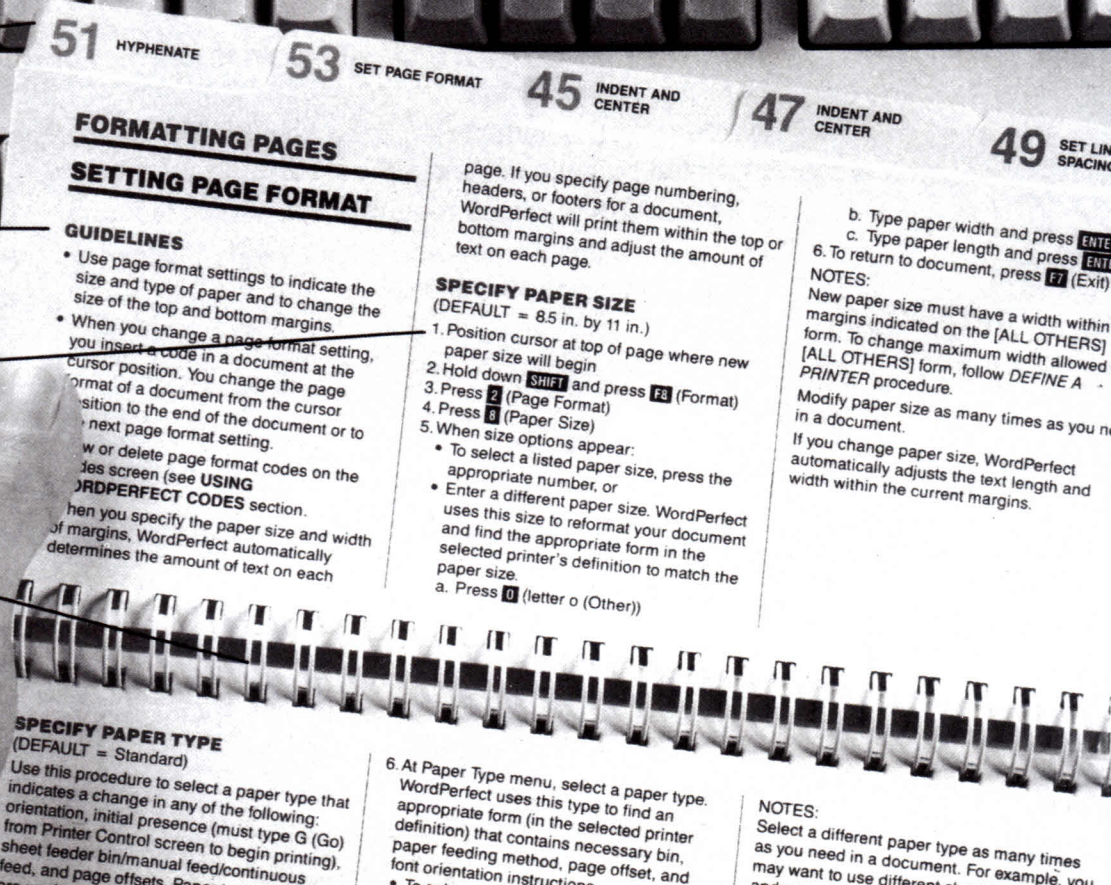
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Five's alive!

*What do you expect from
MicroSoft's new version of DOS?
This brief overview will fill you in.*

MicroSoft first released their disk operating system (MS-DOS 1.0) for IBM PCs about ten years ago. They moved to version 2.0 in 1983 adding support for hard disks and UNIX-like hierarchical file structure. A year later came version 3.0 with the introduction of the PC/AT, and support for larger hard disk drives and 1.2 mb floppy drives was added. Version 3.1 brought with it support for MicroSoft Networks and version 3.2 added enhanced support for new media types. The release of MS-DOS 4 was not as successful as MicroSoft hoped. Whilst hard disk partitions of greater than 32k were allowed along with expanded memory facilities, it still only left about 564k of conventional main memory to play with. This version just didn't seem to catch on, at least, in the small computer user area.

GIGABYTE PARTITIONS

So how does DOS 5.0 shape up? For a start it comes as an upgrade kit costing \$135 (3.5" or 5.25" format) and can only be installed on existing versions greater than 2.11. Like its predecessor DOS 4.01, the new version is capable of handling disk partitions in excess of 32k, in fact it can accommodate two partitions of up to a gigabyte each (a gigabyte is 1024mbs). As the prices of hard disks reduce, so the home and small business expand their storage capacity and 3.3 users are sure to welcome this development.

Version 5 also takes into account and supports the development of 2.88mbs floppy drives and 3.5" re-writable optical drives.

For the next feature you need at least a 286 with 1mb of RAM. This configuration provides the standard 640k of RAM (conventional memory) and 384k high memory allowing DOS 5 to take advantage of the higher position and load itself there. This in turn increases the available space in the lower area or conventional memory. If MicroSoft claims are to be believed (and there is no reason why not) an extra 46k can be gained by moving from DOS 3.3 (575kbs to 621kbs). Owners of 386s will also be able to load drivers and TSRs into higher memory.

ADD-ON UTILITIES

A number of utilities have also been included with DOS 5. Some people may have already seen a few of them in various guises, especially in PCTools. You get UNDELETE, UNFORMAT, QUICK FORMAT, COMMAND LINE HISTORY, MIRROR and ON-LINE HELP. Most are self-explanatory. MIRROR can be used for copying file allocation tables (FAT) on hard disk, information on partitioning set up from hard disk to floppy, or keeping abreast of deleted files in case a recovery is necessary.

Apart from scrolling through DOS commands already entered, the COMMAND LINE HISTORY (DOSKEY) can be used to create macros. Probably of most use to those who can never remember the correct syntax of a command is the ON-LINE HELP. Merely typing HELP followed by the command to be used will provoke a description of the command and syntax examples of how it should be used.

DOS 5 comes with a full screen editor (a subset of the Qbasic editor supplied with DOS 5) and is meant to replace EDLIN. It is a major improvement on the less-than-friendly EDLIN, and the fact that the Qbasic editor is supplied could be useful to those wishing to experiment with the language.

CONCLUSIONS

The upgrade comes on three 3.5" disks (or six 5.25") and installation is quite automatic. It also gives you the opportunity to save your existing system onto floppies. There are bound to be some people who are unable to load it properly, for whatever reasons, and this safeguard will allow the original system to be put back. DOS 5 certainly appears to be keeping up with PC developments and should satisfy most 3.3 and 286 users.

Copies of the DOS 5.0 upgrade are available now from The PC Mag for \$135 (plus postage) in either 3.5" or 5.25" format. Ring (03) 803 9661 to order.

Introducing DOS - 7

Shane Kelly and Tony Blakemore start to get into the nitty gritty of DOS commands and variations.

If you have been following this series over the past months, you will have gained a better understanding of what the DOS commands are used for and, in many cases, how to use them.

We will now build upon this foundation and expand, in alphabetical order, almost fifty DOS commands. Hopefully, this will provide you with a pretty good reference to help you to use your PC more effectively.

APPEND

This command attaches, or APPENDs, a directory to the current directory that you are in. For example, you may be in the root directory and the application you want to run may be in DIR1\SUBDIR1\SUBDIR2, but its data files might be in DIR2\SUBDIR1\SUBDIR2. You can APPEND both those subdirectories to the root directory with this command and so make the application and the data files appear as if they were in the root directory.

OPTION 1: APPEND C:\DIR1\SUBDIR1\SUBDIR2 (See the above notes)

OPTION 2: APPEND C:\DIR1\SUBDIR1\SUBDIR2;C:\DIR2\SUBDIR1\SUBDIR2

where the semi colon serves to separate the application files path and the data files path, both of

which will be APPENDED to the current directory.

OPTION 3: APPEND/X where the /X switch is used to ensure that file search commands operate and DOS commands operate properly.

OPTION 4: APPEND/E where the /E switch is used to ensure that the environment is searched each time for the path of the appended directory.

OPTION 5: APPEND/X/E

The /X and the /E switch may be used together.

NOTES: APPEND should be loaded before any applications that you wish to attach to the current directory are run. If you use the /E and /X options when loading append, you cannot specify the path with the command.

There is a limit on the number of characters the command will accept in the directory paths that you wish to append. It is 128 characters only. To cancel the current APPENDED directories, use the following form - APPEND; That is, APPEND with no paths and a semi-colon.

BEGINNERS NOTES: APPEND is a command that is really only useful with a hard disk drive. It cannot be used with some DOS commands and gives erroneous results with others. It may be used in a network situation. If you can work around it with the PATH command, do so.

ASSIGN

This command attaches or ASSIGNs a disk drive to another disk drive. For instance, say you have a program that insists on running from the A: disk drive, and you have the program located on the C: hard disk drive. You may use this command to fool the program into thinking that the C: drive is now the A: drive.

OPTION 1: ASSIGN A = C (See the above example)

OPTION 2: ASSIGN A = C B = C will assign both your floppy disk drives to the hard disk drive, C: allowing any programs that need to access the floppy drives to get their data from the C: drive.

NOTES: Drive re-assignment should be used only for those programs that absolutely require it. If you re-assign the drive containing the ASSIGN command you cannot cancel it without re-booting your computer. Some DOS commands ignore the drive re-assignment and others won't work properly with it

installed. To cancel the ASSIGNments made, just issue the command as - ASSIGN with no drive letters.

ATTRIB

DOS stores information about files in the directory. Along with this information is stored what are called the file ATTRIBUTES. These specify how a file is to be treated by other DOS commands and how the user interacts with the file. These ATTRIBUTES are as follows READ ONLY That is, the file cannot be written to or altered. So you can load the file, execute it, and print it, but you cannot change it. ARCHIVE this attribute is there to tell if a file has been modified. If you change a file the system indicates it to other DOS commands and the user by this attribute.

OPTION 1: ATTRIB + R C:\DIR1\SUBDIR1\FILE1 .EXE
The plus sign turns ON the ATTRIBute, making the file located on drive C: in DIRectory 1\SUBDIRectory 1\ with the name FILE1.EXE read-only.

OPTION 2: ATTRIB-R C:\DIR1\SUBDIR1\FILE1.EXE
The minus sign turns OFF the ATTRIBute, making the file located on drive C: in DIRectory 1\SUBDIRectory 1\ with the name FILE1.EXE read and write, or making that file a normal file again so that you may alter it.

OPTION 3: ATTRIB + A C:FILE1.COM
This form of the command turns ON the archive ATTRIBute for the file FILE1.COM in the current directory.

OPTION 4: ATTRIB-A FILE1.BAT
This form of the command turns OFF the archive ATTRIBute for the file FILE1.BAT on the currently used (or LOGGED) drive in the current directory.

NOTES: The filename may be specified with a path and an extension (see above examples) and DOS wildcard characters may be used.

BEGINNERS NOTES: It is a good idea to make all your DOS files or commands read only, so that you don't accidentally erase them. You can use this ATTRIB command on any file and it is recommended that you make your valuable data files read only as well.

BACKUP

This command backs up, or copies files from one disk drive to another. It is usually used for backing up

hard disks onto floppies so that you have a copy of your valuable data and program files.

OPTION 1: BACKUP C:FILE1.EXE A: would BACKUP the file FILE1.EXE on drive C: in the current directory to drive A:, assuming a formatted disk is in drive A:

OPTION 2: BACKUP C:*A: would BACKUP all files on drive C: in the current directory to drive A:, assuming you had a formatted disk in drive A:

OPTION 3: BACKUP C:\DIR1 A: would BACKUP all files in DIR1 on drive C: to A:, assuming you had a formatted disk in drive A:

OPTION 4: BACKUP C:*A:/S would BACKUP all files on disk C: to A: INCLUDING subdirectories on C:

OPTION 5: BACKUP C:*A/S/M backs up all files on C: including subdirectories that have been modified since the last backup.

OPTION 6: BACKUP C:\DIR1 A:/A backs up all files on C: in DIR 1 to A:, ADDING files to the DISK in A: without overwriting any of them.

OPTION 7: BACKUP C:*A/S/D:12-15-88/T:12:00:00 backs up files on drive C: that are in subdirectories that have been altered on or after the specified date and time on that date.

OPTION 8: BACKUP C:*A/F backs up all files on drive C: to drive A:, FORMATTING the disk in A: if it is not already formatted, then backs up the files.

OPTION 9: BACKUP C:\B/S/L backs up all files on drive C:, including subdirectories, and creates a BACKUP LOG file in the root directory on drive C: that records the backup process.

NOTES: Backed up files are not stored in the normal format, so cannot be used as normal files. Be sure before you start that you have an adequate supply of FORMATTED FLOPPY disks on hand. You must also label the disks in the proper order so that you can restore them in that order. SEE RESTORE for more information on redeeming your back up files.

BEGINNERS NOTES: This command is usually used with a HARD DISK DRIVE. It is not an easy process to use, and can be confusing for the first timer. It is recommended that you keep copies of your files by using DISKCOPY or simply copying your files onto another copy disk.

MORE COMMANDS ARE EXPANDED NEXT MONTH!

GAME PLAY

RORKE'S DRIFT

STREET ROD 2

REVELATION

LEMMINGS

WHITE DEATH

VERDICTS

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

RORKE'S DRIFT

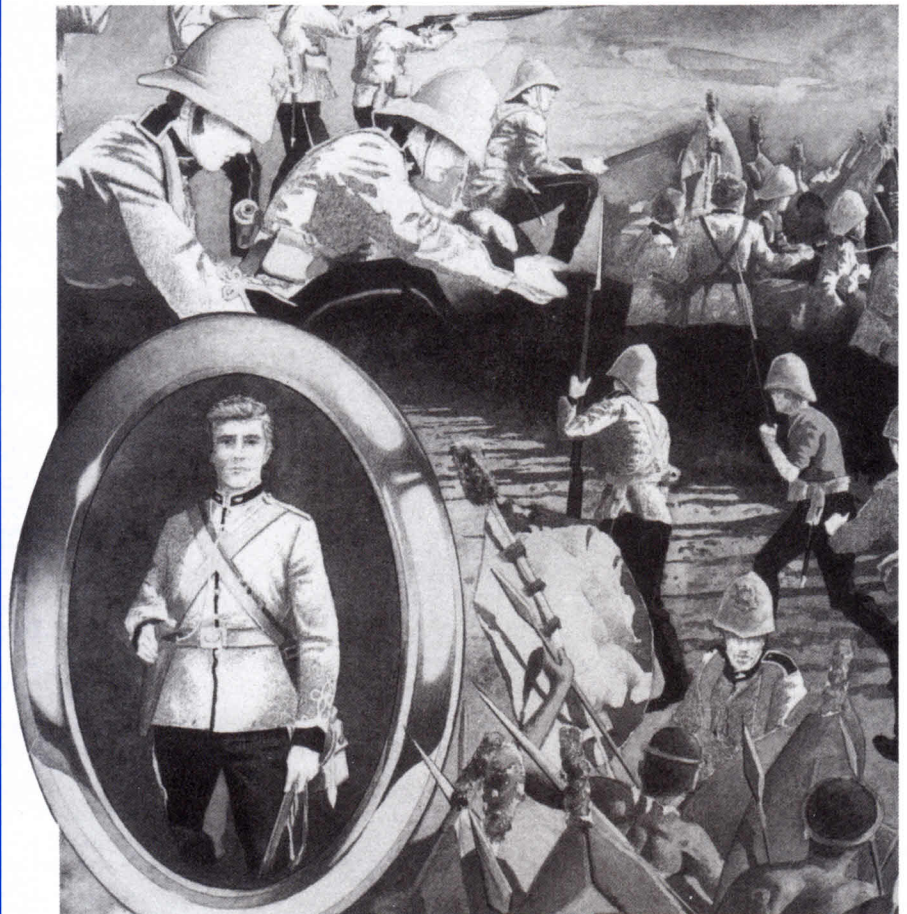
- Published by Impressions • Distributed by DirectSoft Australia
- Supplied on 5.25" disks • Price \$59.95 • Mouse recommended
- Requires 512k minimum • Best on 286 or faster
- Supports CGA, EGA and VGA screens.

The game for this review comes from Impressions, in the United Kingdom. The title is Rorke's Drift and it is part of Impressions' "Plato" range, billed as "...top quality strategy games..."; in other words, this is NOT a shoot-em-up game, although you do get the chance to pot the odd opponent - about 4,000 of them in fact.

As I am a "table-top wargamer" of some 17 years experience, and have read Donald Morris' brilliant book on the Zulu Wars (The Washing of the Spears) at least six times, I

looked forward to Rorke's Drift (RD for short) with great anticipation. The game is written by a team of dedicated "table-toppers" and is the closest thing yet on a computer to reproducing a table-top wargame with individual metal figures. It is a concept worth looking at, and it is fun.

The defence of Rorke's Drift was one of the miracles of Britain's colonial army. During the Zulu Wars over 1,700 British, colonial and native troops were massacred at Isandlwana by a large Zulu force on January 22,



1889. Over 4,000 of the victorious Zulus pressed on to Rorke's Drift the following day to destroy an outpost manned by 101 able-bodied men and 36 wounded and sick soldiers. You, as the player, take the part of each one of those men, issuing them with individual orders for movement and firing, and engaging in hand-to-hand combat when the Zulus get to close quarters. As there are 4,000 Zulus, close combat is inevitable!

For those who don't know their history, or haven't seen the film Zulu, the British at Rorke's Drift fought the Zulus to a standstill and killed hundreds of them, winning perhaps the most uneven battle in history against all odds. The game RD sets out to allow you to do just that, if you can.

The game is well presented, in a small box with excellent artwork and a multi-lingual manual. The manual is brief, but also very vague, and the section in English takes up only five pages. This proved to be a weak point, as I got into the game without clearly understanding some of the finer points of issuing orders, and quickly got frustrated in trying to get my men to carry out their orders.

I would caution players to read the instructions very carefully, and simply give up on the idea of winning your first battle; just concentrate on learning to move your men around and give them firing orders. The vague documentation can be overcome, and a rewarding game is on the other side of the learning curve!

I really liked the 16 colour EGA/VGA graphics. A lot of effort has gone into them, with each figure animated by a combination of up to eighty "frames", which allows realistic movement around the battlefield or when engaging in combat. You, the player, look down on the well-detailed battlefield as though you are

HISTORICAL BACKGROUND

Just after noon on January 22nd 1879, the British army undertook the first engagement with the Zulu empire. Wrongly, they assumed they were fighting ignorant savages. Yet already they ruled an impressive empire which covered a large area of Southern Africa. An army of over 50,000 men had trained hard, and led by their King - Cetshwayo, had become a highly disciplined fighting machine. The British encampment at Isandhlwana was unprepared for the co-ordinated assault directed against them, and the column was annihilated.

An army of 4,000 warriors then pressed on to the British outpost at Rorke's Drift. Here stood a church and a hospital in which there were 36 wounded and sick soldiers. There were just 101 able-bodied men. Led by their highest ranking officer, a lieutenant of the Royal Engineers called Chard, the Redcoats built a perimeter of barricades from mealie bags and wooden crates. The battle that followed was full of bravery and devotion to duty on both sides and eleven Victoria Crosses were won by the British defenders.

looking at a wargames table, and you can scroll around to follow the action wherever it is occurring.

Having given orders one by one to all 137 of your troops (there is a "repeat order" function to make this task somewhat easier), you can go into a "fast battle" mode and see what happens. It is rather like watching a movie, but don't watch for too long however, as you have to keep going back into the orders screen to make adjustments in positions, and oversee hand to hand fighting when the Zulus get too close, or select individual soldiers to give them firing orders, and direct their fire at whichever Zulu you feel is most deserving. This is an important point to remember; your troops must be given orders to shoot every round, or they will simply get overrun as they stand idly by.

This all takes time, and I must admit that RD is a slow game to play. It is unlikely you will get a battle finished in an evening, but there is a game-save feature, so you won't have to throw away a promising battle just because it is time for bed! (A hint here is to set up the game and get all your defences "just so", then save it so you never have to go through the initial positioning of troops on the "table" again, unless you want to experiment with different defences).

After a while I got the hang of

things, whipped my men into some semblance of order, covered all the walls, and awaited the attack. Let me tell you that 4,000 Zulus take some beating. They kept coming in seemingly endless waves, despite my use of massed volleys. I forgot to make good use of the Quartermaster, who hands out ammunition, and some of my men ran out of ammo at a critical time. The key to success is, I suspect, skillful use of firearms against the Zulu's spears. I wasn't skillful enough first time out.

With a break in the lines, the Zulus spilled in and it was all over for me, alas! All I had to console me was the fact that I'd killed a lot of them first (the game keeps score and you can see the head count at all times), but at least it was only a game, so I can try again.

To sum up, this is really a good little game once you get past the poorly-written instructions and learn to use the icon-driver controls correctly. If you like table-top gaming, you should get a lot of fun exploring the strategies of the game, for that is what it primarily is, a strategy game. It is not a "quickie" arcade-action blast, and habitual Airborne Rangers will find it "different". But it is worth trying!

VERDICT ■ ■ ■

STREET ROD 2

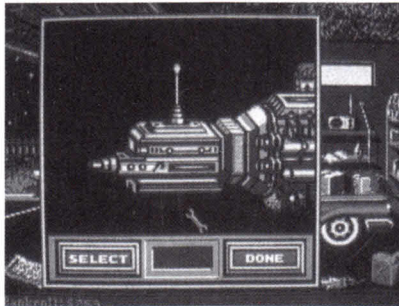
- Published by California Dreams • Distributed by Electronic Arts
- Supplied in dual format • Supports Ad-Lib or Game Blaster cards
- Requires 512k for CGA or 640k for EGA, VGA, Tandy 16-colour or Hercules screens • Price \$49.95 • Keyboard, mouse or joystick

Remember the atmosphere of Grease and Happy Days? Both featured young Americans blissfully ignoring world politics, spending their days either at the local hamburger joint or racing modified cars. Now, California Dreams have launched another game sequel which tries to capture the spirit of those times. The story line places you in 1969, and school's out for the summer. You've managed to save some money and you've just got your drivers licence. Now, you've got to get a car and race it to earn yourself fame and fortune. Can you become 'King of the Road'? Only after a summer of racing will we ever know.

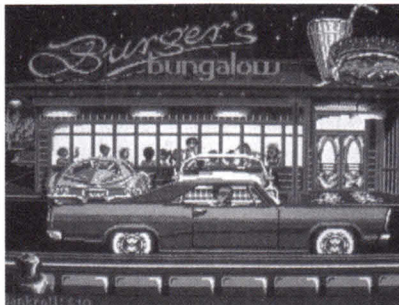
Upon loading you are presented with the graphic selection screen. A good feature here is that the program assesses your computer and recommends the best graphics option for you. You can either accept this, or overrule and choose your own option. The program supports all graphics modes, but only 16 colours in VGA mode. If you have a sound board fitted, you'll next be asked to choose your sound option. With an Ad-Lib card fitted, the introductory music is very good and atmospheric, but even with an internal speaker it's not too bad. Whichever sound you have, the constant music will begin to irritate very soon but, good news, they can be turned off.

You start the game with \$1,200 and a newspaper. You first have to check the used car ads and buy a car. You can start racing straight away, or buy

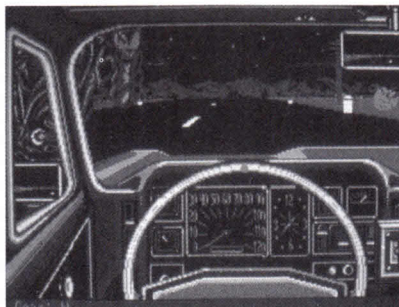
some spare parts and commence working on building your dream machine. The money you have



You're the mechanic! Chop the top, bolt on a hot differential and tube headers, and tune up your new racing engine. Paint that baby to look cherry.



You're the challenger! When the locals cruise you, pop their hoods to see if they're worth your time. Some of them just want to race for thrills.



You're the winner! Sharp turns and narrow bridges keep you jockeying for the lead. Bump out the competition to see your name on the Wall of Fame.

won't let you buy the best car available, so you'll have to do with a machine that can only go a bit faster than a Sunday driver. If you bought some spare parts, you can now change any of the components that you wish. If, for example, you bought a new engine, you first have to strip the transmission, carburettor and manifolds off the engine before you can remove and change the engine. This is done by removing the bolts that secure the parts and then choosing the replacement and attaching the bolts again. You can change most of the components of your car, even remove the bumpers and roof. This section is easy to use and the accompanying sounds are very realistic. After working on your car in your garage, it's time to hit the streets, so cruise on over to the burger joint and check out the opposition. Before you challenge an opponent, it's advisable to check the equipment he (or she) has under the hood (that's a bonnet to us Aussies), then you get to decide on the level of the challenge.

There are three different types of races; drag, race on Mulholland Drive or try out the aqueduct (like a big storm drain). You can also choose to race for the fun of it (which helps build your reputation), money (which helps you build your bank balance) or pink slips (rego papers). The best trick is to only challenge cars that are less powerful than yours or your game is going to be short. You've now got until the end of the summer holidays to get a powerful enough machine to challenge for the 'King of the Road' title, or you'll go back to school as just another nerd. There's another chance for you to earn fame and fortune. Every Wednesday night is Grudge Night. You will need \$30 to enter the competitions, and these consist of a series of drag races

along a straight track. You first get a timing run and you cannot beat this time during the remainder of the rounds. Beat your opponents and keep below your set time and you get to go on. Win the competition and you get a cash prize, which comes in handy for either buying parts or challenging opponents.

Graphically, Street Rods 2 is good, but VGA mode could have been used to a better effect. Sound is good, with a sound card needed to get the best effects. Control of your car is by either keyboard, joystick or mouse, and all are fairly responsive and easy to use. There are some good aspects to the animation, such as the waitress at the hamburger joint skating to the cars with her hair bouncing, and the way roadside details appear in your rear-view mirrors. One major gripe is the amount of disk swapping required. Juggling two 3.5 inch disks was a bit tedious, so I'd hate to have to juggle four 5.25 inch disks. Save the tedium and install it to a hard disk if you have one.

California Dreams have put a lot of work into Street Rod 2, and have produced quite a good game. As a lot of the races are drags, steering doesn't have to be an important consideration, but even this is well produced in this version of the game. Better use could have been made of VGA graphics, but all things considered it's not a bad offering, even taking the disk swapping into account. (It would have been nice if they could have reproduced the girl on the box cover as the starter). If you like driving games and like to work on cars (but like me have two left feet when it comes to engines) grab hold of Street Rod 2, and become 'King of the Road'.

VERDICT ■ ■ ■

REVELATION

- Published by Krisalis Software • Distributed by Pactronics
- Supplied on 5.25" disks • Price \$49.95 • Two player option
- Requires 512k and CGA, EGA or VGA screens
- Supports Ad-Lib sound card

Krisalis isn't one of the best known software companies, particularly to us here in Australia. The only game I've heard of is Manchester United, a soccer game. Now, from this unknown source, a game with an unusual title has emerged, and to tell the truth, it's pretty good.

If you have ever tried to guess what a computer game is all about by looking at the title, you'll be completely fooled by Revelation. It's not about who will be leader of which parliamentary party tomorrow, or even about which member of the royal family has illegitimate children somewhere in the world.

Revelation is a game about safes. The aim of the game is to turn the dials on the front of the safe, throw the tumblers and open the safe. Once you're into the safe, you get to loot the boxes in the safe and, whatever you collect you get to keep, and what you manage to grab will be converted into your score.

There are 88 different levels in the game, with some being very simple and others being very difficult. At the end of every 10 levels, you are given a password, and knowing these means you don't have to keep going back to level one for every game.

Each screen consists of a number of tumblers, some of which have combination dials on them. Each tumbler has four colours on it, and all you have to do is turn the dial until the colours match and this causes a chain reaction, turning the other wheels and dropping the lock into place. To show you how successful you are in opening a

safe, a locking bar is shown at the bottom of the screen and this gets shorter as you manage to throw more of the locks in the safe.

Being a burglar isn't all wine and roses, however, as you only have three lives to lose before you are told that your career is finished (ie. Game Over). Each level is played against a time limit, and if you fail to open the safe within that limit, you lose a life. The quicker you manage to open the safe determines the amount of time you'll have left to loot the boxes. You'll need all the time you can get if you want to open every one of the boxes. To ease your task of opening the safe, you also start with three tumbler locks, which you can place on a tumbler and hold it in its position. Use these carefully, because there are some screens where you definitely need these aids. Added obstacles to be overcome in some of the levels are alarms. These appear on each tumbler as a flashing red segment, and if you accidentally match these you will lose another life. Also on some tumblers are white segments which do absolutely nothing and don't match with any other coloured segment. And that's about all there is to Revelation; it's a simple game concept that's very easy to play.

Revelation comes with two 5.25 inch disks, with the CGA version on one and the EGA/VGA on the other. Graphically, Revelation is good in EGA/VGA mode, but as expected the CGA graphics are not as good. Each different screen has a different

background, with keys, tumblers, watches and electronic circuits all around. Although there is a lot of detail in the background graphics, it doesn't clutter the screen one little bit. The tumblers vary in size, depending on how many are on the screen. The only gripe I'd have is that when there are a lot of tumblers on the screen (say about 10 or so) they are a little too small. Sound is a bit of a mystery. The information on the back of the box claims that this game features a musical soundtrack. When I started to review the game I used my internal PC speaker and there wasn't a sound from the game. However, when I turned on the speakers attached to my Ad-Lib card, I was treated to a very good soundtrack, although there were limited game effects. What this means is that unless you have a soundcard, Revelation will be as silent as the grave, and in this day and age I think this is a poor feature of the program. However, all things considered, this game is not a bad effort and very enjoyable.

Revelation is a very impressive program, if you have EGA/VGA and a sound card. If, however, you have to play it on a standard PC you might be disappointed. Even though it really caters for more than your average system, the concept that Krisalis have developed for Revelation is simple and addictive. It's the type of game that keeps you coming back for more, and you feel an achievement when you make it to the next level.

I am very impressed with the finish of this offering. Let's hope more of their releases are brought into Australia because, if they are up the standard of Revelations, Krisalis will be a label worth trying.

VERDICT ■ ■ ■

LEMMINGS

- Developed by DMA Design • Distributed in Australia by Questor
- Supplied dual format • Price \$79.95 • Supports sound cards
- Requires 640k and CGA, EGA, VGA or Hercules.

Since the arrival of Lemmings, our normal household sounds have changed. In fact our very way of life seems to have changed. It's not often that a game will attract so much attention by all members of the family and be the cause of constant conversation.

The concept of Lemmings is simple (so many good games are); that is to rescue a pre-determined number of cute and furry little lemmings within a specified time before they disappear into oblivion.

The trouble with lemmings is that they blindly follow each other without worrying about whether their path is leading to disaster. The other problem is that there are heaps of them pouring out onto the screen. Thank goodness there is a pause button. This gives you time to survey the particular problem, see what "tools" you can use and then launch into the rescue operation.

Rather like the ad on TV for a breakfast cereal which says something like "if you don't tell them it's healthy they'll eat it", one could say about Lemmings "if you don't tell them it teaches logical thinking they'll play it". Because, despite the fun, excitement and addictiveness of the game, Lemmings makes you think very carefully.

Moving a colony of lemmings from A to B may sound simple enough, but if the route is blocked by a rocky out-crop, how is it possible? At the bottom part of the screen are small lemming icons with a number above them. For example, a 'Jeff Fenech' style icon with a "2" above it indicates that you can change the

function of any two lemming from mindless wanderers to a "punch through the rocks" workers. They will form a small escape tunnel.

You have the facility to change lemmings (depending upon the level you are playing) to become parachutists, vertical tunnellers, angle tunnellers, blockers, climbers, bridge builders and bombs. On the easy (fun) level, there are normally quite sufficient numbers of lemmings capable of changing to complete the task. However, moving to higher levels will reveal less. On all levels the allocated time ticks away on the screen adding to the urgency of the game.

Some of the puzzles seem down-right impossible, but always, it seems, after some thought and a few more attempts it can be solved. You don't always have to save all the lemmings, in fact, a 'blocker' cannot move once in position, so the only way to finally clear the screen is to detonate it. There is also a special "nuke" button which will detonate all lemmings on the screen to enable you to go back to the start again.

The graphics (on VGA) are superb with plenty of colour, and the animation is smooth with humourous touches in the actions of some lemmings. The in-game music is very well arranged with many readily recognisable music passages.

With 30 puzzles each over five levels, I doubt that normality will return to our household for a while yet. An excellent game!

VERDICT ■ ■ ■ ■

WHITE DEATH

- Published by Intercine • Distributed DirectSoft Australia
- Supplied in dual format • Price \$89.95
- Requires 512k and EGA screen minimum

By far one of the most infamous and bloody battles of WW II was the battle of Stalingrad. It was the turning point of Germany's war in the east and one of the costliest ever. One of the smaller but crucial engagements of this battle was fought at a rail junction called Velikiye Luki. This has now been converted into a simulation by Intercine as part of their new collection of war simulations.

Intercine's new range of war games approaches the topic in a different way to most previous software of the type, a great deal of research has obviously been done into the larger range of table top battle simulators and they have adopted the same formula for their computerised versions.

Like the table top models the game is played on a regional map overlaid by hexagons, a unit may move a certain number of these per turn, determined by the unit type and the type of terrain it is trying to cross. Each unit also has its own particular advantages and disadvantages over different terrain, these are reflected in its

movement and combat capabilities.

Like in the original games the army units are represented by square counters, each having a symbol that states the unit type (infantry, tanks, artillery, ski units), in White Death they have resorted to the symbols that are common to most of these games, these bear no resemblance to the actual unit type (eg infantry is represented by an X not by a little man) but once you start playing they become an easy to identify standard and most experienced gamers will appreciate this decision to stick to the standards. Each counter contains plenty of detail of unit type, size, identification, strength, movement remaining and movement type.

Combat occurs between adjacent units, the combat screen appears when you select the hex which you want to attack, this screen allows you to see this hex and the surrounding six and the units in them. From the units available you then pick which ones you will use in the attack. The

attack-defence ration is calculated according to the number of strength points on either side. The computer then rolls the dice and the result is matched up with the combat results table as you would in the standard board game.

All these features give you a game that is faithful to your usual board game while giving the advantage of computer automation to do all the tedious calculations and chart consultations. All the features you would expect to find, artillery, air attacks, weather effects and many others are well handled by the computer.

The great detail that is present in this game is unfortunately again overshadowed by the interface, the menu system is not of the standard we have come to expect in today's software and could do with considerable improvement.

The manual presents approximately 40 pages of solid reading, it is advisable to go through it before you even think of playing the game. Even if you have had some experience with these games you will find that the rules are sometimes quite different and not everything works in the expected way. Two charts are also provided, these present not only terrain and combat effects tables but more importantly an order of appearance chart that lets you know which units will appear as reinforcements on a given turn.

Overall the game is well packaged, the graphics are adequate (unfortunately still EGA only) and the gaming aspects are well developed, but the interface needs improvement. Hopefully with time Intercine will overcome these teething problems that are present in their software.

So, if you are interested in this style of gaming give White Death a shot, just be prepared to read the manual first and play later.

VERDICT ■ ■ ■



Sound advice

Andrew Fort discusses the various sound card options available - for richer or poorer!

Since around 1982 when games for the PC started to be seriously written for the PC, there has been a need for a device which produces a sound better than the PC "squeaker". Tandy have played around with 3-voice music systems on-board and also Digital Analogue Converters (DAC) in their machines, but since Tandy were a smaller party in the PC market, support for these cards was limited, although the newer Sierra games and other now tend to include support for them. IBM have made a few efforts with their music feature card and voice card, although the support for them seems to centre on Sierra Games as well.

From the arrival of the first reasonably priced PC music card (which took IBM's own out of major contention), there has been somewhat of a boom with about five or six music cards and devices appearing over the last 3-4 years. Most of them produce sound equal to or better than the output from the Amiga and Atari ST, so now the PC with VGA screen can be considered a serious option for games, especially as new releases using these cards to their fullest advantage. Sound cards may well become the item at the top of many PC user's shopping lists so the following comparison of some of the major ones may prove helpful.

GAME BLASTER (Creative Labs C/MS card)

This was the first entry by Creative Labs into music cards (they now have the Sound Blaster) and is not

what could be said an excellent product. The card produces 12 voice stereo sound, which is all right by itself, but the sound quality and realism produced is somewhat disappointing. The instrument voices very rarely sound anything like the actual instruments they are supposed to represent, and although some programs have managed to produce passable sounds out of it, it is not a good choice for serious musicians or even game players.

It is easy enough to install, has adequate manuals, but when run sounds very much like the sound output from a Nintendo Gameboy. It cannot produce realistic percussion sounds and although it has been done with reasonable results, quite a few programs which use percussion in the AdLib and MT-32 compositions, leave it out of the C/MS version. Software support is limited, and the only serious music software available for it is the Creative Music System software (supplied with the C/MS, optional with the Game Blaster) and this has a rather poor look to it.

The operation is basic- run a text-editor, run the text file through the auto-bass-chord program, run the output file through the player program, then finally listen to the very rag-time style of music it almost always makes. In it's defence though, it is still a very good improvement over the PC speaker, and it is near the cheapest of the lot. Even though, it should only be considered by gamers on a low budget.

RATING

Realism: 40% • Support: 50%
Price: (For C/MS) \$260-\$299
(For GAME BLASTER) \$160-\$199
Value for Money: 65% • Overall: 55%

MUSIC CARD SYSTEM (AD-LIB)

This was the first music card to be released that produced good results. It provides an 11 voice monophonic sound using FM technology to produce the sounds. The 11 channels can be used in two modes; Percussion, of which 6 channels are music and 5 channels percussion, with the latter channels set (but changeable to music if wanted); or Musical with a straight 9 channels music. One wonders why you can't use all 11 channels for music.

It produces realistic and believable percussion and instrument sounds, and is good for all types of music produced by games. It comes in a cardboard covered polystyrene box, and contains the sound card, a disk with the sound driver and jukebox program on it which contains a variety of reasonable music examples. For around \$150 extra, you get the same with the addition of the Visual Composer Software. This is a reasonable music program, and is

quite powerful. Since this was the first card to do well, support for it is almost 100%. It is still a pretty bad choice for musicians though, as it doesn't have MIDI support.

Ad-Lib is good choice for gamers, although now it has become a touch obsolete with the newer Sound Blaster card which is 100% compatible with the AdLib. Buy it if you don't want to spend as much money as the Sound Blaster although be warned; the Sound Blaster is being sold by a number of shops and price has dropped quite a bit over the past few months. This means that you could end up paying more for Ad-Lib (certainly if you buy the card with the composer).

RATING

Realism: 80% • Support: 95%
Price: \$200 - \$250 in normal configuration,
Extra \$150 for the visual composer.
Value for Money: 65% • Overall: 75%

SOUND BLASTER (Creative Labs)

This card is a comparative newcomer to the scene, being released around the middle of last year. It features the capabilities of Creative Labs earlier product, the C/MS card, as well as the AdLib Music Card, and in addition, a Digital Analogue Converter (DAC) which has been used more recently for digitised samples in games. This function includes hardware compression and decompression software enabling the card to play with reasonable quality, but small digitised sound files. Size is a problem in this area, and in spite of the hardware features, it is not really used in games because of loss of quality. Installation of the card is similar to that of the AdLib and the C/MS and also involves setting the jumpers for address location of the card (220-260 hex) and interrupt request channel (IRQ 2,3,5,7).

Included with the card is specific software to reproduce sounds, not unlike a talking parrot. You can talk into a microphone (not included) plugged into the card and the 'parrot' repeats the sound. This shows the feature of the DAC channel. There is a voice record/voice retrieval/playback program, an organ program and a speech synthesiser program included. The speech synthesiser program uses the AdLib mode of the card, and comes with Dr. Sbaitsio, which is basically a modified version of the fake AI program, Eliza. Software support is the largest of any card available for the PC, since it incorporates two other cards. The quality and realism of the sound is identical to that in the modes of the other cards it emulates. It also includes a joystick port.

Another feature rarely used but one which could create fantastic results, is that the Card can use all of its modes at once, producing a 24-voice music card.

Often two are used, but I've seen one program, a demo, that uses all 24-voices. A MIDI add-on box (plugged into the extra joystick port on the back of the card) is around \$180 and includes a sequencer and the box, but since the interface is not Roland compatible, there is little software available. A reasonable card for musicians with the MIDI interface, and a good card for gamers.

RATING

Realism: 40% (C/MS), 80% (AdLib),
60-75% depending on sample speed (DAC)
Support: 96% • Price: \$320-\$400 (Depending on
card version, newer cards don't have C/MS chips)
Value for Money: 85% • Overall: 85%

MUSIC FEATURE CARD (IBM)

Although I was not able to personally test this unit for an extended period of time, I had limited use of one and since the manuals were not at hand, I got the capabilities from a Sierra help file! Anyhow, it produces "8-voice polyphonic" sound using FM (frequency modulation) technology to produce 240 pre-programmed voices and 96 user definable sounds. In addition, this unit is also MIDI compatible, although we are pretty sure it does MIDI without a separate MIDI card. The unit produces very clear and realistic sounds, and was quite pleasing to listen to the soundtrack in Kings Quest V. Software support is a problem, as with all the IBM sound cards, due to their high price, and limited availability (especially over here in Australia). There is some serious MIDI software including something from IBM I believe and the only firm support comes from Sierra. A choice for die-hard IBM users who are musicians, but not for gamers. The only gamers to be completely satisfied by it would be Sierra players!

RATING

Realism: 90% • Support: 25-30%
Price: Somewhere around \$1250-\$1500
Value For Money: 30% • Overall: 35-40%

SPEECH THING (Covox)

I had even less time to see one of these, but I did have a bit of promotional material for it - so, don't take what I've said here as being completely the truth. The Speech Thing is simply a DAC unit, which from what I saw and heard is a nice looking, well performing unit. It takes the form of basically a speaker with a bulge in the back for the workings. To connect it to the machine, an interesting approach has been taken. The unit plugs into a parallel port in the back of the computer. A nice idea, but the clone industry in Australia mainly tends to put a single parallel port on the machine, so if you've got a

printer or other device on the port, you've got to buy another I/O card.

It sounds good, and produces a quality of DAC sound around or a little above that of the Sound Blaster. It has little support because of basically one reason. Limited applications. Let's face it, there aren't many games which need only digitised sound - not decent music as well. Other than this, it's quite cheap although not quite cheap enough - Around \$150-\$200 for a DAC unit. Usage? Not much. Don't consider it unless you really want one. There is also another Covox card, which comes with a headset and sampling software. It says on the promotional material, that the sounds sampled can be played back with the addition of the SPEECH THING. This unit costs another \$150-\$200 so on top of the ST, that's \$300-\$400.

RATING

Realism: 65-90% (Depending on sample speed)
 Support: 10% • Price: \$150-\$200
 Value for money - 60-70% • Overall: 40-50%

MT-32 MIDI SOUND MODULE (ROLAND)

This device was originally only supported by one-off games, and the only real cross-the-board support for this has been from Sierra. Nowadays it is quite well supported in most software. It produces 8 separate synthesiser parts along with 30 rhythm sounds. In addition, like most of Roland's devices now, it is MIDI compatible. Since this is a device which interprets incoming MIDI signals, not just from a computer, the PC needs a board to be MIDI able. For use with the MT-32, this must be Roland MPU-IPC compatible (which costs around \$200-\$240).

The module comes in the form of a quite stylish black box, with a few dials for volume and option selection, and buttons for MIDI channel selection. An LCD display tells you it is an MT-32 on power-on, and displays information such as volume currently selected, instrument for the channel selected etc. It is a unit which is designed primarily for serious music work, although some people have bought the device to use just for their PC in game use.

The sounds produced are quite outstanding for a unit around this price range (comparative devices can cost \$500 more), and are clear and a little better, I believe, than those produced by the IBM PC Music Feature Card.

An all round good choice here, although the price of around \$800 for the unit and \$200 for the MIDI card will obviously turn away some users who just don't want to fork out in excess of \$1000 to make their PC sound better. (Don't forget you also need an amplifier, like the one in a stereo system, to use the device).

RATING

Realism: 92% • Support: 60%
 Value for Money: 60-70% • Overall: 75%

SOUND SOURCE

This unit is not a sound card in the true sense compared with the all the others mentioned so far. It's an add-on device specifically for the 'just released' Disney range of educational games and its purpose is to reproduce and amplify digitised speech, orchestrated music and sound effects supplied in the software packages.

It is a self contained unit which plugs into the parallel printer port of a PC (without losing the use of your printer). It houses a small amplifier and a 3" speaker which are driven by a 9 volt battery. It also houses a volume control and headphone jack. All the voices of Mickey Mouse, Goofy and other Disney characters are faithfully reproduced. Without the unit attached the games become a little lifeless as the unit appears to be the only method of extracting sounds from the games.

The price is just \$99, but there is little point in giving it a rating as it is not meant to compete with the other sound cards.

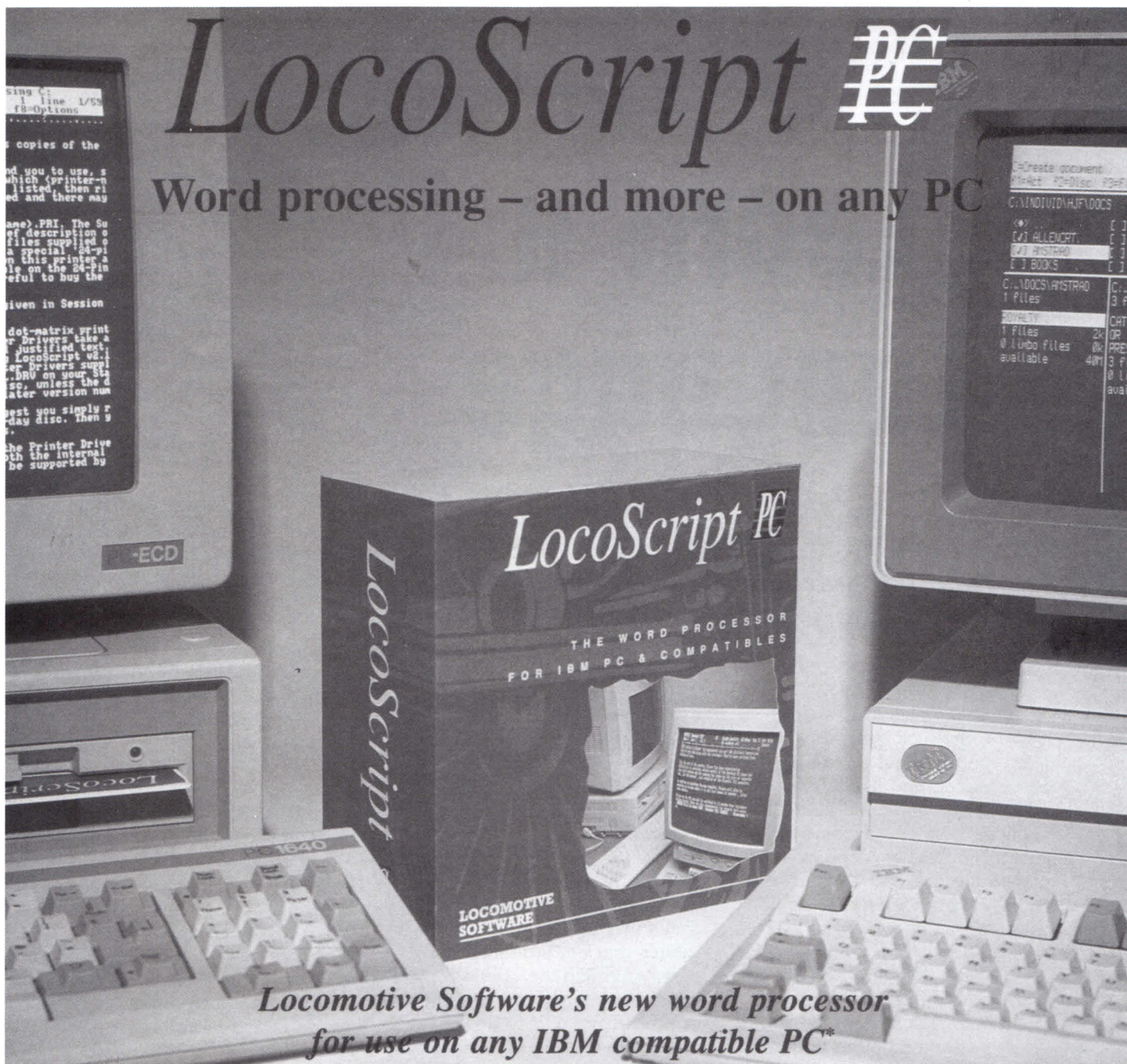
THE VERDICT

Firstly, I'll quickly go over the ratings for the people who might not understand them. *Realism* is a comparison between certain sounds and the real-life equivalent. Obviously there is hardly any device which can get a total 100%. *Support* is a percentage calculated by getting the average total number of games which support any of the sound cards listed and seeing how many support that particular card. The Sound Blaster has the highest support rating. *Value For Money* is a price versus performance/support evaluation. A device may sound great, but if it costs too much and has little support, then it will get a low VFM rating. *Overall* is just taking all these ratings into consideration.

For a gamer with around \$1000 to spare, the MT-32 is a perfect choice. It is also a perfect choice for the serious musician on the PC as it is well supported by music software. The choice for the gamer who wants a reasonably good sound but can't afford the MT-32, buy the Sound Blaster. If you can't afford that (\$350), the cheaper AdLib (\$200) or the Game Blaster (around \$200) is the one to buy. If you are going to buy the MT-32, but are not happy about the price, check out the AdLib and Sound Blaster. They both provide great support, a very good sound (not that far behind the MT-32/IBM Music) and a product you would be happy with. On a final note, if you're going to buy any of these, ask your dealer to let you hear it before making a decision.

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Learn a Language

If you are fed up with playing games, Angus Kidman introduces you to the idea of programming on your PC.

You've used it as a word processor. You've balanced your budget on the spreadsheet, and used the database to catalogue your CD collection. You've dabbled in desktop publishing, and even played the odd game (when nobody was looking). So now what do you do with your PC?

Well, apart from continuing to do all these things, or throwing it in the proverbial cupboard, you could learn to program it. That is, instead of getting other people to tell your computer what to do (i.e. buy software for it), you could tell the computer what to do yourself.

WHY PROGRAMMING?

Of course, there are so many programs available for the PC that you might think, "Why should I learn to write my own? However, there are several good reasons to do so:

1. Learning to program will give you a much better understanding

of how your PC works, and this will make you a more efficient and able user of your computer. You'll learn to appreciate your software and use it to its full potential.

2. You can make the computer do exactly what you want. No more complaining about software that won't run on your system, or games that are too difficult to play. Anything the computer is capable of doing, you are capable of programming it to do.

3. Believe it or not, programming is fun! There's nothing quite like the feeling of satisfaction you get from a program that you've written yourself.

4. It might also look impressive on your resumé.

WHAT DO YOU NEED?

All you need to begin programming is your PC, a blank disk (to store your programs on) and some language software. The point of these articles is to explain the differences between the main programming languages

around, so that you can pick the one that will suit your needs and abilities best.

The beauty of the PC is that any language you can name will probably be available to run on it, and probably in more than one version. Most of the main languages (PASCAL, C, BASIC, FORTRAN, COBOL to name a few) are available in public domain versions, and you can pick them up fairly cheaply. These versions of the language won't be as fully featured as commercial ones, but they're ideal for beginners.

As you progress, you might choose to buy one of the cheaper commercial packages, for the greater facilities it offers. Finally for the truly dedicated, the MicroSoft series of languages can be used to develop commercial software themselves. They're not cheap but for the really serious programmer, they're ideal.

Many PCs come with at least one language already supplied (e.g. Basic2 or GW-Basic on the Amstrads). If you've got such a PC, then learning that language might be a good place to start.

WHAT IS A LANGUAGE?

Newcomers to computing might be wondering, "What's all this stuff about a language? And why would I need more than one?"

Your computer will not do anything until you tell it to. When you switch on and insert your MS-DOS disk, the computer knows to load up MS-DOS. It knows this because of a series of numbers which are shoved into its memory somewhere.

Computers love numbers. They think of everything in terms of numbers. Unfortunately, humans tend to think of things in terms of words. The computer language allows you to type in words which sound something like English, and then turns them into numbers

which the computer can understand.

There are different languages because programmers like to do things differently. A language like BASIC is good for beginners, but isn't so good for speed. COBOL suits business programs; FORTRAN scientific ones. (All these languages will be discussed in the next article). You choose different languages for different purposes, just as you might choose different databases because of the function they contain.

With effort, you can write programs in any language to do anything; but you'd be stupid to write a program to draw circles in a language with no graphics ability when another language might just let you write CIRCLE to draw a circle.

ASSEMBLED OR COMPILED?

Languages come in two sorts: assembled or compiled. With an assembled language, when you run the software, you are able to

type in programs and see them working immediately. You can make changes to them, get them perfect and save them to disk. The disadvantage is that every time you want to run that program, you have to load up the language first (just like having to run your spreadsheet program to inspect your spreadsheet files).

Compiled languages work differently. You write the program first, using a word processor or an editor to create it. Then you use your language software, which goes through the file and converts it to a form the machine understands. It then saves this on disk as a program you can run directly from the DOS prompt. The advantage of this method is that other people can use your program without owning the language software you use. The disadvantage is that if there are mistakes in your program, you'll have to load up your word processor again to fix them, then run the language software again. Compiled

programs generally run faster.

More recent commercial languages have made this distinction unimportant. They allow you to write and edit your program, checking how it works as you go (like assembled languages) and then, when you've finished, create an 'independent' version (like compiled languages). Unfortunately, software like this usually costs more.

If you're only writing programs for yourself, it really doesn't matter whether you own a compiled or an assembled language (although an assembled one is often easier to learn). If you want to write programs for other people, you'll need a language that can compile.

That's about all for now. The next article will examine the features, disadvantages and advantages of the various popular programming languages. Armed with this knowledge, you'll be ready to whip up a programming storm on your PC.

THE BASIC FACTS

CHOOSE FROM TWO BOOKS TO START YOUR BASIC PROGRAMMING

1. GW-BASIC and PC-Basic Programming

This book is full of simple, practical examples. You'll learn the beginning steps you'll need to become proficient in programming with GW-Basic on your PC. Part of the Abacus Beginner's Series, it also covers menus, arrays, sorting data and file management. **\$39.95 + post**

2. BASIC2 User Guide

Essential reading for Basic2 users (probably Amstrad PC1512 or 1640 owners). Written by the developers themselves (Locomotive Software), this book gives detailed descriptions of Basic2 utilities, tuition for beginners, and advanced facilities for serious users. **\$49.95 + post**

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Winning way?

Every week millions of people try for the big money and the elusive Jackpot. Perhaps Q-Lotto may change their luck.

Whatever method you use to select numbers in the Australian Lotto Bloc 6/45 game - whether you chance your luck to a pin, use birthday dates or lucky numbers - the chances of winning are about 1 in 8,145,000. A new product from TJGM Software Services called Q-Lotto claims to "predict and analyse winning Lotto numbers". Analyse - it certainly does well, but predict - this will need a closer look.

The documentation advises that if you want to play Lotto to win, you need to have commitment, patience and consistency of play. Whilst the first two qualities are up to the player, TJGM reckon that their product will help you with the third. Using Q-Lotto provides the user with a way of "studying form" and facilities to choose numbers, at better odds than the statistical average, that will (on average) win more prizes.

WHAT YOU GET

Q-Lotto is supplied in dual format and needs an IBM or compatible (XT or AT) with MS-DOS 3.2 or higher, and will obviously run faster on a 286 or 386 and from a hard disk. It had been designed to run on and EGA or VGA screens but also works on mono screens. It is essentially a database and management facility containing the winning numbers of every draw since Draw Number 413. If you happen to buy a copy which is not completely up to date, you will be sent a disk (on registration)

containing all the draws from the time of purchase to the date of registration. The package also contains a 44 page booklet describing all the features and operation of the program.

WHAT IT DOES

The database is the heart of the product and facilities are provided to add, modify or delete any draws you wish. Obviously the Add function would be used each week to keep the database up to date. It also has a Browse facility to look through the entire database or at individual games, and a Print facility to drop it out to hard copy.

Entering the 'Evaluation of Past Draws' option is a way of studying form and having a bit of fun at the same time. All sorts of statistics can be extracted; the last time a particular number was drawn; the number of times a number has been a prime or supplementary etc. You can also enter a set of numbers (maybe those you are going to use next time) and see how they performed over the past 5 years. There is also a feature to identify 'hot' and 'cold' numbers. 'Hot' numbers are those which have been drawn over most often over the past few weeks and 'Cold' numbers the least often over the same period. TJGM suggest that you consider a combination of both hot and cold numbers in a selection.

If you are into using system entries, the 'Evaluate Systems' option is interesting. It will check

against the database the numbers for any system between 6 and 20, for either Mid-week or Saturday or both. You can also choose to see a particular division only and stop the display each time one is found. You can also determine how successful a particular system has been. Using the 'Random Number Selection' option gives you the opportunity to generate your own "Quick-Pick" from 1 to 20 numbers as many times as you wish.

PREDICTIONS

Using its own optimum pick rules, Q-Lotto can provide a prediction service. What in fact happens is that once invoked, the program will display three blocks of numbers, each block containing 30 numbers. Apparently, the mathematical and statistical techniques used in arriving at these numbers guarantees that at least one of the groups will contain a minimum of 6 out of the eight numbers to be picked in the next Draw. By reducing the choice of numbers from 45 to 30, your chances (on average) of selecting the correct numbers move from 1 in 8,145,060 to 1 in 593,775. The only problem is that you don't know which block to use. The documentation suggest you play all three groups.

SUMMARY

The program itself is easy to use and the documentation clearly set out. Whether it will make somebody rich is open to question, although those who know nothing about statistics could be persuaded that they may stand a better chance using this software. Using a combination of hot and cold numbers across the three "prediction" blocks over a period of 6 weeks, I seemed to achieve no better results than my usual stabbing at numbers. But as the documentation says "if you want to play Lotto to win, you need to have commitment, patience....."

Q-Lotto is available from software outlets (we think) for \$59.95. It is also available by mail order from The PC Mag on (03) 803 9661.

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Guide to M/code - 7

Interrupts and Clocks revisited.

First an apology. Last month's "Guide to machine code (Number 6) started by completing the interrupts on a real time clock that works with Protect. The only problem with that was the interrupts never got started in the first place! To put things right, it may be prudent to read the following article first and then flip back to last month's. If all that sounds convoluted, it really means that Parts 6 and 7 got transposed. Sorry!

INTERRUPTS

Machine code interrupts are very important to CPC computers. Without them nothing would work. There are many interrupts running constantly, and these handle vital house keeping tasks such as scanning the keyboard every fiftieth of a second to see if a key has been pressed, and updating the internal clock every 1/300th of a second.

You can use interrupts quite easily from Basic using AFTER and EVERY. The AFTER keyword is used as a one shot interrupt. It goes off once at a specified time and isn't reset. EVERY is used for an interrupt which is running all of the time. A clock is a good example.

```
10 REM Clock
20 WINDOW #1,28,40,1,1
30 hrs=0:mins=0:secs=0
40 EVERY 50 gosub 1000: REM every
second
50 GOTO 50: REM put program in here
1000 CLS#1
1010 PRINT#1,hrs": "mins": "secs
1020 secs=secs+1
1030 IF secs=60 THEN secs=0:mins=mins+1
1040 IF mins=60 THEN mins=0:hrs=hrs+1
1050 RETURN
```

It works, I suppose, but it's not very useful. The

whole program could be written better, but a clock program running under Basic would still have it's limitations.

TIME'S UP

Personally, what I want is a clock that will work while I am using my word processor. I use Protect and I'm not bothered about being told that the caps lock is on so I decided to overwrite this part of the display and put a clock there instead. So this month's project (which should have been last month's) will be a real time clock that will work with other programs but in particular Protect.

A HEART ATTACK?

There are several types of interrupt that can be used from machine code and I have chosen a Ticker interrupt to do the job of maintaining a real time clock. The ticker interrupt is perhaps the most flexible. It decrements the number of ticks every fiftieth of a second and "kicks" a routine automatically when the count reaches zero.

To set up the interrupt the programmer first has to reserve an area of memory called a tick block. The tick block, which is 13 bytes long, must be located in the central 32k of RAM ie between &4000 and &BFFF. This allows the block to be accessed when roms are enabled.

The last seven bytes of the tick block is known as an event block. You need to inform the computer where these blocks are by calling first KL INIT EVENT then KL ADD TICKER. The computer uses these blocks as a workspace where it keeps information about the interrupt.

Before calling KL INIT EVENT registers are loaded as follows:-

```
LD,HL the address of the event block
LD B, the event class
LD C, the ROM select address
LD DE, the address of the routine
```

The event class is a bit significant value and is determined as follows....

OLYMPIC JUMP EVENTS

If bit zero is set to one then the event routine is at a near address and if set to zero then the event routine is at a far address. A far address means the routine is in a ROM and the ROM number is to be found in register C. For a near address the contents of C are ignored. A near address in this case means between &4000 to &BFFF or in the lower ROM.

Bits one to four sets the event priority. For synchronous events the higher the number the greater the priority. Our event is asynchronous so

these are set to zero. Bit five is always zero.

If bit six is set then the event is an express event and will be dealt with before anything else. A clock is not that important so this bit is set to zero. If bit seven is set to one then the event is asynchronous. If set to one then it is synchronous. In general the computer deals with asynchronous events whilst the programmer is responsible for looking after synchronous events.

As this will be an asynchronous event at a near address we get the value for the class of &X10000001 or &81.

```
kl_init_event equ &BCEF
kl_add_ticker eqy &BCE9
kl_del_ticker equ &BCEC

org $5F00

.add_ticker
ld hl, eventblock
if b, event_class
ld de, routine
call kl_init_event
ld hl, tickblock
ld de, 50 ;initial count 1 sec
ld bc, 50 ;recharge count 1 sec
call kl_add_ticker ;every 50 gosub routine
ret
.tickblock
ds 6 ;set 6 bytes workarea
.eventblock
ds 7 ;set 7 bytes workarea
.del_ticker ;delete ticker
ld hl, tickblock
call kl-del-ticker
ret
.routine
ld a, "A"
call &bb5a
ret
end
```

CARDIAC ARREST

Before calling KL ADD TICKER, registers are loaded as follows:-

LD HL, the address of the tickblock
LD DE, the initial value of count in 50ths of a second
LD BC, the recharge count in 50ths of a second

The initial value of the count is the initial delay before the event routine is called for the first time. The recharge count is how often the routine is called. In the case of a clock the initial delay and recharge counts are fifty fiftieths, or one second. If the recharge count is set to zero then the routine will be called once, just like Basic does when you use the AFTER keyword.

Every fiftieth of a second the computer examines the kickblock and decrements the count. When the count gets to zero it calls the routine and sets the count back to fifty again. The computer will carry on decrementing the count even if the routine hasn't returned, so no ticks are lost. It will even call the routine for a second time before the first one finishes if the routine is too long. The program in Fig 1. is an example of how to set up an interrupt. If you want to set up your own interrupt driven routine then this is the format to use. Call add_ticker to set the interrupt going, call del_ticker to turn it off.

The routine simply puts the letter A on the screen once every second. A bit boring, but the program is short and simple enough so that you can play about and change a few things just to get the feel of how interrupts work.

That's the end of the subject so far as interrupts are concerned. Now the actual clock program as described on page 38 of the July 1991 issue can be written.

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GAME PLAY

MONTY PYTHON'S FLYING CIRCUS

SUPER CARS

TOYOTA CELICA GT RALLY

VERDICTS

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

MONTY PYTHON'S FLYING CIRCUS

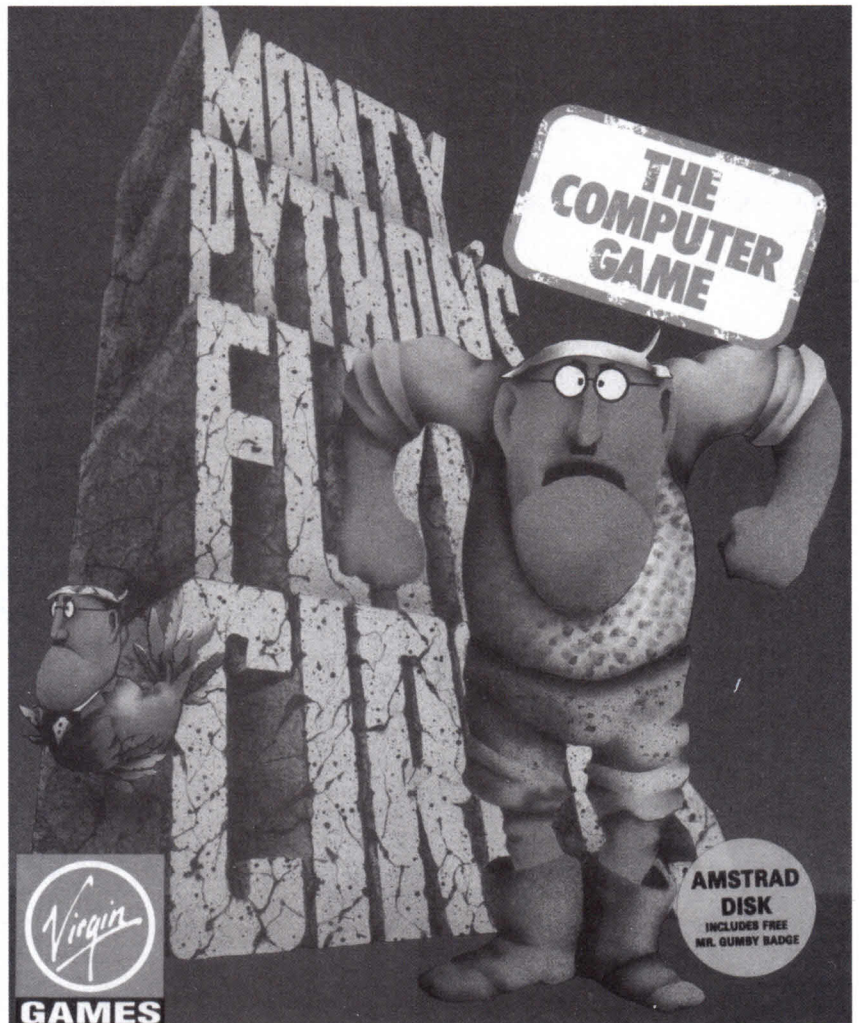
- Published by Virgin Games • Available through The PC Mag
- Suitable for Amstrad 464, 664 and 6128
- Prices: Disk \$42.95, Tape \$32.95

Producing computer games based on movies is a pretty hit or miss affair. Some such as Batman and Ghostbusters 2 were destined to become big hits, while others such as Jaws were destined to sink into oblivion. TV shows have not been a really popular source of computer games, and those that have been produced are either quiz games or adventures.

Undaunted by the failure rate of TV conversions, Virgin Games launched Monty Python's Flying

Circus, a computer game based on a TV series that people either loved or hated. The humour was slightly warped, and the actors and skits were slightly crazy. Virgin have taken a gamble and managed to turn up trumps by developing an arcade-style game quite different from any other you may have seen.

Mr. D.P. Gumby has a bit of a problem. It seems that his brain has exploded, and bits of it are scattered in four different



locations. Ah well, not really much of a problem, because not many people realised that Mr. Gumby actually had a brain, so at first glance it appeared that things were quite normal. But the inside of Mr. Gumby's head is getting cold, probably by the draft blowing through his ears, so he sets off into the great unknown to find something to stuff into his head to block the wind. And what is he looking for? Why, his brain of course. Mr. Gumby starts his quest, and the first thing he has to avoid is a series of heavy weights that drop from the ceiling. Missing these, he steps off the edge of a huge drop, to find himself in a series of pipes where he has become... a fish? Here he must navigate his way through the pipes, following the marks on the wall, and find the end of the system. Along the way he can collect cheese and, for energy, spam. Spam is hidden around the area, so Mr. Gumby must grab it when he sees it. In his travels he must avoid flying feet, dead parrots and Eric the Half a Bee and his brothers.

There are a couple of other characters to be destroyed along the route at the end of which he will discover a piece of his brain and revert to his original form. The only weapons Gumby has to despatch the nasties are fish that he must hurl at the nasties.

Level 2 sees Gumby wandering through another Python-style landscape, attacking exploding cats, employees from the Ministry of Silly Walks and moving mouths. Again, the aim is to collect cheese and find spam, and at the end to find the second part of Mr. Gumby's brain.

Level 3 finds Gumby in an area that nobody expected to see at any time during the TV show, and that's the Spanish Inquisition. (No, not the Spanish Inquisition!)

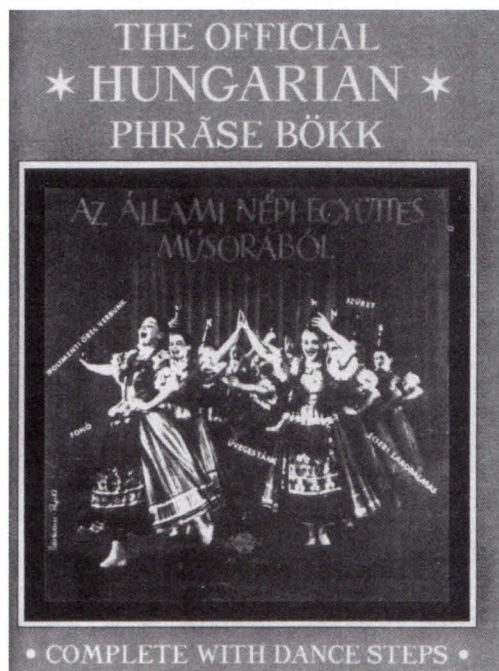
Level 4 sees Mr. Gumby.... well, you'll have to see that one

for yourself I'm afraid.

Monty Python's Flying Circus is naturally an unusual game, rather like the TV show. You'll know this simply from looking at the box, but, if you don't believe that, a look at the instruction manual will convince you. Called "The Official Hungarian Phr se B kk - Complete with Dance Steps", it not only contains the instructions for the game but also an English TV Guide for BBC1, BBC2 and ITV, some photos that appear to be straight out of the show and even some 'naughty bits'. To get into the game, first you have to correctly name some pieces of cheese found in Mr. Wendsleydales Ye Olde Cheese Emporium. To make it easier, these can be found in the manual. If you successfully name the cheese, you are forced to play the game which according to the literature is only the secondary purpose of the program.

Graphically, Monty Python's Flying Circus is very good. The backgrounds are very similar to the cartoon sequences in the TV show, and the nasties you encounter are clear and easy to see. Mr. Gumby looks just like a gumby, complete with the handkerchief, knotted at each corner on his head. Mr. Gumby and the rest of the sprites move quite well, and the screen changing is smoothly done.

Soundwise, the program is also good, with a realistic rendition of the TV show theme (including the raspberry) being played while you wait to start a game. In game sounds are not as good, but certainly functional. Another unusual feature in this game is the scoring system. Instead of starting at 0 and



Python fans will instantly recognise this book as the operating instructions.

getting adding to the score as you go, in this game you start at 99999999 and the score reduces. Thus you have to get the lowest score to have your best scores recognised.

I've been a Monty Python fan since I was quite small. This game captures all the atmosphere that made the TV show famous, or should that be infamous. In all programming aspects Virgin have produced a game that exploits the strong points of the CPC very well. The game is addictive and compelling, and you should be able to enjoy it even if you can't stand the Python style of humour. Yes, a great conversion for the CPC, with loads of colour and atmosphere. A free Mr. Gumby badge is also included which shows the proud hero.

Virgin have gambled and won. Monty Python's Flying Circus should find a place in the software collection of all CPC owners.

VERDICT ■ ■ ■ ■

SUPER CARS

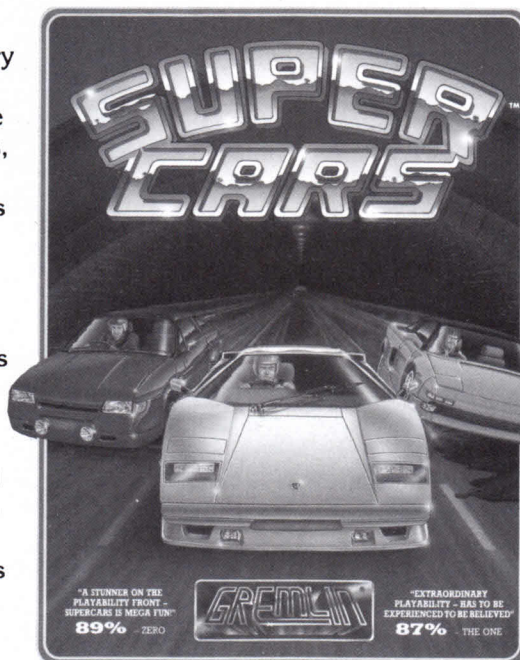
- Published by Gremlin • Distributed by Mindscape International
- Suitable for Amstrad 464, 664 and 6128
- Prices: Disk only \$42.95

Car racing games have been around since the birth of the home computer. One of the most popular arcade-style racing games was Super Sprint. Although this was not a bad game, controlling the car was a little bit difficult. Now Gremlin have launched Super Cars for the CPC, a conversion of a very successful game originally released on 16-bit formats. The question that must be asked is, can the version produced for the humble CPC be as good as its 16-bit cousin? The answer to this is yes.

Super Cars is set in the future, with you as a racing driver. Your aim is to win races on all nine tracks and earn enough money to either keep your current car on the road, or upgrade to a more powerful machine. You start off in a 1.6 litre Taraco Neoroder Turbo, and commence racing in Class 1. Before you begin a race though, you can either check out the specifications of your car, visit a car salesman to see if you can upgrade your wheels, or go to the garage to buy optional extras. Pick the right ones and you will find them very useful and ultimately improve the handling and performance of the car. You can also grab a couple of missiles which may be useful for clearing the track of unwanted cars.

You race against three other opponents on nine different tracks. To progress through the nine tracks you have to finish in the first three places, so a missile or two comes in handy in those tight races. The tracks can be played in any order you like, with

Track 1 being the easiest and Track 9 the hardest. You start each race from the back of the grid, and have to complete five laps. Your opponents can be overtaken or bumped out of the way but be careful; there is oil,



water and mud on the track that have to be avoided.

Super Cars is viewed from overhead, but where this program beats similar ones of this type is that, instead of seeing the whole track which means that the cars are indistinct little blots, all you see in this game is a small section of the track immediately surrounding your car. This means that the cars are bigger and clearer, the game is faster and you don't know what's around the next corner, just as it is on real roads.

Graphically, Super Cars isn't the best game ever produced

because the programmers have opted to use the higher resolution Mode 1 for this program, rather than the more colourful but blockier Mode 0. In-game sonics are good, with a very cheerful tune playing throughout the game. The actual game sounds are limited to the screeching of the tyres as you corner, but with the music playing you don't seem to miss the detailed driving sounds.

Controls could not be simpler; FIRE to accelerate, LEFT and RIGHT to steer left and right, and to break you simply release the FIRE button. To fire a missile at your opponents, all you have to do is push the joystick either forward or back to launch a deadly missile from the front or back of your car. The controls are very responsive and easy to use, and the game is a delight to play.

Gremlin haven't had a hit game on the CPC for a long time. Super Cars was well received as a 16-bit game, and to convert it to the 8-bit format could have been seen by some to be a very ambitious project and perhaps a commercial risk. But the gamble has paid off because the programmers haven't tried to get too much out of the machine, but tailored the program to produce the best result.

Super Cars is a very playable offering and destined to be a hit. The tracks are all different and the obstacles change location every time you play.

Race out to your local Amstrad shop and grab a copy of Super Cars. It's money very well spent.

VERDICT ■ ■ ■ ■

TOYOTA CELICA GT RALLY

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

This is another car racing game from Gremlin, but totally different from Super Cars (see opposite page). There are no missiles, except for those which your spinning wheels may throw out, and no other cars to bump out of the way. Your single opponent is the clock!

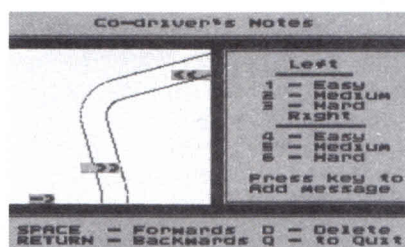
Toyota Celica GT Rally can perhaps be classed as an arcade game as it certainly has that feel, but it would be more accurate to put it into the 'good simulator' pigeon hole. There are a number of reasons for this. In the first place, anyone who is prone to being a lead-foot driver will come to grief straight away. In real life you've got to back off on the gas now and again and the same applies to this simulator. In a real rally environment, you'd get to have a test drive around the course and in this sim you get that opportunity in creating a co-driver.

Actually, the co-driver already exists (although you never get to see him) and his pre-programmed function is to provide messages warning of impending hazards. If you want to survive the track in one piece, it is advisable to study the track and add your own messages in the "Co-driver Preparation" sub-menu.

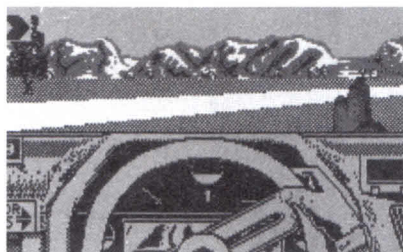
The race against time starts once you have strapped yourself in behind the steering wheel. The view presented shows the dashboard in front of you and the scenery directly in front of the windscreen. It is also advisable to go through the practice option first before attempting the real event. There are 30 courses from which to choose in three different



countries, and to make things easier for the beginner, the sensitivity of the steering can be set to low. The medium and high settings are for the die-hard enthusiasts. The gears can be changed either automatically or



Setting up the Co-driver



View from the driver's seat

manually, and the steering automatically centring or not. You can even drive the entire course in reverse!

The game is played over a number of stages, and the timings accumulated. At the end of each stage your total time and current ranking are displayed. But don't for one minute think that this game is going to be a breeze. The four-colour graphics provide good detail, the sounds are quite adequate, but when it boils down to it, the person behind the wheel is what matters in this game. He or she will soon find out that controlling the throbbing Celica is harder than they think and requires all the skills they can summon to keep it on the right track. It's hard but good fun!

(NB. Disk version will only work on a 6128).

VERDICT ■ ■ ■

Bulls eye!

*Whatever your game,
501, 301 or 101, this
type-in for CPC464, 664
or 6128 users will test
your darts skills.*

```

10 'CHAMPIONSHIP DARTS (v1) Copyright St
eve Anderson
20 '
100 REM START SCREEN
110 REM SET ARRAYS AND HIGH SCORE
120 DIM DX(3)
130 DIM DY(3)
140 HIGH=16:NAM$="ARNOLD"
150 INK 1,24,6:INK 0,0:INK 2,6:INK 3,26
160 BORDER 0
170 PEN 1
180 MODE 1
190 REM DRAW TITLE SCREEN
200 LOCATE 12,1:PRINT"CHAMPIONSHIP DARTS
"
210 LOCATE 12,2:PRINT"-----
"
220 LOCATE 13,6:PRINT"BY STEVE ANDERSON"
230 PLOT 180,200,3
240 DRAWR 80,10:DRAWR 150,0
250 DRAWR 30,-10
260 DRAWR 60,0
270 MOVER -60,0
280 DRAWR -30,-10
290 DRAWR -150,0
300 DRAW 180,200
310 MOVER 66,10:DRAWR 0,-20
320 MOVER 120,0:DRAWR 0,20:MOVER 10,0:DR
AWR 0,-20:MOVER 10,0:DRAWR 0,20
330 FOR F=170 TO 230 STEP 4:PLOT 200,200
,2:DRAW 100,F:NEXT
340 PEN 3:LOCATE 11,23:PRINT"PRESS ENTER
TO PLAY"
350 PEN 0
360 LOCATE 1,16:INPUT STE$

```

```

370 REM MAIN OPTION SCREEN
380 INK 1,26:INK 3,18
390 PEN 1
400 BORDER 13:PAPER 0:CLS
410 MODE 1
420 CLS
430 SYMBOL 255,84,40,16,56,56,56,16,16
440 LOCATE 7,1:PRINT STRING$(3,CHR$(255)
)+"CHAMPIONSHIP DARTS"+STRING$(3,CHR$(25
5))
450 LOCATE 7,2:PRINT"-----
-----"
460 LOCATE 5,6:PRINT"HIGHEST CHECKOUT=";
HIGH;" BY ";MID$(NAM$,1,10)
470 PEN 3
480 LOCATE 1,10:PRINT"Q=UP,A=DOWN,O=LEFT
,P=RIGHT,@=THROW DART"
490 LOCATE 5,12:PRINT"YOU CAN ALSO USE C
URSOR KEYS"
500 LOCATE 5,14:PRINT"OR A JOYSTICK IF Y
OU HAVE ONE"
510 LOCATE 5,16:PRINT"I=INSTRUCTIONS,S=S
AVE OR L=LOAD"
520 LOCATE 1,25:PRINT"
"
530 LOCATE 1,25
540 PEN 2
550 INPUT"501,301,101,I,S,L";S1$
560 IF VAL(S1$)=101 THEN S1=101:GOTO 630
570 IF VAL(S1$)=301 THEN S1=301:GOTO 630
580 IF VAL(S1$)=501 THEN S1=501:GOTO 630
590 IF S1$="I" OR S1$="i" THEN 3020
600 IF S1$="L" OR S1$="l" THEN 3750
610 IF S1$="S" OR S1$="s" THEN 3860
620 GOTO 520
630 S2=S1
640 REM COMPUTER OR HUMAN OPPONENT OPTIO
N
650 INK 1,26
660 PEN 3
670 CLS:LOCATE 1,10:PRINT"DO YOU WANT TO
PLAY A COMPUTER PLAYER":LOCATE 1,11:PRI
NT"OR DO YOU HAVE A FRIEND TO PLAY"
680 LOCATE 1,25:PRINT"
"
690 LOCATE 1,25:INPUT"HUMAN PLAYER Y/N";
CO$
700 IF CO$="y" OR CO$="Y" THEN CO=0:GOTO
900
710 IF CO$="n" OR CO$="N" THEN CO=1:GOTO
740
720 GOTO 680
730 REM WHICH LEVEL OF SKILL YOUR OPPONE
NT WILL HAVE
740 CLS
750 PEN 1:LOCATE 5,10:PRINT"INPUT SKILL
LEVEL"
760 LOCATE 5,12:INPUT"SKILL LEVEL(1-4)";
DIF
770 IF DIF<1 OR DIF>4 THEN LOCATE 5,11:P
RINT"

```

```

";GOTO 760
780 IF S1=301 AND DIF=1 THEN RESTORE 365
0
790 IF S1=301 AND DIF=2 THEN RESTORE 366
0
800 IF S1=301 AND DIF=3 THEN RESTORE 367
0
810 IF S1=301 AND DIF=4 THEN RESTORE 368
0
820 IF S1=501 AND DIF=1 THEN RESTORE 370
0
830 IF S1=501 AND DIF=2 THEN RESTORE 371
0
840 IF S1=501 AND DIF=3 THEN RESTORE 372
0
850 IF S1=501 AND DIF=4 THEN RESTORE 373
0
860 IF DIF=1 THEN SYMBOL 244,28,52,28,8,
152,92,56,24:SYMBOL 245,24,26,8,8,8,8,
24:PRO$="CERI"
870 IF DIF=2 THEN SYMBOL 244,28,52,28,8,
12,220,44,12:SYMBOL 245,12,22,43,53,63,2
0,20,60:PRO$="JOCK"
880 IF DIF=3 THEN SYMBOL 244,14,26,14,4,
204,52,4,4:SYMBOL 245,4,15,15,10,10,10,1
1,25:PRO$="MIKE"
890 IF DIF=4 THEN SYMBOL 244,28,52,28,8,
28,188,92,28:SYMBOL 245,28,28,8,8,15,9,8
,24:PRO$="ERIC"
900 PEN 1
910 REM USER GRAPHICS
920 SYMBOL 240,56,56,56,56,56,56,16,16
930 SYMBOL 241,0,0,240,255,240,0,0,0
940 SYMBOL 242,192,192,224,224,224,224,2
24,224
950 SYMBOL 243,192,192,192,192,192,192,1
92,192
960 REM DRAW BOARD
970 MODE 1
980 ORIGIN 240,192
990 DEG
1000 PLOT 165,0,1
1010 FOR F=1 TO 370 STEP 12
1020 DRAW 0+165*COS(F),0+165*SIN(F)
1030 SOUND 1,f,2,4
1040 NEXT
1050 PLOT 175,0
1060 FOR F=1 TO 370 STEP 12
1070 DRAW 0+175*COS(F),0+175*SIN(F)
1080 SOUND 1,f+50,2,4
1090 NEXT
1100 PLOT 110,0
1110 FOR F=1 TO 370 STEP 16
1120 DRAW 0+110*COS(F),0+110*SIN(F)
1130 SOUND 1,f+100,2,4
1140 NEXT
1150 PLOT 100,0
1160 FOR F=1 TO 370 STEP 16
1170 DRAW 0+100*COS(F),0+100*SIN(F)
1180 SOUND 1,f+150,2,4
1190 NEXT

```



```

1200 FOR f=9 TO 180 STEP 18
1210 MOVE 0+175*-COS(f),0+175*-SIN(f)
1220 DRAW 0+175*COS(f),0+175*SIN(f)
1230 SOUND 1,f+200,2,4
1240 NEXT
1250 REM DRAW BULL AND OUTER BULL
1260 PLOT 20,0
1270 FOR f=1 TO 370 STEP 10
1280 PLOT 0,0,3
1290 DRAW 0+20*COS(F),0+20*SIN(F)
1300 SOUND 1,f+250,2,4
1310 NEXT
1320 PLOT 7,0
1330 FOR f=1 TO 360 STEP 10
1340 PLOT 0,0,2
1350 DRAW 0+7*COS(F),0+7*SIN(F)
1360 SOUND 1,f+300,2,4
1370 NEXT
1380 PLOT 20,0,0
1390 FOR f=1 TO 370 STEP 20
1400 DRAW 0+20*COS(F),0+20*SIN(F)
1410 NEXT
1420 REM PRINT NUMBERS
1430 TAG
1440 PLOT -10,192,1:PRINT "20";
1450 PLOT 45,190,1:PRINT "1";
1460 PLOT 100,164,1:PRINT "18";
1470 PLOT 155,126,1:PRINT "4";
1480 PLOT 180,80,1:PRINT "13";
1490 PLOT 190,8,1:PRINT "6";
1500 PLOT 180,-46,1:PRINT "10";
1510 PLOT 155,-110,1:PRINT "15";
1520 PLOT 110,-150,1:PRINT "2";
1530 PLOT 50,-176,1:PRINT "17";
1540 PLOT -4,-180,1:PRINT "3";
1550 PLOT -84,-180,1:PRINT "19";
1560 PLOT -120,-150,1:PRINT "7";
1570 PLOT -180,-100,1:PRINT "16";
1580 PLOT -200,-50,1:PRINT "8";
1590 PLOT -216,0,1:PRINT "11";
1600 PLOT -216,60,1:PRINT "14";
1610 PLOT -176,120,1:PRINT "9";
1620 PLOT -150,160,1:PRINT "12";
1630 PLOT -60,190,1:PRINT "5";
1640 MOVE 217,200:DRAWR 0,-400
1650 MOVE 217,0:DRAWR 200,0
1660 REM VARIABLES
1670 X=1:Y=1
1680 S=0:SD=0
1690 FLAG=1
1700 DX(1)=0
1710 DX(2)=0
1720 DX(3)=0
1730 DY(1)=0
1740 DY(2)=0
1750 DY(3)=0
1760 REM PRINTS PLAYER FOR COMPUTER OPTI
ON
1770 COX=270
1780 IF CO=1 THEN PLOT 218,-100,3:PRINT
CHR$(242);:PLOT 218,-116:PRINT CHR$(243)

```

```

;
1790 IF CO=1 THEN PLOT COX,-100,1:PRINT
CHR$(244);" ";:PLOT COX,-116:PRINT CHR$(
245);" ";
1800 IF CO=1 THEN MOVE 270,-1:PRINT PRO$
;
1810 PLOT 220,200,1:PRINT"PLAYER=";1;
1820 MOVE 262,180:PRINT 0;
1830 GOTO 1920
1840 REM GETS COMPUTER PLAYERS SCORE
1850 PLOT 220,160,1:PRINT S1;S2;
1860 IF CO=1 THEN GOSUB 2830
1870 IF CO=1 AND S2=50 THEN S2=S2-50:GOT
O 2690
1880 IF CO=1 AND S2=101 THEN S2=S2-51
1890 IF CO=1 AND S2>101 THEN READ DSC:S2
=S2-DSC
1900 IF CO=1 THEN FLAG=1
1910 REM PRINT PLAYERS SCORE
1920 PLOT 220,160,1:PRINT S1;S2;
1930 PLOT 217,142,1:DRAWR 150,0
1940 PLOT 220,140:PRINT" P.1";" P.2";
1950 REM MAIN LOOP
1960 FOR F=1 TO 3
1970 PLOT X-16,210,1:PRINT " "+CHR$(240)
;
1980 PLOT -240,Y,1:PRINT CHR$(241);
1990 IF CO=1 AND FLAG=2 THEN 1850
2000 X=X-(INKEY(27)=0 OR INKEY(75)=0 OR
INKEY(1)=0)*4+(INKEY(34)=0 OR INKEY(74)=
0 OR INKEY(8)=0)*4
2010 Y=Y-(INKEY(67)=0 OR INKEY(72)=0 OR
INKEY(0)=0)*4+(INKEY(69)=0 OR INKEY(73)=
0 OR INKEY(2)=0)*4
2020 IF Y>-1 AND Y<1 THEN Y=1
2030 IF Y>190 THEN MOVE -240,Y:PRINT " ";
:Y=190
2040 IF Y<-180 THEN MOVE -240,Y:PRINT " "
;:Y=-180
2050 IF X<-200 THEN X=-200
2060 IF X>200 THEN X=200
2070 IF INKEY(26)=0 OR INKEY(76)=0 OR IN
KEY(9)=0 THEN SOUND 1,200,2,7,0,0,5:GOSU
B 2140:GOTO 2090
2080 GOTO 1970
2090 PLOT 220,160,1:PRINT S1;S2;
2100 IF F=3 THEN 1960
2110 NEXT
2120 REM CHANGE X,Y TO POLAR V,Z
2130 X=X+4:Y=Y+4
2140 Z=X*X+Y*Y
2150 Z=SQR(Z)
2160 DX(F)=X;DY(F)=Y
2170 PLOT DX(F)-2,DY(F):DRAWR 4,0
2180 PLOT DX(F),DY(F)+2:DRAWR 0,-4
2190 RAD
2200 MOVE 0,0
2210 IF Y=0 THEN Y=1
2220 C=DX(F)/DY(F)
2230 IF DX(F)>0 AND DY(F)>0 THEN V=(PI
+ATN(-C)):GOTO 2300

```

```

2240 IF DX(F)<0 AND DY(F)>0 THEN V=(PI+
ATN(-C)):GOTO 2300
2250 IF DY(F)<0 THEN DY(F)=+DY(F):C=(DX(
F))/DY(F)
2260 V=(PI+ATN(-C))
2270 V=(PI+ATN(-C))
2280 GOTO 2430
2290 REM CHECK TOP OF BOARD
2300 IF V>9*PI/20 AND V<11*PI/20 THEN
SD=6
2310 IF V>11*PI/20 AND V<13*PI/20 THEN
SD=13
2320 IF V>13*PI/20 AND V<15*PI/20 THEN
SD=4
2330 IF V>15*PI/20 AND V<17*PI/20 THEN
SD=18
2340 IF V>17*PI/20 AND V<19*PI/20 THEN
SD=1
2350 IF V>19*PI/20 AND V<21*PI/20 THEN
SD=20
2360 IF V>21*PI/20 AND V<23*PI/20 THEN
SD=5
2370 IF V>23*PI/20 AND V<25*PI/20 THEN
SD=12
2380 IF V>25*PI/20 AND V<27*PI/20 THEN
SD=9
2390 IF V>27*PI/20 AND V<29*PI/20 THEN
SD=14
2400 IF V>29*PI/20 AND V<31*PI/20 THEN
SD=11
2410 GOTO 2540
2420 REM CHECK LOWER HALF OF BOARD,BULL,
OUTER BULL,DOUBLES,TREBLES e.t.c
2430 IF V>9*PI/20 AND V<11*PI/20 THEN
SD=11
2440 IF V>11*PI/20 AND V<13*PI/20 THEN
SD=8
2450 IF V>13*PI/20 AND V<15*PI/20 THEN
SD=16
2460 IF V>15*PI/20 AND V<17*PI/20 THEN
SD=7
2470 IF V>17*PI/20 AND V<19*PI/20 THEN
SD=19
2480 IF V>19*PI/20 AND V<21*PI/20 THEN
SD=3
2490 IF V>21*PI/20 AND V<23*PI/20 THEN
SD=17
2500 IF V>23*PI/20 AND V<25*PI/20 THEN
SD=2
2510 IF V>25*PI/20 AND V<27*PI/20 THEN
SD=15
2520 IF V>27*PI/20 AND V<29*PI/20 THEN
SD=10
2530 IF V>29*PI/20 AND V<31*PI/20 THEN
SD=6
2540 IF Z<20 THEN SD=25
2550 IF Z<7 THEN SD=50:ENT 1,10,-10,20:S
OUND 2,400,40,4,0,1:IF S1-(S+SD)=0 OR S2
-(S+SD)=0 THEN 2690
2560 IF Z>175 THEN SD=0
2570 IF Z<110 AND Z>100 THEN SD=SD*3:IF

```

CPC TYPE-IN

```

S+SD=180 THEN FOR U=500 TO 100 STEP -5:S
OUND 2,U,2,4:INK 1,(INT(RND*14)+1):NEXT:
INK 1,26
2580 IF Z<175 AND Z>165 THEN SD=SD*2:IF
S1-(S+SD)=0 OR S2-(S+SD)=0 THEN 2690
2590 MOVE 262,180:PRINT S+SD;" ";
2600 IF S+SD+1=S1 AND FLAG=1 THEN S=0:F
=3:FLAG=2:FOR U=1 TO 3:PLOT DX(U)-2,DY(U
),0:DRAWR 4,0:PLOT DX(U),DY(U)+2:DRAWR 0
,-4:PLOT DX(U),DY(U),1:NEXT:GOTO 2640
2610 IF S+SD+1=S2 AND FLAG=2 THEN S=0:F
=3:FLAG=1:FOR U=1 TO 3:PLOT DX(U)-2,DY(
U),0:DRAWR 4,0:PLOT DX(U),DY(U)+2:DRAWR
0,-4:PLOT DX(U),DY(U),1:NEXT:GOTO 2640
2620 IF FLAG=1 THEN S=S+SD:IF F=3 AND FL
AG=1 THEN FLAG=2:S1=S1-S:FOR U=1 TO 3:PL
OT DX(U)-2,DY(U),0:DRAWR 4,0:PLOT DX(U),
DY(U)+2:DRAWR 0,-4:PLOT DX(U),DY(U),1:NE
XT:S=0:GOTO 2640
2630 IF FLAG=2 THEN S=S+SD:IF F=3 AND FL
AG=2 THEN FLAG=1:S2=S2-S:FOR U=1 TO 3:PL
OT DX(U)-2,DY(U),0:DRAWR 4,0:PLOT DX(U),
DY(U)+2:DRAWR 0,-4:PLOT DX(U),DY(U),1:NE
XT:S=0
2640 MOVE 220,200:PRINT"PLAYER=";FLAG;
2650 MOVE X,210:PRINT " ";
2660 MOVE -240,Y:PRINT " ";
2670 X=X+20:Y=Y+20
2680 RETURN
2690 REM END OF GAME.PRINT WHO WON
2700 CLG:TAGOFF
2710 PEN 3
2720 LOCATE 5,5:PRINT"RESULT"
2730 LOCATE 5,6:PRINT"-----"
2740 IF FLAG=1 THEN LOCATE 5,10:PRINT"PL
AYER 1 WIN"
2750 IF FLAG=2 THEN LOCATE 5,10:PRINT"PL
AYER 2 WIN"
2760 LOCATE 5,20:PRINT"PRESS ENTER TO CO
NTINUE"
2770 ENT 3,20,-5,2:FOR F=400 TO 300 STEP
-5:SOUND 1,F,10,5,0,3:NEXT
2780 PEN 0:LOCATE 1,25:INPUT PHEN$
2790 REM SORT OUT HIGHEST SCORE
2800 IF S+SD>HIGH AND CO=0 AND FLAG=1 OR
S+SD>HIGH AND CO=0 AND FLAG=2 OR CO=1 A
ND S+SD>HIGH AND FLAG=1 THEN LOCATE 5,15
:PEN 1:PRINT"NEW HIGHEST CHECKOUT=";S+SD
:HIGH=S+SD:PEN 1:LOCATE 1,25:INPUT"ENTER
YOUR NAME";NAM$
2810 GOTO 380
2820 REM MAKES COMPUTER PLAYER THROW
2830 FOR F=1 TO 3:DART=270:WHILE DART>22
6
2840 PLOT DART,-108,1
2850 PLOT DART+2,-108,0
2860 DART=DART-2
2870 WEND
2880 SOUND 1,200,2,7,0,0,5
2890 NEXT
2900 PLOT DART+2,-108,0

```

```

2910 WHILE (COX-16)>226
2920 PLOT COX-16,-100,1:PRINT "+CHR$(24
4)+ " ";:MOVE COX-16,-116:PRINT "+CHR$(2
45)+ " ";
2930 COX=COX-2
2940 WEND
2950 SOUND 1,200,4
2960 WHILE COX<270
2970 PLOT COX-16,-100,1:PRINT "+CHR$(24
4)+ " ";:MOVE COX-16,-116:PRINT "+CHR$(2
45)+ " ";
2980 COX=COX+2
2990 WEND
3000 SOUND 1,200,4
3010 RETURN
3020 REM INSTRUCTIONS
3030 PEN 1
3040 CLS
3050 ORIGIN 240,192
3060 DEG
3070 PLOT 165,0,1
3080 FOR f=1 TO 36 STEP 6
3090 DRAW 0+165*COS(F),0+165*SIN(F)
3100 NEXT
3110 PLOT 175,0
3120 FOR f=1 TO 36 STEP 6
3130 DRAW 0+175*COS(F),0+175*SIN(F)
3140 NEXT
3150 PLOT 110,0
3160 FOR f=1 TO 36 STEP 6
3170 DRAW 0+110*COS(F),0+110*SIN(F)
3180 NEXT
3190 PLOT 100,0
3200 FOR f=1 TO 36 STEP 6
3210 DRAW 0+100*COS(F),0+100*SIN(F)
3220 NEXT
3230 FOR f=0 TO 36 STEP 15
3240 MOVE 0,0
3250 DRAW 0+175*COS(f),0+175*SIN(f)
3260 NEXT
3270 PLOT 20,0
3280 FOR f=1 TO 360 STEP 6
3290 PLOT 0,0,3
3300 DRAW 0+20*COS(F),0+20*SIN(F)
3310 NEXT
3320 PLOT 7,0,2
3330 FOR f=1 TO 360 STEP 10
3340 PLOT 0,0,2
3350 DRAW 0+7*COS(F),0+7*SIN(F)
3360 NEXT
3370 TAG
3380 PLOT -100,0,1
3390 PRINT"50";:DRAW 0,0
3400 PLOT -100,-32,1
3410 PRINT"25";:DRAW 15,0
3420 MOVE 32,-50
3430 PRINT"SINGLE";
3440 DRAW 140,0
3450 MOVE 0,100
3460 PRINT"TREBLE";:DRAW 96,36
3470 MOVE 195,0

```

```

3480 PRINT"DOUBLE";:MOVE 195,0
3490 DRAW 168,4
3500 TAGOFF
3510 LOCATE 1,20
3520 PRINT"THIS IS A SIMULATION OF THE G
AME DARTS."
3530 PRINT"ALL THE USUAL RULES APPLY."
3540 PRINT"TO AIM THE DART,MOVE THE TOP
POINTER"
3550 PRINT"AND THE SIDE POINTER WITH THE
3560 PRINT"KEYS SHOWN ON THE TITLE SCREE
N SO THAT"
3570 PRINT"BOTH POINTERS ARE AIMING AT Y
OUR TARGET"
3580 PRINT"NOW PRESS THE THROW KEY.THE D
ART WILL
3590 PRINT"STICK IN WHERE IT WAS AIMED."
3600 PRINT"YOU MAY FINISH ON BULL OR DOU
BLE."
3610 PRINT"PRESS ANY KEY TO CONTINUE"
3620 IF INKEY$="" THEN 3620
3630 GOTO 380
3640 REM DATA FOR 301 GAME
3650 DATA 41,60,60,26,64
3660 DATA 60,99,41
3670 DATA 140,60
3680 DATA 180,71
3690 REM DATA FOR 501 GAME
3700 DATA 60,60,60,81,45,24,60,45,25
3710 DATA 100,60,60,80,100
3720 DATA 100,140,60,151
3730 DATA 180,180,91
3740 REM LOAD HIGHEST OPTION
3750 CLS
3760 LOCATE 7,5:PEN 1:PRINT"PLACE CASSET
TE IN RECORDER":LOCATE 7,7:PRINT"PRESS P
LAY THEN PRESS SPACE"
3770 WHILE INKEY(47)<>0:WEND
3780 LOCATE 10,10:PEN 1:PRINT"LOADING HI
GH SCORE"
3790 MEMORY 30999:LOAD"!dartdata",31000
3800 HIGH=PEEK(31000)
3810 LOCATE 10,16:PRINT"SCORE LOADED"
3820 NAM$="NEW HIGH"
3830 FOR F=1 TO 2000:NEXT
3840 GOTO 410
3850 REM ROUTINE FOR SAVE OPTION.(SCORE
IS SAVED IN ADDR(31000))
3860 CLS
3870 LOCATE 1,5:PEN 1:PRINT"PLACE BLANK
CASSETTE IN RECORDER":LOCATE 5,7:PRINT"P
RESS RECORD AND PLAY THEN PRESS SPACE"
3880 WHILE INKEY(47)<>0:WEND
3890 LOCATE 10,10:PEN 1:PRINT"SAVING HIG
H SCORE"
3900 POKE 31000,HIGH
3910 SAVE"!dartdata",B,31000,1
3920 LOCATE 10,16:PEN 1:PRINT"HIGH SCORE
SAVED"
3930 FOR F=1 TO 2000:NEXT
3940 GOTO 410

```

Ice Warrior

At last - a new adventure for 6128 owners - and it's Australian!

A new adventure game with a difference has just been released in Australia. The game has been developed in Australia yet uses many features other adventure games from overseas employ. Ice Wizard has been written solely for the CPC6128 computer and comes on disk only due to its length. It is an all graphic adventure, with each location calling up a picture. A choice is provided though as to whether you want to play the game using the illustrations or just play it as an all text adventure.

The graphics used in the game have been produced from an arts package specifically designed to produce pictures for CPC adventure games. This graphics development software has also been written in Australia.

The object of the game itself is to try to save the world from freezing up thereby exterminating all life. Only the Ice Wizard can reverse the process but he first requires various items that have been hidden in certain parts of the Earth. You have been assigned to locate these items and take them to the Wizard's castle that lies somewhere in the Ice Kingdom. The quest begins in one of the last remaining warm regions of the Earth. You have to find your own way to the Ice Kingdom locating the necessary items along the way.

Fortunately there are no nasties along the way such as monsters or ravenous wolves, and unfortunately no people to help you. You are entirely

on your own and need to use all your experience as an adventurer in order to achieve your objective. The game in fact is not an easy one to play and therefore not suitable for beginners. Only seasoned adventurers who really want a challenge should attempt to solve it.

There are some useful features in the game. One is Ramsave which when evoked immediately saves the game position into the computer's own memory (not a permanent save). This does away with having to save the game position onto disk each time a weary adventurer plays it safe before executing a particular hazardous action. Once the command 'Ramsave' has been used you have the option to go back to that position by evoking 'Ramload'. It must be remembered though that Ramsave and Ramload is not the same as Save and Load. The latter two would be used to save and restore the game position to and from disk before switching off the computer. Ramsave and Ramload facilities are deleted once the computer is switched off.

Other useful commands are 'Get All' and 'Drop All' which allows the player to either pick up or dispense of a number of objects without specifying each one by name. The game also understands full sentence input and string commands which is very useful when you wish to execute a number of actions in one command line. For example, you can type in 'E and E and N and Get Medallion and Examine it, etc.' You will notice the use of the word 'it' which is allowed once an object has been specified (as in this case when we said 'Get Medallion'). Another time saving feature is evident when using the string command to move through a number of locations. Whilst moving to the location specified all in between locations give text descriptions only until you reach the final location desired and once there the appropriate picture is then loaded onto the screen.

Overall, the author of Ice Wizard (Barrie Eaton) has produced a good quality game that can be ranked at a similar standard to that of a Level 9 adventure. As an all Australian game we recommend our adventure public to support it and the author. Ice Wizard can only be obtained through this magazine and, as a bonus on the reverse side of the disk, there is another exciting text only adventure by the same author and carries all the features as Ice Wizard such as Ramsave and Ramload. The game is called 'Secret of the Dark Manor' and again is not a game for the rank amateur as a certain amount of ingenuity is needed to solve it.

To order, write to Strategy Publications, 1/641 High Street Road, Mt. Waverley, Vic 3149 enclosing a cheque, money order or Bankcard authorisation for \$29.95 plus \$3.50 postage, or ring (03) 803 9661.

Transfers from PCW to PC

Mike Turner describes how easy it is to move LocoScript PCW files intact (and others) to a PC environment

Swapping from one computer system to another is quite often a traumatic time. Apart from learning about the new equipment and associated software, there also comes the sometimes mind bending task of preserving data from the old machine. This is made particularly difficult when the two computers concerned use differing formats and sizes of floppy disks. Do you have to re-enter it all from scratch on the new machine? The answer is no!

The good people at Locomotive Software were mindful of all this when they introduced the PC version of their venerable LocoScript word processing package. LocoScript was originally designed for the Amstrad PCW range of computers with their "non-standard" 3" micro floppy disk drives. Unfortunately the transfer of data between the PCW and a PC is frustrated by this incompatibility of disk size, and so an easier method had to be found. Enter LocoLink.

THE PACKAGE

The LocoLink package basically consists of four items. First, there is a program called LLPC.EXE which

is supplied on disk one of the LocoScript PC package; (but available separately if required). Next there is a program called LLPCW.COM supplied on an Amstrad 3" disk for use in the PCW machine. Third is a special connecting cable - more details on that later. And last but not least, there is a comprehensive set of instructions.

According to the biblical saying, that the first shall be last and the last shall be first, let's look at the documentation side of things first.

DOCUMENTATION

This consists of a small booklet containing very concise yet easy to understand instructions on all aspects of using LocoLink. It is pure Locomotive in its layout and content. Once again, the technical writing staff at Locomotive have earned my respect for a job well done. One small problem may surface for owners of LocoScript PC. Instructions for the use of LocoLink are already included in the LocoScript PC documentation. However, the new brochure supersedes these older instructions. So heed the warnings and read the

appropriate documentation.

THE CONNECTING CABLE

The supplied connecting cable is set up to plug directly into the expansion slot of the PCW on one end and into the parallel port of the PC on the other end. Whilst the connection is simple enough to follow, I did encounter a few problems getting the data to transfer at first. This was caused by dirty edge connectors on the PCW's expansion board. Simply going over these with a good quality eraser and then making sure that the cable was securely positioned, was enough to ensure that the connections were good and fixed the problem.

Another point to note is the need to have power turned off on the PCW whilst connecting or disconnecting the transfer cable. Failure to do so may result in permanent damage to the PCW. The accompanying documentation will again assist you to do the job properly.

TRANSFER SOFTWARE

As far as the software goes, LLPCW.COM and LLPC.EXE work identically on their respective machines. It is simply a matter of typing in one command on each machine; pressing the return or enter keys on each machine in fairly quick succession and away it goes. Files may be transferred individually or in groups or in fact a whole disk full at a time. I would recommend that you create a spare directory on the PC's hard disk called COPY, DUMP or something similar. Then make that the target directory for the file transfer process. In the case of transferring a whole disk full of files, LocoLink will automatically create appropriate subdirectories of the C:\DUMP into which it will store files from each group or user area on the source disk.

NOT JUST LOCOSCRIPT FILES

You are not limited to LocoScript files in the transfer process. Any file can be transferred from the PCW to the PC although obviously program files won't execute on the PC due to being designed for a totally different processor. I quite successfully

transferred data files from several CPM applications to their equivalent MS-DOS equivalents as well as LocoScript documents. One slight caution is that although a file may transfer correctly, it still may need to undergo some form of conversion process at the other end before it can be used by the MS-DOS version of a particular application. This is not the fault of LocoLink, but rather it is a function of the differences between versions of the same package designed for different machines and operating systems. The checking routines in the transfer software are extensive and you may rest assured that if LocoLink Reports that a file has been transferred it has!

SUMMARY

Overall, I was quite impressed with this package. If you are contemplating using LocoScript PC and already have a swag of LocoScript documents on your

PCW, then this "optional extra" is really required buying in my book, even if you decide to use a different word processing package, LocoLink can still be quite useful. The only problem you will have involves making ASCII files of all your documents on the PCW prior to the transfer. These ASCII files may then be re-formatted by the word processor of your choice on the new machine.

I guess a lot will depend on whether or not you really need to transfer files in the first place. If you do, then the volume and importance of these files will determine whether or not the expense of purchasing LocoLink is justified. If you already own modems and suitable communications software, you may decide to go that way to transfer your data. I certainly wish LocoLink had been around when I made the transition from PCW to PC some twelve months ago now. My files went through a very convoluted

process involving the use of an Amstrad CPC computer and a program called PC Alien, which allows certain IBM drives to emulate the drives of other machines such as the CPC. LocoLink is by far quicker and easier.

This is probably one of the shortest reviews I have ever written, simply because everything involved in the package worked perfectly. I could find no fault in either hardware, software or the accompanying documentation. If you are in the position of needing a good easy way to get data from a PCW to a PC, then this package is certainly worth a look. Well done Locomotive Software 10 out of 10.

Locolink is available through Strategy Publications for \$79.95 plus postage. Call (03) 803 9661 or send order to 641 High Street Road, Mount Waverley, Vic 3149.

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AMSTRAD PCW

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LocoSpell Dictionary

I have noticed recently that LocoSpell seems to be doing some rather odd things when I check a document. For instance, when I typed "th" for "the", it suggested "thc" as a replacement.

I have checked my user dictionary, and this peculiar word hasn't accidentally found its way into it. Besides, it does it whichever data disc I happen to be using, in whichever group. Could it be the large dictionary itself? Is there any way of inspecting the large dictionary to find out? Or might my dictionary/LocoFont disk have become corrupted in some way?

Your dictionary has not become corrupted. The word LocoSpell has suggested is indeed in the large dictionary. The LocoSpell dictionaries are based on the Longman dictionary with some added words such as "LocoScript" and "LocoSpell". The word "thc" is the abbreviation for tetrahydrocannabinol, the main active ingredient in marijuana.

Using a 24-pin Printer

I recently bought a 24-pin Printer driver disc to use with my 24-pin printer, but so far have been unable to print anything sensible. All I get is a series of exclamation marks followed by other spurious characters. Have I set up my disc incorrectly or is it a problem with the printer itself.

We suspect that your printer is not set up properly. The 24-pin printer files take advantage of a feature of 24 pin printers that allows 'downloading' of information into the printer's buffer. It's

this feature that lets you produce all LocoScript's characters, pitches and print styles on the printer.

In order to achieve this, LocoScript needs to use as much of the printer's buffer as possible to store the characters and commands. To release this space, you have to reduce the size of the buffer that the printer uses for its own characters. This is done by setting the buffer size to its minimum.

You should check the settings on the printer and, if necessary, change them - the manual for

your printer explains how to do this.

If the printer's settings are correct, then the problem is most likely to be caused by switching on the printer after you've loaded the software. The result is that the printer is not in a state that LocoScript can work with and so it cannot respond to the commands that LocoScript sends.

The solution to this problem is to simply reset the printer by selecting 'Reset Printer' on the f1 Actions menu in the Printer Control State.

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

Toyshop: 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 + post and all are available by mail order from:

Strategy Publications
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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, Full Screen text editor, Easy lister, 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. • *Sort* any 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.

PCW 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)

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CPC WAR/MILITARY/SIMS

F16 Combat Pilot	34.95 .. 44.95
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Space Harrier 2	29.95 .. 39.95
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PD#602 - Relational Database	15.00
PD#603 - Communications	15.00
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PD#605 - Fixed Assets log	15.00
PD#606 - Complete Utilities	15.00
PD#607 - Text Processing Utilities	15.00
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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" Amssoft	6.95
Disks: 3" Maxell	7.25
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
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Individual Monthly Type-ins on tape - each .. 5.00	5.00
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Joystick Splitter (allows use of 2 joysticks)	17.50

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
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 (Please specify your computer when ordering)

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Memory expansion - 64k for 464/664	179.00
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PCW GAMES

Bridge Player 2150	69.95
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Brainstorm	79.00
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Prospell	79.95
Protect	149.00
Protect File	59.95
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Startrack	54.95
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PD#802 - Relational Database	15.00
PD#803 - Communications	15.00
PD#804 - Video Clerk	15.00
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PD#806 - Complete Utilities	15.00
PD#807 - Text Processing Utilities	15.00
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PD#812 - Forth, Stoic & 'C' Interpreter	15.00
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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

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
Whole Memory Guide	30.95

PCW BOOKS

LocoMail User Guide	54.95
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Dave Green, Port Pirie
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TIME-LIFE "Understanding Computers". 21 Volumes, current edition, mint condition. Original cost more than \$500. For sale at \$150. Collect, or freight can be arranged at your cost. Ring (054) 96 3246

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

Spare Parts. We have a number of defunct Amstrad 464s and 6128s (screens and keyboards) for disposal to anyone who may wish to use for spares or hardware development. Ring (03) 803 9211 for details.

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

Amstrad PC1286 (12MHz AT) with 1 meg. RAM, 3.5" (1.44 mbs) floppy drive and mouse. Base unit with keyboard only (no screen). BRAND NEW - Has never been used. Comes with mounting kit for hard disk, manuals, DOS and GW-Basic. \$1300. Collect or freight at your cost. Ring (03) 803 9211

USER GROUPS

Sydney Amstrad User Club for CPC only, meets monthly in inner suburbs. For details phone (02) 560 9487 or (02) 661 7573. 6-9pm.

Attention PCW Users. PCW Australia Group meet monthly at the Burwood RSL. 12 month membership \$25.00 includes monthly newsletter. Contact David York (02) 604 7171. (Previous listing these pages outdated - please try again).

NOTE

Classifieds are reserved for readers' use only. Commercial companies or traders are excluded, as is the sale of any purchased software (due to pirates).

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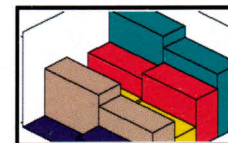
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