

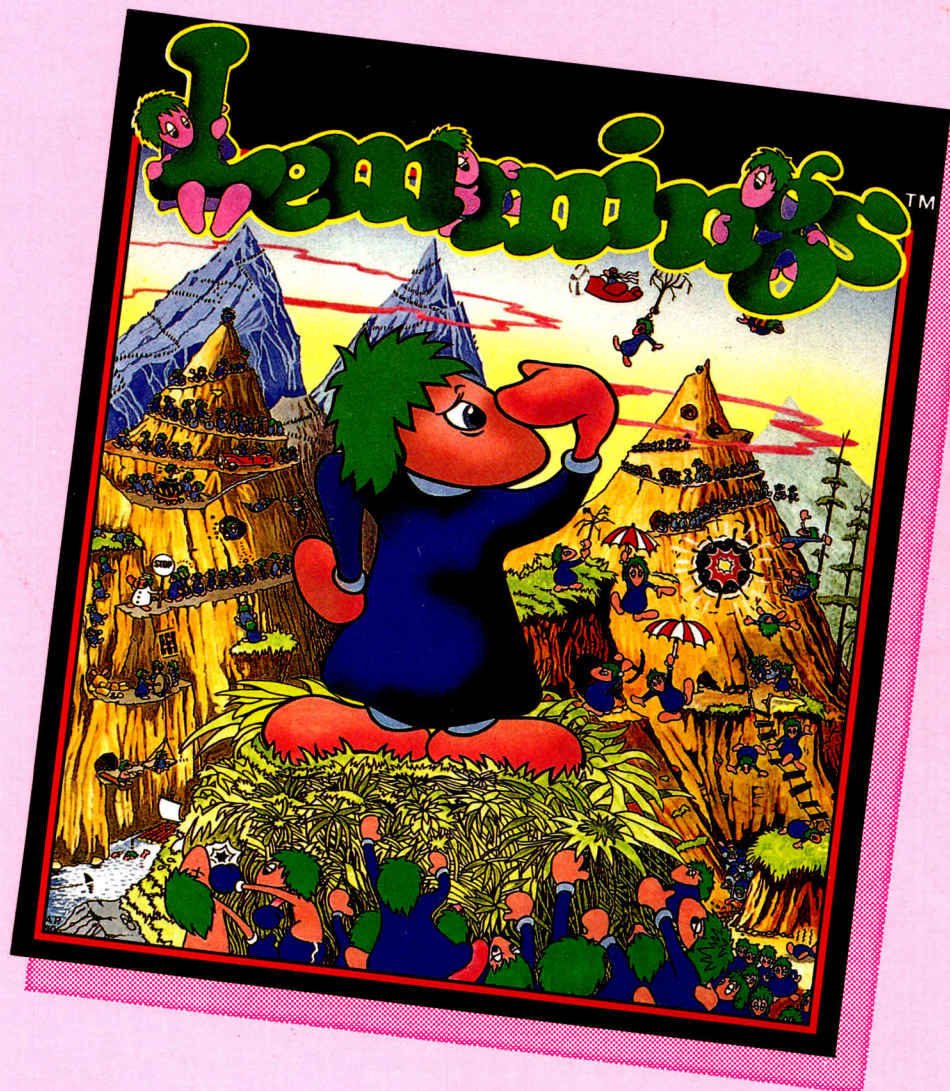
THE PC MAG

plus
**THE
AMSTRAD
USER**

March
1991

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ISSN - 1035-9516

*They're cute, they're furry,
they're suicidal!*



..... from Mindscape.

More details inside.

FROM HAND-HELD TO FLATBED SCANNERS



LIGHTSPEED 400P A4 HAND SCANNER (right)

The LIGHTSPEED A4 scanner is a hand held or document feed unit that can easily scan the full width of an A4 page. It is dot selectable, from 100 to 400 D.P.I. in increments of 10 D.P.I. It handles line art and graphics with ease as it has four selectable dither patterns plus a black and white line art mode. Pop the LIGHTSPEED on top of the motorised 10 page document feeder, and it is no longer a hand scanner. The document feeder allows you to stack up to ten pages at a time, and it will scan these through at a consistent pace for incredible accuracy. It is supplied complete with Lightpaint image editing software and ReadIt! O.C.R. software for converting your scanned images into pages of text without re-typing! The 400P can also be supplied with Omnipage.



LIGHTSCAN 200H MINI HAND SCANNER

There has never been a neater, more economical way to move into the exciting world of scanners than the LIGHTSCAN 200H. It can scan both grey patterned and line art diagrams at 200 dots per inch. It is supplied complete with Lightpaint image editing software. Can also be supplied with ReadIt! O.C.R. software.

LIGHTSCAN 400J HAND SCANNER

The LIGHTSCAN 400J hand scanner is a unit that can scan a full 105mm width. It is dot selectable, from 100 to 400 D.P.I. in increments of 10 D.P.I. It handles line art and graphics with ease as it has four selectable dither patterns plus a black and white line art mode. It is supplied complete with Lightpaint image editing software and ReadIt! O.C.R. software.

ADARA AHS-405C COLOUR SCANNER

A hand held scanner for the PC that captures images IN FULL COLOUR! It will run on mono, EGA and VGA systems. Imagination is your only limit! The package comprises an interface card (8 bit or 16 bit), the scanner unit, comprehensive manuals and LA PALETTE and IPHOTO scanning and image editing software. IPHOTO can convert from colour to grey to black and white, soften, sharpen, rescale, resize, ANYTHING!!! If you're into graphics then you MUST HAVE IPHOTO! The AHS-405C can also be supplied with ReadIt! O.C.R. software.

GUIS 321 PAGE SCANNER

The GUIS 321 A4 page scanner is the price breakthrough of the decade. The unit is a dedicated scanner that can handle a full A4 page at 200 D.P.I. Simply place the page into the top of the motorised page feeder, and select SCAN from the software. Average scanning times are around 12 seconds for a full page! The supplied software (WINNER) is Windows based, and includes a run time version that will work on all PCs. The software allows you to select a full page, a tiny portion or any area in between. The WINNER software does more than just control the scanner though, it's a full page composition package, ideal for newsletter, brochures, flyers etc. It is supplied with Read-It! O.C.R. software.

LIGHTSCAN 320F FLATBED SCANNER

A high speed, high resolution (300 D.P.I.) black and white, and dither pattern flatbed scanner. In 10 seconds, you can have an accurate reproduction of a complete A4 page in your computer ready for manipulation! The 320F is bundled complete with MICROART scanning and graphics package giving you total control over the scanned images. It supports 51 levels of brightness, 51 levels of contrast and 15 different dither patterns to ensure you get the exact image you're after. Whilst being great with graphics, the 320F scanner is also wonderful with words. The scanner is supplied with OmniPage O.C.R. (386 based PC required). This package gives exceptionally accurate text recognition, saving you hours of re-typing. OmniPage is supplied complete with a run-time version of Windows.

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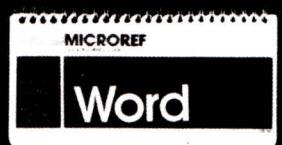
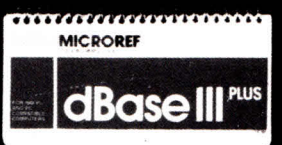
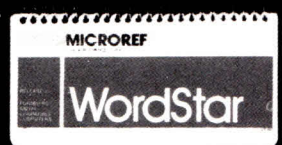
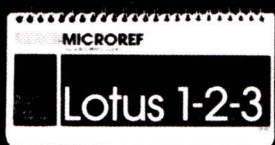
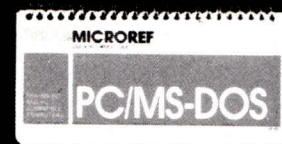
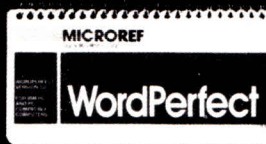
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"*FAR SUPERIOR to any other guide, cheat sheet, or the original documentation. Excellent guide for all users. Highly recommended!*" John C. Dvorak, PC Magazine

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ESSENTIAL COMMANDS are organized into logical sections for easy reference.

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SPIRAL BOUND pages lie flat, turn easily. Built-in easel, too.

The diagram shows a keyboard layout with function keys F1 through F12. Each key is labeled with a specific software command or function. For example, F1 is labeled 'Go to DOS/Shell', F2 is 'Spell Check', F3 is 'Screen Options', F4 is 'Move/Copy', F5 is 'Text in/Out', F6 is 'Align Tab', F7 is 'Footnote', F8 is 'Font', F9 is 'Merge/Sort', F10 is 'Define Macro', and F12 is 'Block Op'. Other keys like CTRL, ALT, SHIFT, and UNSHIFT are also labeled with their standard functions.

The image shows a hand holding a spiral-bound MICROREF guide. The visible pages are titled 'SETTING PAGE FORMAT' and 'SPECIFY PAPER SIZE'. The 'SETTING PAGE FORMAT' page includes a 'GUIDELINES' section with instructions on how to use page format settings to indicate the size and type of paper and change the margins. The 'SPECIFY PAPER SIZE' page includes a 'SPECIFY PAPER SIZE' section with instructions on how to specify paper size and width of margins, and a 'SPECIFY PAPER TYPE' section with instructions on how to select a paper type. The pages are numbered 51, 53, 45, 47, and 49.

Available by Mail Order from The Amstrad User 641 High Street Road, Mt. Waverley, 3149 on (03) 803 9661 or retail outlet The Amstrad User Computer Shop

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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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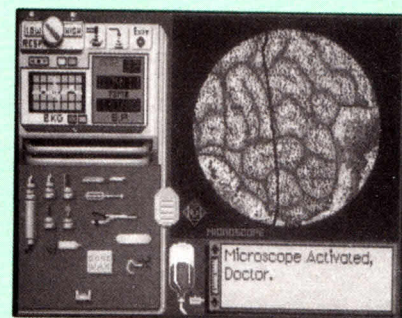
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NEWSNEWSNEWSNEWS

The latest information from the PC arena.

WAR TACTIC SIMULATIONS

Hardened war-gamesters and tacticians will be pleased to read that Directsoft Australia has secured the rights to distribute a number of high quality war simulations. "War-sims" are extremely popular in the States and the UK and have a small but growing band of followers in Australia. They are not arcade action games which rely on quick manipulation of the joystick, far from it, they are often similar to the type of simulation used by the military for training purposes.

The first of three releases is **Action Stations** (\$99.95). The game has been designed by an executive officer of the USS Arkansas and has received rave reviews in US magazines. It has also received a 'game of the month' award in Byte magazine and has been nominated for the war game of the year in Computer Gaming World. Action Stations is an actual naval combat modelling system adapted for the PC in which the player can take full command or delegate to 'computer subordinates'. It comes with four disks containing 186 ship and unit classes, 30 scenarios, a Save Game feature, and a scenario builder and generator which respectively allow the player to create battles or let the computer generate situations based on player's specifications.

The second is **Blitzkrieg at the Ardennes** (\$89.95) and is based upon the board game of the same name. It features realistic sound effects and full colour graphics, V-2 Rocket attacks, weather, bridge blowing and rebuilding, defensive fire from artillery, infiltrators and hidden units. One or two players can take part and the game also includes a handicapping system for play balance.

The third release, **White Death** (\$89.95), is also based on an award winning board game and simulates one of the battles being fought around Stalingrad during the second Russian offensive during the winter of 1942. The player can choose to take either the German or Russian side, but in any event will be presented with a very tough computer opponent. White Death features six scenarios, weather, supply bunkers, rail movements, tank fight, commandos, artillery and more.

In the pipeline is a follow-up to White Death called **Suez '73**; a World War 1 version of Action Stations; and a space naval war game called **Worlds at War**.

The PC Mag hopes to be able to put some of the games mentioned above through their pages and provide more detailed reviews in later issues. We also hope to add them to our Mail Order list.

In the meantime, you can get more details from Directsoft Australia at 7 Warwick Place, Wahroonga, NSW 2076, by ringing (02) 489 7853 or by Fax on (02) 489 7893.

DEMAND TAKES BUSTER TO U.S.

Growing overseas demand for Leprechaun Software's **Virus Buster** anti-computer virus system has taken its developer to Atlanta, Georgia in the United States. Establishing operations to distribute and support Virus Buster in the US is quite a "bold step" for the Brisbane-based company, said the Managing Director Roger Thompson.

"The Buster has a strong user base here (in Australia) and we are well placed to continue local growth. It has competed with major American rivals here and proved itself against them. US users are just starting to take the virus threat seriously on a broad scale despite widespread publicity. This will make the US a challenge for Leprechaun - we have to build awareness of virus issues across a huge computer user base." He added that there would be no better reward than to see the Australian-made Virus Buster succeed in the United States.

For more details on Virus Buster contact your local dealer or Leprechaun Software P/L at PO Box 134, Lutwyche, Qld 4031 or ring (07) 857 2686.

COMMUNICATIONS CENTRE

The first facsimile machine to be released by Amstrad brings features previously only available with large office fax machines to a compact desktop unit. The Amstrad FX9600AT "Superfax" carries a recommended retail price of \$1899.

It can be linked to a personal computer on which the document can be prepared then faxed automatically without being printed out first. This enhances the quality and speed. It can also be used as a printer for the computer and can scan and memorise personal signatures or company logos for automatic printing on any selected fax or printed document.

Used as a standard fax machine, it will take up to 10 pages in the automatic document feeder. It can store up to 50 fax numbers for 'speed dialling', and graphics and photographs can be reproduced using the grey levels of the half-tone feature.

As a telephone the unit can be used 'hands-free' with a facility to store another 50 often used numbers (this is in addition to the 50 fax numbers). It also provides automatic differentiation between incoming phone and fax messages. It can also be used as an answering

NEWS NEWS NEWS

machine storing an outgoing announcement (up to 16 seconds) on a microchip. Incoming messages are recorded on a standard C30 microcassette tape.

For more details you can contact your local dealer, *The Amstrad User Computer Shop*, by phoning (03) 803 9211, or Amstrad in Sydney on (02) 316 5289.



• *The new Amstrad Superfax.*

HYPERTEC UPGRADES

Hypertec has announced two new Hyper 386SX upgrade boards (bringing the grand total to four) which now allows even more 286-based computers to be inexpensively upgraded to 386 performance.

The Hyper 386SX is a credit-card sized processor upgrade board which fits directly into the processor slot of an 80286 machine by replacing the original 80286 chip. When installed it gives full code compatibility with all the latest 80386-based software, while retaining full compatibility with existing 80286 based software and hardware.

The four versions allow the widest range of machines to be

upgraded. The Hyper 386SX PLCC I is for IBM PS/2 Model 50z, Epson AX2e, Samtron 286s, Mica 286 Tower, NCR Model 0529 and PC710; the PLCC II is for IBM PS/2 Model 30-286 and Memorex Telex 7025-12; the PGA is for IBM AT, PS/2 50 and 60; and finally, the Tower is for Compaq Deskpro 286 and NEC Powermate (particular models). As the Hyper 386SX is suitable for both 'classic' and micro channel architecture machines, one upgrade board can be used whatever the computer architecture. All versions have a recommended retail price of \$595.00 (ex tax) and carry a 24 month warranty.

For more information contact your local dealer or Hypertec on (02) 816 1211.

TASWORD PC-2

THE WORD PROCESSOR

"Good, hardworking programs that offer ease of use without sacrificing quality output can be hard to find. Enter TASWORD PC2..."

Mike Turner, *The PC Mag.*

THE FEATURES

Tasword PC2 incorporates all the legendary features of Tasword PC, with much more:

- Dual files editing
- Tree structure directory management
- Integral data base
- Real English spelling checker
- Line drawing and boxing
- Compatible with all printers including laser
- Contents create and find markers
- Page previews
- User keys and trigger word macros
- File conversion
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At discerning computer shops or mail order from Dolphin. Tasword PC users may upgrade to PC2 for \$199 by returning their original Tasword PC disk. Enclose cheque/money order/Bankcard/Visacard/Mastercard details. Mail \$3.00, Overnight courier \$10.00. All prices include sales tax. All products guaranteed.

Tasword PC2

Mike Turner looks at the latest offering from the Tasman Software word processing stable.

The gap between Word Processing programs and Desktop Publishing programs is growing smaller all the time. Many word processors these days offer a staggering array of features; including multi column layouts and incorporation of graphics with text. Whilst this trend is commendable, it often means that beginners are left floundering, and that many of the advanced features of these programs are left unused. Good hard working programs that offer ease of use without sacrificing quality output can be hard to find. Enter the TASWORD PC2 word processor from Tasman Software. It offers a good level of performance and ease of use to suit beginner and advanced users alike.

Tasword PC2 is a newer version of the Tasword PC program already on the market. Those readers familiar with that package will immediately feel at home with it. Total newcomers to the way Tasword shuffles text, be prepared to be quite pleasantly surprised.

Basically the package consists of a fully featured text editor with mail merging, spelling checking, and a basic database capability thrown in. An upgrade path will be available to existing Tasword users, enabling them to take advantage of the substantial improvements.

The review package came neatly boxed containing both 5.25" and 3.5" disks and a comprehensive manual. Installation is relatively easy, especially for hard disk users, as an installation program looks after most of the difficult things automatically. Once installed, getting used to the program is simple with the aid of an on screen tutorial file provided. Plenty of help is available by pressing the obligatory F1 key at any time. Most beginners should be able to start typing their first letters within a couple of hours. The more advanced features will take a bit of time to learn, but as I said earlier this process is much simpler in Tasword than any other programs I have come across.

EDITING & PRINTER CONTROL
Tasword is definitely one of the easiest to use processors I have encountered. Most common functions are accessed by function keys causing drop down menus to appear. Simply highlight the option of your choice and away you go. Everything from moving around the file to checking spelling can be accomplished this way with relative ease.

One of the nicest features of Tasword is the way it handles printer control codes. For the non technically inclined, these are the non printable codes that a word processor inserts in your text to indicate to the printer how to handle certain characters. A lot of early word processors required the user to learn certain control key sequences to insert these codes into the text. Not so with Tasword. Like most modern word processors, codes can be inserted easily with just a couple of key presses and no memorising required. Pressing SHIFT & F9 together causes a large window containing all the available printing options to appear. The codes are represented by the letters A-Z and a-z. Capital letters turn on an effect and the small letters turn it off. For example "B" would turn on bold printing and "b" would turn it off again.

There are also short-cut keys available for use once you become familiar with the necessary codes, allowing you to input them directly, by-passing pop-up windows altogether.

PLENTY OF FEATURES

Whilst this is a no nonsense word processor, it is not short on features. There are too many to mention in great detail but I will touch on a few of them now to give you an idea of what you get for the money. Firstly there is a dual file editing capability. The screen may be split either vertically or horizontally to display the second file being edited. This is very handy

for someone like myself who writes articles for a living. You can be working on your article, letter or whatever in one window and have another file containing your rough draft notes on the screen in another. Swapping between these files is a breeze, as is copying text from one to the other, eliminating a lot of retyping. As if that isn't enough the program also provides you with four notepads which are again easily accessed at any time whilst editing text. Again this could be handy in either a home or office situation for jotting down those important things from the inevitable phone calls that seem to always interrupt you when you least expect it.

LINE DRAWING

Then there is an excellent line drawing feature which allows you to design some quite professional forms as well as enhancing all sorts of other documents. There are no fancy key combinations to learn. Just enter line mode and use the cursor arrow keys to place either single or double lines anywhere you want in your document. During line drawing the Caps Lock key acts as a pen up/down toggle, so that you can position the cursor without drawing unwanted lines.

MACROS

Next up we have things called user keys and trigger words. These are perhaps the most powerful features of this word processor. Firstly, user keys. There are 152 of them and they are invoked by pressing F9 and then any letter from A-Z or a-z, or any number from 00-99. These user keys can be used to insert a word or sequence of words into your text or to perform some other command automatically. You may have heard the term macro used by some other programs - well this is the same sort of thing. So a key press combination of F9 followed

by a capital S might put the words 'Yours sincerely' into your text. They could even be centred on a line and made bold if you wish, all automatically. This really cuts down on typing time and having to remember how to get certain effects. Trigger words do the same sort of job except that there are no special key press combinations required to invoke them. Say I define a trigger word called tw to insert The words "Tasword PC2" into the text. Thereafter, every time I type the letters tw followed by either a space or a punctuation mark of some kind the phrase Tasword PC2 magically appears in my text. I might wish to design a trigger word to draw lines or boxes, to change directories and so on. Without being too technical, let me say that the complexity of commands you can use in user keys or trigger words is amazing and, by saving them as part of the program customisation, almost unlimited storage space is available for them.

CUSTOMISATION

That brings me to the next feature, which is program customisation. Tasword can be very easily reconfigured to suit individual needs. When you select the Customise Tasword option from the second of the two main menus, you can save your preferred choices to disk. Such things as screen colours, spell checking operations, margins, tabs, page layout etc. etc... can all be saved so that each time you use Tasword thereafter, it will come up in your preferred format. A file called TW.CUS stores all the details. Should you wish, you may set up several differing customised versions of Tasword by saving the various preferences under different file names, provided they all end with a .CUS suffix. These customisations may then be loaded and swapped around at will. This is handy if you regularly

use different types of stationery in your printer or use radically differing page layouts for different types of documents.

SPELLING CHECK

Next up we have spelling checking. Big deal, I hear you say. Most word processors these days have a spell checker built in. True, but few are as easy to use and as flexible as this one. It also eliminates one of my pet hates, and that is American spelling! Yes, the 70,000 odd word dictionary is English - Hip Hip Hooray! An unlimited number of personal dictionaries may also be created to suit any purpose. Another handy feature of this spell checker is the option of have it proof read your text as you type it. If you wish to configure it this way the program will check each word typed against its various dictionaries and then either alert you of suspected mis-spellings immediately or also provide suggested corrections. This routine is fast and effective.

For crossword fanatics, other spell check options include an anagram search and a word matching routine, which is great for finding those words which have a couple of letters lacking. Missing however, is the usual thesaurus that comes bundled with some packages. However, you get what you pay for and I think most of use could live without this luxury.

FILE MANAGEMENT

Also included is a directory management function. This provides a very easy to use file management system. A graphic representation of the directory tree is provided along with a more detailed display if required. Whilst it doesn't provide all the features of a dedicated file management program like XTREE Pro or Direc-Tree Plus it is still quite good. Allied with this is the ability to make certain files "Read Only" to

prevent accidental erasure or altering of the contents.

Password protection and file encryption are also provided. Whilst some of you may think this is a bit over the top, I can assure you that even in the home there is a real need for data security. Not so much to prevent theft but more as a way of keeping sensitive files away from say the prying eyes of children. What they can't get at they can't destroy! Teenagers who fancy themselves as computer wizards are amongst the worst offenders - take my word for it!

TABLES OF CONTENTS

Another excellent feature is the ease with which generation of a table of contents for a document can be accomplished. One key combination (CTRL+U) inserts a special marker into the text. This is not printed out with the rest of the document but serves to include that line of text in an automatically generated Table of Contents (TOC). The TOC may be viewed any time by pressing ALT+C. It may also be saved as a separate file for subsequent editing and/or printing. The other main use for this function is to allow you to quickly find your way around in large documents. This is particularly evident in the rather large tutorial file. Simply call up the TOC, move the highlight bar to the desired topic and press enter. You will immediately have the desired passage of text on the screen.

PAGE PREVIEW

Another feature new with this version of Tasword is a Page Preview function which is accessed from the print menu. This is a function that should be compulsory on all text based word processors. In these environmentally conscious days, the more paper we can save the better. It is really handy to have a screen representation of the finished

article without the need for taking a draft printout. Whilst this is a good feature, it is questionably implemented in Tasword compared with other programs such as WordStar. The resulting screen display is of a fixed size and the text is unreadable. Perhaps future versions may incorporate the ability to zoom in or out to adjust the preview display. However, as it stands, it is still a useful function for checking the overall layout of pages. Remember that unlike some other word processors, all of these features mentioned above are very easy to use with lots of help and on screen prompts there to assist you. That's a big plus in anyone's book.

PRINTER CUSTOMISATION

Another extremely useful feature of this program is the large number of printers it supports. Like LocoScript PC the ready-made database of printers is extensive and make installation of new or subsequent printers a breeze. In the unlikely event that your particular printer isn't represented amongst the potted ready to go list, you may define your own parameters quickly and easily. As long as you can read escape codes from your printer manual and type them in correctly, you will be able to get your printer to do anything you want. Similarly, should you wish to change the standard configuration as supplied, this is also possible.

DATABASE

Also included in this package is a simple database for use with things like mailing lists or customer data files. Data files are extremely easy to create, even without referring to the manual. The on-line help available sees to that. Once created simply follow the on screen instructions to add records. These are automatically sorted into order for you according to a key field that you assign.

Information from databases may be accessed at any time whilst text editing and text is pasted straight into the document. Alternatively the data files may be used in mail merging operations, for printing labels or standard letters etc. As I said this is a simple database that does have a few limitations especially in the area of indexing records. Only one of the fields can be used for sorting which does limit it somewhat. However, given its purpose, it does the job well.

TASPRINT

Finally another utility provided with the package is a thing called Tasprint. Only one standard font is provided with the package and to get the full value out of it additional fonts must be purchased. These can substantially improve the printed output from some dot matrix printers. However, for those with reasonable quality multi-font 24 pin printers, additional Tasprint fonts may not be considered necessary.

OTHER FEATURES

As I mentioned earlier, there are numerous features in this package and I have only touched on the major ones. The program appears to be well designed with no apparent bugs. The documentation is excellent and getting used to the program is a painless process for beginners. The package will run on just about any IBM compatible machine, although like most packages these days a hard disk drive does make life easier. For those with extended memory, Tasword can be made to load into this by configuring part of the memory as a RAM Drive. This is particularly useful for those with portable machines who wish to make the program run faster and not access their floppy disk drive so frequently.

A file conversion utility ensures that text from other word processors can be easily incorporated

into Tasword files. The only one that I had some trouble with was WordStar - I was using Version 5, whilst the file conversion utility only supports version 3. Trying to load the resulting text file caused an error message to appear. Ignoring it caused no problems but a fair bit of tidying up was required to get the resulting file looking halfway normal again. Still one has to expect problems in file conversion, there are always hiccups. As Tasword uses a smart ASCII format in its files, I had no problem exporting documents made by Tasword to other word processors and to the Ventura Publisher desktop program.

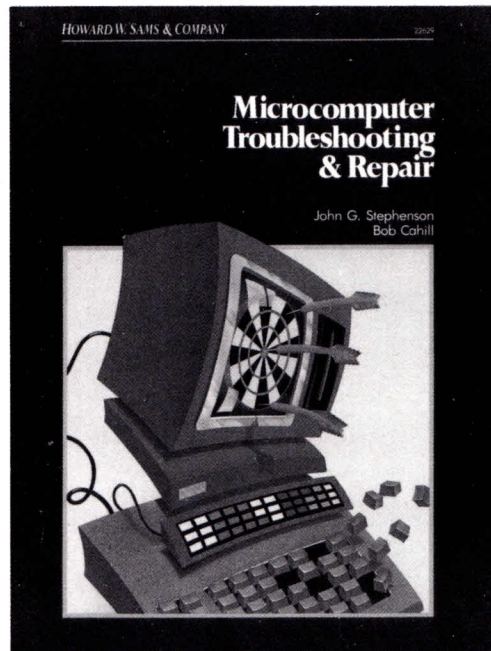
SUMMARY

Tasword PC2 is available at the recommended retail price of \$299. Obviously a lower price is offered to those bonafide owners of the original Tasword program, as they need only purchase through an upgrade path for a total of \$199. Given its many features and relatively low price, it would appear to offer good value for money.

Overall I was impressed with the program. Having used other versions of Tasword before, I felt quite at home with the package from the start. It does lack some of the sophistication and power of programs such as Microsoft Word or WordStar but, as a result, also gains in simplicity and ease of use. It is certainly comparable with LocoScript PC from Locomotive Software and, in my view, is squarely aimed at the home or small business user and would suit these purposes admirably.

Tasword PC2 is worth a look, even if you already own a more complex word processor. It may make a difference in how quickly newcomers adapt to computerised letter shuffling. Well done Tasman Software, and many thanks to Dolphin Computers for supplying the review package. ■

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GAME PLAY

ATF II

HIDDEN AGENDA

PGA GOLF

BILL & TED'S EXCELLENT ADVENTURE

ATOMIX

MIND GAMES

VERDICTS

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

ATF II

- Published by Solid Dital Integration • Distributed by Mindscape
- Supplied in 5.25" or 3.5" packs • Price \$69.95
- Requires EGA, CGA, Hercules, Tandy, or VGA screens

There are a great number of flight simulators currently available, with more becoming available every month. What Digital Integration (DI) are offering in ATF II is an arcade style flying game, which is an up-grade of the game that they produced for 8-bit computers back in 1988. But can an 8-bit game be successfully converted to the PC I hear you ask? Well, read on and see how successful DI have been.

The class of ATF II is noticeable right from the start. The loading screen is a very good copy of the box-art, and from here you go to the security room, where you must enter the security code before you can access the game proper.

Once you've chosen the option to commence action, you must first visit the briefing room. Here you are shown the current balance of power, which will be more in favour of the enemy as you raise the skill level. Next you are shown a map of the area you will be flying around, with both friendly and enemy units indicated, as well as the initial position of your ATF. Any enemy units identified will be declared here and entered into the data-base of your fighter. Next comes the arming of your plane. Here you are presented with a graphic image of your ATF in it's hanger, and as you add fuel, missiles and cannon rounds you can actually see them being

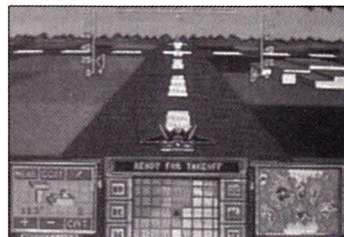
loaded. Once you're happy with your armaments, you are free to proceed to the runway and get amongst the enemy.

Your initial view of the combat zone shows your ATF lined up on the runway. You view all the action from behind your aircraft, with the control panel and heads-up display (HUD) superimposed over the action. Your instrument panel consists of three multifunctional displays (MFD) which can show a moving map, the world map, primary flight information (speed and heading

etc.), the ATF system status (i.e. how much damage you have sustained), the status of your selected weapon and the all important target data-base. The MFD are changeable so the loss of one MFD does not make it impossible to carry-on. Also on the instrument panel are indicators to show

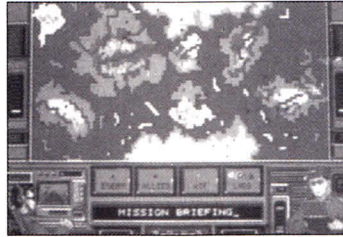
the state of your undercarriage, the automatic landing radar and terrain following radar. The HUD shows speed and altitude on vertical scales on the left and right, and direction in a horizontal scale across the top. In addition, the distance and direction to your current target and the current weapon status are shown.

Well, cockpit familiarisation out of the way, it's time to get airborne. First, choose your target from the data-base, take-off and turn on the terrain following radar. Now all you have to do is turn



onto the correct heading and fly to your target and destroy it. The only things you'll have to avoid or deal with are enemy fighters and incoming SAM's - hardly a challenge to a trained fighter pilot. The area you fly over is made up of coloured squares, which change as the terrain changes. You continue to fly around until you either run out of ammo or fuel, or are shot down. If it's ammo or fuel that you are short of, then it's time to find a friendly base and land on it to allow for re-fuelling and re-arming, also to receive a mission debrief which shows you how successful you have been to date and how the balance of power looks. You start with three ATF and the game is over either when the enemy or allies surrender, or all of your ATF are destroyed.

Graphically, ATF II is great. The aircraft and ground targets are large and clear and the explosions are great. The only let down is the missiles fired from your ATF,



which appear only as crosses and could have been done better. The introductory screens are well drawn, detailed and animated. All graphics modes are catered for, but the sound is a bit of a let down - the only sounds being the exploding targets. The program does not appear to support any of

the sound-enhancing boards either. DI have opted to copy-protect their product by use of the "key disc" system. Although you can copy the game disc, the program won't run unless you use the original disc to start from, which can be a bit inconvenient.

ATF was a huge hit for DI on the 8-bit computer systems. The work that has been put into upgrading the game for 16-bit machines has been well worth it. It is a well produced package that improves on it's predecessor and utilises the better graphics ability of the 16-bit machines to great effect. ATF II, as an arcade flight game that is easy to get into, but with it's eight skill levels will keep you entertained for a long time.

VERDICT ■ ■ ■

HIDDEN AGENDA

- Published by Solid Springboard • Distributed by Pacronics
- Supplied in 5.25" or 3.5" disk format • Price \$99.95
- Requires 512k, two 5.25" disk drives, colour graphics adapter

Every once in a while a software company will design a game that they hope will capture the market by exploring an area which game writers rarely seriously consider; that area is politics. Political games attempt to offer an escape from the mindless repetition of arcade "shoot-em-ups". The reason that I say attempt is that most either offer a poorly designed concept or are doomed to spending their days in the gloomy back shelves of your local shop, unjustly ignored because their intention is to make you think.

In an average adventure game your actions are clear cut, they either help solve a puzzle or they obviously lead you to some particular goal (eg. what would happen if you ate the apple in

Larry 1?), but in a political game your actions can have several different repercussions, like ripples from a drop falling into a pond the effect can be seen immediately or only much later.

Hidden Agenda is that type of game, as it offers you the chance to lead an imaginary South American country from the rubble of civil war to peace and prosperity. The mythical country is called Chimerica and as its new President you must choose your cabinet from the leaders of the three major political parties. There are three leaders in each party but only four cabinet posts, and the Ministries are namely Agriculture, Defence, Internal and External.

This ensures that you will never be able to build either a truly

balanced cabinet nor one where one party will hold full control. The complexity and mastery of the game revolves around this set up, and you must carefully balance all the forces around you so that their constant fighting and opposing views will not sway you from your course. The three political parties reflect the standards found in most countries; Popular Stability is the typical right wing party - it is made up of the wealthy land owners and military which were happy to live under the previous dictator until his aims began to conflict with theirs; Christian Reform is the middle class party - it appeals to the average Chimerican; National Liberation is the left wing party - it appeals to the workers and the



Christian Reform Party:

Ignacio Munez Laranjera

Liliana Ortiz Lanza

Francisco Ferrante Oberon

Formed in the 1940s as a "popular alternative," Christian Reform had its heyday during the short-lived reformist government of Leonard Flores (1950-1954). Long the only tolerated opposition party, it managed to avoid banishment even during the worst of the dictator's excesses. Its appeal is strongest among the small urban middle class, though it is also favored by elements of the coffee producers and the leadership of the Catholic Church.

Party Dossiers

Dossiers



oppressed and the revolutionary members of society. This scenario forces you to walk a very thin line to remain popular and efficient, it is not only the people of your country you must please but also the international community.

If you side with the left and allow for aid from socialist countries you will be on Uncle Sam's bad side, whereas if you side with the right then your popularity with the peasants will rapidly decline and you will be up to your neck in angry crowds of revolutionaries.

Your army is made up of the two factions that brought the previous dictator down, and while one wants more expensive US toys to play with the other wants to know when you are going to hang the criminals from the

action you will be deposed. Your decisions are made by conducting interviews with your appointed ministers and members of the public. During these interviews you will hear the grievances of these people and their advice on how you can best solve them. As president you must carefully weigh this advice and try to foresee how it will affect the lives of your people.

Members of the public consist of categories such as the landless peasant, the bishop or banker. You must be able to bargain with them and achieve compromises to keep them in your favour.

Your policy decisions will be reflected in the newspaper reports and charts that you can examine during the game, these will show you such things as your level of military spending, debt and infant mortality rate. Sometimes your decisions will also be reflected by the occurrence of a special event. These occur when an influential member of the public has an important decision for you to make. These require quick thinking as they have to be cleared up there and

then and may be of great importance to your future.

The ideas behind the game are very well drawn out, the research work has been well done and the way that ramifications and complexities develop is definitely the fruit of good game design. Unfortunately this great design is not present in the presentation and user interface, including a couple of nasty bugs. The graphics are below standard, (only CGA and black and white). It is unfortunate and may deter users as many expect at least EGA support in new games. The game was originally available on the Macintosh and it appears that there wasn't a great deal of work put into the conversion.

The bugs I found were quite annoying. One appeared during an encounter with the US ambassador. After I had consulted my minister and made a decision I was shown the ambassador's reaction as usual, but the highlight bar would not move to the exit option and so I was stuck there.

The other so called bug is more of a design flaw, as hitting the escape key dumps takes you to the DOS prompt without a simple "Are you sure you want to exit?". This I did several times when I tried to discontinue some encounters and pressed ESC (due to habit) instead of the appropriate on screen prompt.

The game deserves to succeed as it presents an angle of gaming that is rarely explored and though it has its flaws it achieves its aims. It is playable and enjoyable and will give the average person an insight to the murky world of politics. It really shows that in politics power and influence can easily thwart the most pure ideals. (Remember appoint your cabinet carefully, because one day they might execute you, rather than your orders!)

VERDICT ■ ■ ■

Christian Reform. A former teacher, mother of four, and member of the board of trustees of several social service agencies... Widow of Armando Lanza, popular university professor, politician and critic of the Fascantes, whose assassination in the last year of the dictatorship helped spark the dictator's final fall from power. Still carries the banner of her outspoken and influential husband, but has now become an important figure in her own right.

Age: 47

Recent statements indicate her support for:
-assistance to needy farmers
-civilian control over the military
-increased funding for education and health care
-stable relations with all countries.

Liliana Ortiz de Lanza



Appoint To...

Christian Reform

Party Dossiers

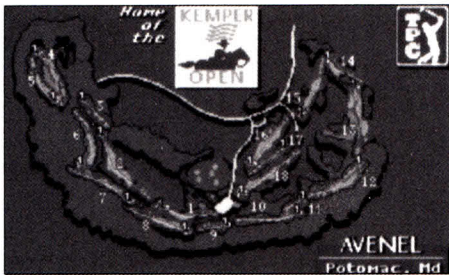
Dossiers



PGA TOUR GOLF

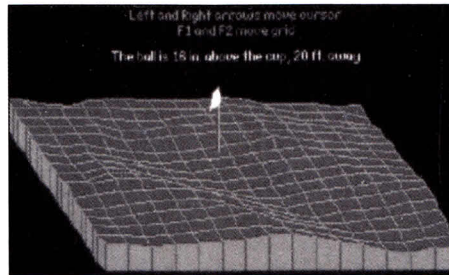
- Published by Electronic Arts • Distributed in Australia by ECP
- Supplied in dual disk packs • Price \$59.95
- Requires 512k and Hercules, MCGA, CGA, VGA or EGA screens

Golf is one of the oldest sports there is. It's not surprising then, that golf has been the subject of a vast number of computer simulations. After all, moving around the keys on your computer is a lot less strenuous and expensive than the real thing. It was not until U.S. Gold launched the Leaderboard series of golf simulations that a really good golf game was produced. Even now these games are still amongst the best available, although Ultimate Golf (Gremlin) and Jack Nicklaus' etc. etc. (Accolade) come very,



very close. Well, onto the golf simulator circuit with the launch of their new game, PGA Tour Golf, and it looks set to blast the others off the fairway.

PGA Tour plays similar to all other golf games, with a few subtle differences. Firstly, it's not licensed to an individual player, but to the whole PGA. Instead of the power bar being on the side of the playing screen it is a horizontal sliding bar. You enter PGA Tour through the Pro Shop. Here you can access a number of pull-down menus which house the game options. You can choose to practice driving, putting, an actual round, or to enter a tournament at any of the four courses available on the disk. Club selection is



automatic, but you can alter this as you desire. All the special shots are there, such as the punch shot. There are also a number of options available, such as displaying the ball and hole layout.

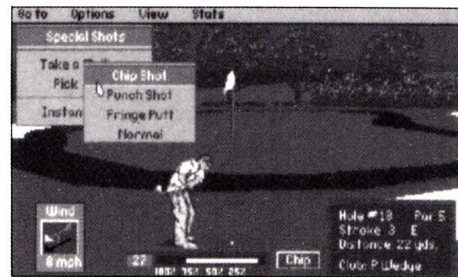
Another great innovation in PGA Tour is the instant replay. This occurs automatically whenever the computer decides that you have made a good shot (such as chipping the ball into the hole from off the green as I did once), or can be selected by you to let you know where your shot went

wrong. One of the best features is the automatic fly-by, just like you would see on the TV golf coverage, which lets you view the hole from the pin to the tee and locate hazards (such as bunkers and water).

Playing a tournament lets you compete against four human or computer controlled opponents. Each tournament consists of four rounds, and conditions differ with each one. At the end of each round, the bottom players miss the cut, so you'll have to play consistent golf to reach the money round. The results of each tournament are stored onto disc and accumulate with each tournament you play. The tournament rounds are great fun, as they give you

incentive to do better and earn more, next time.

As said, PGA Tour plays just like all other golf games. You view the back of your player and look over the shoulders down range. VGA and EGA graphics are great and the animation of the golfer is very good. Sound on the standard PC consists of the expected "plunks" and "swishes". The program supports mouse or keyboard, and menu selection can also be made by pressing the first letter of the desired option. The packaging and documentation with PGA Tour is very extensive and comes with a fold-out card showing the design of one of the courses (you can even score your own rounds on this card if you want to). PGA Tour requires 512K to run, and should work on almost any computer (the review



was completed on a PC20). It supports all graphics modes and some of the add-on sound systems available.

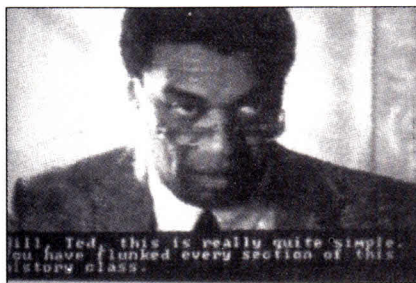
Electronic Arts have previously released a serious golf game called World Tour Golf. In all honesty, it was a bit of a flop. But with PGA Tour they have erased that embarrassment, and produced perhaps the best golf game available for the PC. Forget those flight simulators and business applications for a while and try a round or two of PGA Tour. It's a must for PC owners who don't mind golf, and well worth consideration by the rest.

VERDICT ■ ■ ■ ■

BILL & TED'S EXCELLENT ADVENTURE

- Published by Capstone • Distributed in Australia by Pacronics
- Supplied with dual disk packs • Price \$49.95 • Supports Sound Card
- Requires 384k with CGA, EGA, Tandy, or 512k with VGA, MCGA

Bill and Ted are two high school dudes from San Dimas. They want to form a rock and roll band which, unknown to them, will be responsible for ending wars, closing the hole in the ozone layer and other radical things like that. They have only two drawbacks; firstly they can't play a note (but they are bound to learn...maybe) and secondly, they are both in danger of flunking history. If this should happen, Ted (the tall, dark dude) will be sent to a military school in Alaska and Bill (the short, blonde dude) will end up sweeping up the local burger joint.



Determined to preserve the future, the governors send back Rufus (a real cool dude who wears cool shades), armed with a time machine cleverly disguised as a telephone booth to help our heroes out. And what grade do our heroes need to pass history? Nothing short of an A+ will do the job. Thus begins our most excellent adventure.

To pass history, Bill & Ted must present an oral report to their class about how those historical dudes would have viewed San Dimas in the 1990's. Armed with their time machine, Bill & Ted decide that the best way to present a really excellent report would be to visit all of those

historical people (they studied 12 during the year) and persuade them to come back to San Dimas and talk to their class. Thus, as Bill & Ted you enter the booth and dial the number for the first historical figure (which is the year we're around in) and it's off through circuits of time, searching for that A+ grade.

There are many ways of persuading the historical dudes to come back with you. Some, such as Napoleon (the short, dead dude) will just follow you (probably out of curiosity), others, like Joan of Arc (she's one hot chick) you must help, and others, like Einstein (Uncle Relativity) must be given something. Once you've persuaded someone to come with you, it's back to the San Dimas Mall to drop them off at the soda shop. Once you've bagged your quota, call Missie (I mean Bill's MOM) and it's off to the school auditorium where the report is given, your grade awarded and your score totalled up.

Gameplay on Bill & Ted's Excellent Adventure is okay. The problems you must solve are straightforward and easy, and the objects always appear in the same place. As well as the 12 main areas to visit, there are five others which will reveal objects that are necessary to the completion of the game, and there are puzzles to solve that entice the historical 'dudes' to come with you. You control Bill & Ted, either using joystick or keyboard as you guide

them through the adventure. Graphically, the game catered for all graphics modes, with digitised pictures from the movie used to show the history teacher and Rufus (which are very clear in VGA - see the back of the box if you don't believe me). In-game graphics are clear and there are some humorous touches (such as

the painting of Elvis hanging in Beethoven's room and the colour by numbers that Michelangelo used to let him paint the ceiling of the Sistine Chapel). Sound is good, with

digitised music and voices giving the game atmosphere. The program supports the Ad-Lib Music Card and this, if you've got one, should make the sound in the game excellent. There are four levels of play in the game. In levels 1 and 3, your quota of historical dudes is six, while for 2 and 4 you have to bag all 12. The big difference between the levels is that for 1 and 2 the dudes are easy to bring back with you, whilst in 3 and 4 you will have to get, in some cases, other objects before getting the right object that you need to give to the historical dude.

So, how will this game draw you back to play it again, once you've completed it, if it plays the same time and time again? Well, as well as bagging the historical people and collecting all of the objects, your final score is determined by the time you take to complete the adventure. Therefore, its only addictive appeal will be to try and finish it more quickly. All in all though, this game isn't too hard and, I think, its appeal may fade relatively quickly.

VERDICT ■ ■ ■

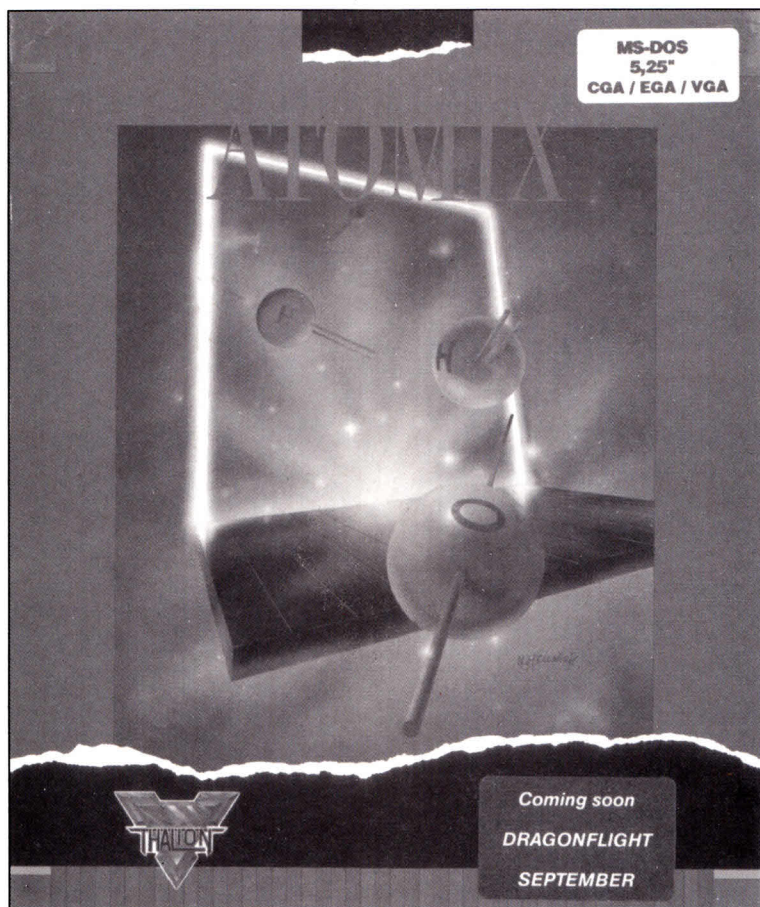
ATOMIX

- Published by Thalion • Distributed in Australia by Pactronics
- Supplied in 3.5" or 5.25" disk packs • Price \$49.95
- Requires CGA, EGA, VGA

It's not very often that a new game concept comes onto the computer scene. When U.S. Gold released E-Motion (reviewed in TAU August, 1990), people saw a new, simple game that was terrific to play. Well Thalion have also latched onto another simple concept, and have also produced an incredibly addictive game, which is guaranteed to keep you playing and thinking for a long time to come.

Atomix is another game about the world of atomic science. Whereas in E-Motion you had to destroy atoms, in Atomix you have to create molecules. On the lower left of your screen is the molecule that you have to construct (you begin with water), the time limit you have, your score and the level at which you are currently playing. The rest of the screen displays the game area, with the components of the molecule scattered around. Your aim is to move the components into an area where you can construct the molecule, within the time limit given. Succeed and as well as scoring for the construction, you also get a bonus based on the amount of time unused. After five

levels you get to play a bonus game that consists of arranging bottles of liquid in the correct order from empty to full, which is a good change of pace. Fail and in some instances you can buy an



added turn, but usually it's that familiar message "GAME OVER". There are three levels of play, ranging from Easy to Hard, and your choice here determines how much time you have available for construction of the molecule. Control is by either keyboard joystick or mouse.

Atomix comes with three 5.25 inch discs, one each for the CGA,

EGA and VGA versions. One disappointing aspect here is that the VGA version requires an AT (with at least 8MHz to run), which is a let down to XT owners who have upgraded to VGA graphics. Even on EGA the graphics are quite spectacular. The logo screen from Thalion is very good, and the game loading screen shows Einstein in very good detail. In-game graphics are very well done. CGA graphics, however, are quite

plain. Limited use is made in the game of sound, but this is not noticeable as the game-play will keep you enthralled. The concept of Atomix is very simple, and it is very easy to come to grips with. I found it easiest to use a mouse, but the other control mechanisms are fairly responsive.

I have heard that the best computer games are those that are simple to play, but which have good playability. Well, if that is true, then Atomix is destined to become a great game. With most computer games nowadays having manuals and instructions that it

takes days to study, it is good to be shown a game that you can pick up and play right away, even without reading the manual. Atomix is an addictive game that is great fun to play, and it will show you that it's as much fun to make molecules as it is to destroy them.

VERDICT ■ ■ ■

MIND GAMES

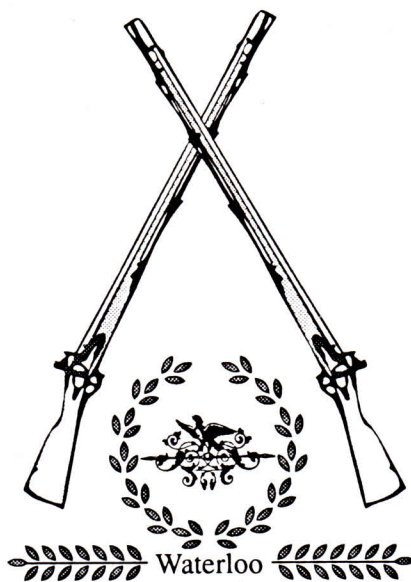
- Published by Beau Jolly • Distributed in Australia by Pacronics
- Supplied in 5.25" disk format • Price \$69.95
- Requires CGA or EGA screens

At the moment, compilations for the PC are becoming the flavour of the month, with a lot of the major software houses (Microprose, Accolade, Cinemaware, Electronic Arts, etc.) combining a number of their products into one pack. Beau Jolly have now entered this arena, snapping up three war games from PSS and combining them into a compilation called Mind Games. The games span a great deal of history, from Napoleon's defeat in Belgium in 1815 to a war between robot armies, set in the distant future. And for your money, this is what you get.

The first offering, and in my mind the pick of the pack is **Waterloo**. This recreates the 1815 defeat of Napoleon, but not in the old flat-board style used in most war games. Once you enter the program, you are given the option to either restore a saved game, have Napoleon or Wellington (or both) played by humans or computer, view all messages between generals, have the generals obey their historical orders (by turning this option off you can give all the orders), view the battlefield from positions other than your HQ, see the cannons firing, have the program display what it is doing and have the game automatically saved after every simulated hour of play (just in case your computer is "accidentally" turned off).

You view your army from your HQ position, seeing only the battlefield about 2 miles in any direction. You give orders to your Corps Commanders, who in turn interpret them and pass them down to divisional level. All orders are dispatched by messenger, so

it can be four or more game turns before they are delivered. Graphics are good, with units being represented by coloured blocks, cannon by cannon and commanders and messengers by individual riders. Unfortunately, there is absolutely no sound in the game. **Waterloo** is a departure from the traditional computer war game, because it uses a 3D landscape to



represent the battlefield. Absolutely hours of mind work in this.

Conflict: Europe is a 16-bit development of the old PSS 8-bit game called **Theatre Europe**, but with more sophisticated options and graphics. The concept is simple; as either NATO or the Warsaw Pact, you fight a war across Europe. Each unit is restricted to one space of ground movement, with the exception to airborne operations. The screen shows a large map of Europe (from the Germanies in the East to France in the west), where all the action takes place, and a

number of computer terminals. These allow you to plan air and special (chemical/biological, ASAT and special forces) missions, request the use of nuclear weapons, view the diplomatic messages (which are trying to resolve the conflict), effect a surrender (if necessary), view the happening of the war and set the game options. With five different scenarios to play, including a Star Wars option, this is a simple game that should hold interest for ages.

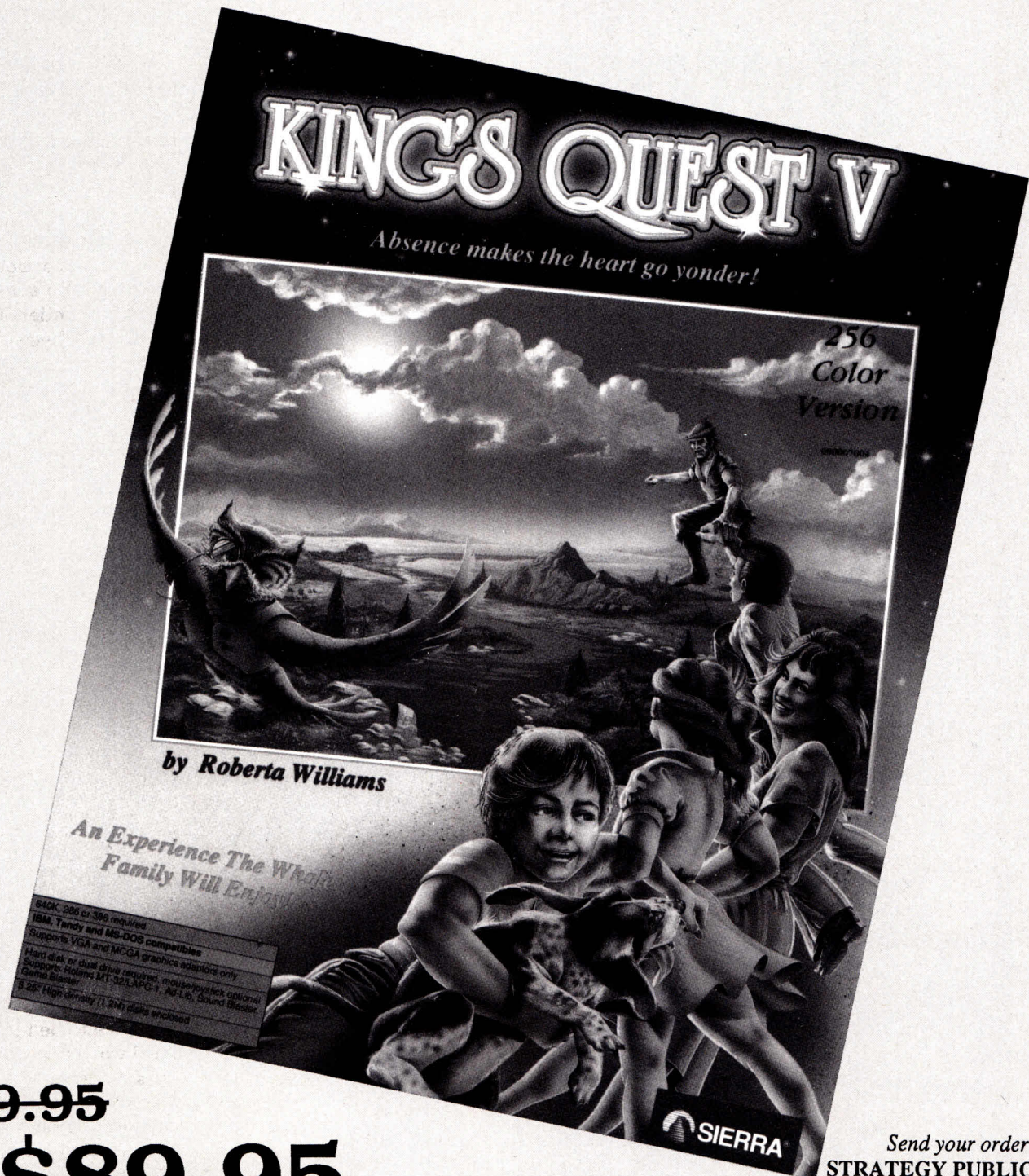
The last offering in the pack is an oldie called **Final Frontier**. It seems that people have been destroyed and the Earth is populated by robots. These robots live in cities and reproduce themselves, improving their design when they acquire new technology. You control one of these cities and, by visiting the various zones of the Earth, try to make your design of robot dominant. The game is played over three screens: the Icon Screen, which shows you a radar map of the current zone, allows you to see what is in each zone and to jump to the next zone; the Main Map, which is where the action occurs; and the Production Screen, where you build your robots. The type of robot you build will depend on a number of factors, but mainly the amount of metal and energy you have accumulated.

The idea is to pick a weak zone, destroy it, rape it of its resources and move on. Win the battle and it's on to the next zone, but lose and it's "GAME OVER".

Compilations have to be the most economical way to buy computer games, because you get three or four games for the price of one. Beau Jolly know this, and with this in mind have for their first PC compilation have chosen three games that will keep you involved for hours, challenging you to think.

VERDICT ■ ■ ■

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EGA version (16 colours) supplied with 760k x 3.5" disks & 1.2mb x 5.25" disks
VGA version (256 colours) supplied with 1.4mb x 3.5" disks or 1.2mb x 5.25" disks
Supports Tandy graphics, EGA, MCGA, & VGA; supports Roland MT-32/LAPC-1, Ad-Lib, Sound Blaster, PS/1 & Game Blaster sound cards

Warping with Sierra

Stellar 7 from Dynamix Inc. (a new division of Sierra On-Line) and the innovative King's Quest 5 get our critical analysis.

Two of the latest games to be released by Sierra On-Line offer quite different action warping the players from the past to the future. The long awaited King's Quest 5 heralds the move towards more lavish productions and consequently the use of high-density disks to contain it all. Such is the advance that to put the game on standard

5.25" disks would have required a total of no less than 50 disks altogether!

Shoot-em-ups have not generally been a part of Sierra's product range so far, but with the merger of Dynamix last year, a new style of high quality games is bound to emerge. The first release from the marriage is a futuristic space war game - Stellar 7.

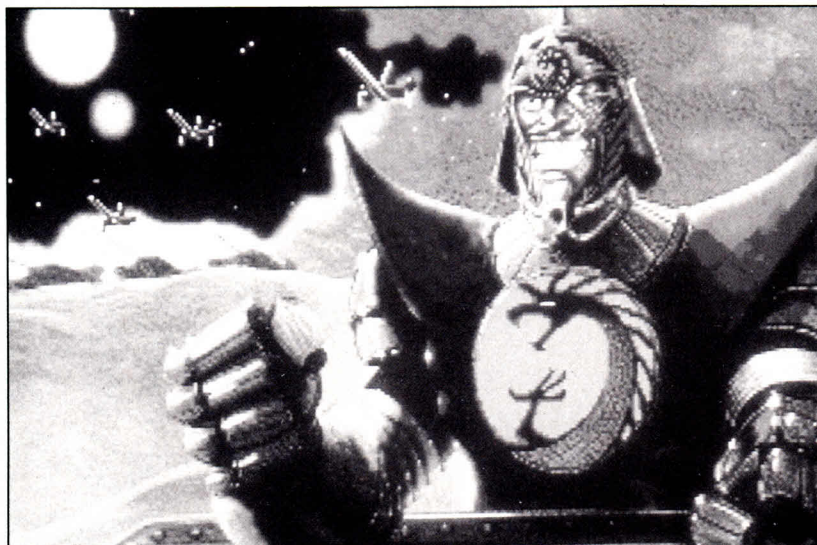
STELLAR 7

The plot may sound a little corny - you're the only one who can save the Earth from annihilation - but that is where the clichés end. Stellar 7 was originally released way back in 1983 and achieved a cult following in being one of the first 3-D games for home computers. This new version brings the game right up to date and takes full advantage of the latest technology and wizardry modern home computers can provide. Naturally, the game is best seen in VGA graphics with 256 colours and best demonstrates the hand painting and digitised graphics. There is an original stereo soundtrack including 15 songs and amazing sound effects to be used through a sound card. Even digitised voice is supplied for Tandy 1000TL, SL and Sound Blaster cards.

So where do you fit into the plot? Well, Gir Draxxon, the Supreme Overlord of the evil Arcturan Empire, is preparing to launch a massive attack on Earth. You are Commander of the Terran forces and must reach the Arcturan star system to destroy Draxxon before he releases his forces. You are placed in control of a sophisticated fighting machine called a Raven and must battle your way through seven different star systems before the final conflict with Arcturus, Draxxon's flagship. It's always easy to say but playing the game is a totally different kettle of fish.

The Raven is essentially a large tank-shaped skimmer, capable of gliding over the surface at a height of half a metre. It is equipped with the standard shields, cannon and radar, and has a long-range scanning facility providing easier identification of distant objects.

All the action takes place from within the cockpit of the Raven and this is what you get to see on the screen. A large proportion of the display represents a window

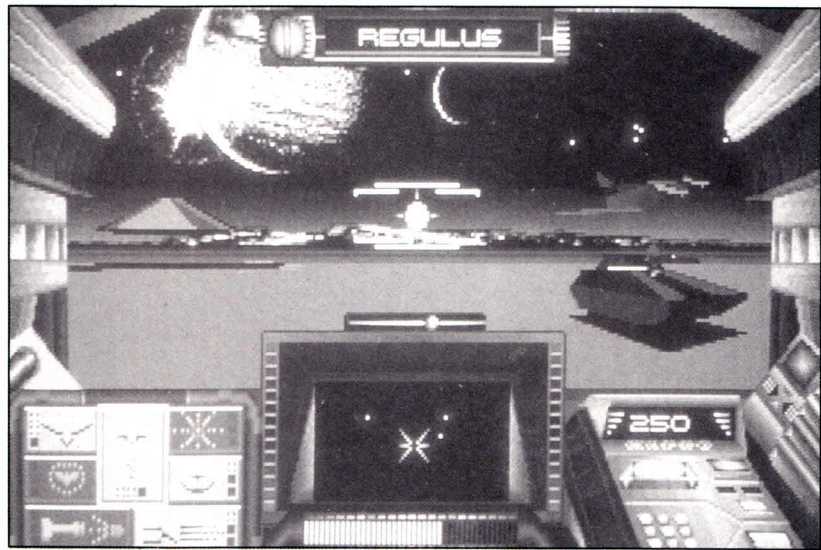


into the landscape in front of the vehicle at the centre of which is a targeting sight. Beneath the window is the radar screen which gives warning of hostile craft and their relative positions to the Raven. On the left of the radar is a 'power module bank' indicator and to the right a 'cannon ready' indicator and game score.

The first time you play Stellar 7, no doubt you will want to set up your game preferences then see the briefing. The latter takes you through a catalogue of enemy vehicles likely to be encountered with an insight into their destructive capabilities. Hit the 'begin' button on the main menu and the battle commences.

The natural tendency when picking off the enemy is to stay in one spot and spin round blasting everything which appears on the horizon or nearer. This is not a very good idea as the programmers of Stellar 7 seem to have put a bit of intelligence into the opposition and you'll soon be wiped off the planet. A 'search and destroy' tactic is required using the on-screen radar system. Most of the enemy vehicles are moving (on the ground or in the air) so your aim has to take this into account.

At the beginning of the game,



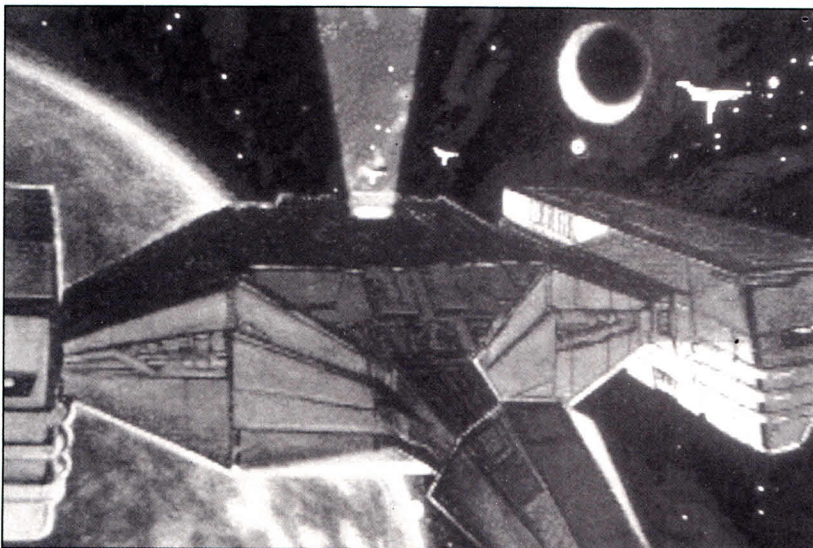
the 'power modules' mentioned earlier are empty. By removing three enemy vehicles of the same type, a power module is released. For example, destroying three skimmers provides 'Jump Thrusters', certainly important for removing the first level end-of-game guardian (although with enough dodging tactics you can defeat him without it). Power modules to pick up include a Super Cannon with twice as much fire power as the standard issue, a Cat's Eye with which to 'see' vehicles which have become invisible through their cloaking devices, an Eel Shield for ram-

ming the opposition and an RC Bomb which, when released, lies dormant until a nearby vehicle is detected, then - Bang!

The first level is hard until you get used to the idea of shooting at moving targets. Having cleared the area of enemy vehicles, an enormous metallic guardian emerges from a ship and strides menacingly towards you. It took a while to work out how to deal with him. And that's the secret of the game - playing as much as you can to work out the weaknesses of the opposition while still keeping yourself in one piece. There are seven levels of mayhem to struggle with, each getting harder as more vehicles (and more intelligent too) start to pour on the heat. I only managed to get to level four and it took a while to achieve even that.

Stellar 7 is superbly produced, full of continuous action and worth every penny.

Specifications: Requires 640k MS-DOS compatibles, Tandy, TX, SL, TL. Supports 256 colours VGA or MCGA, 16 colours EGA or Tandy, 4 colours CGA. Also supports Roland MT-32, LAPC-1, AdLib and Sound Blaster music synthesisers. Supplied with 4 x 5.25" and 2 x 3.5" low density disks.





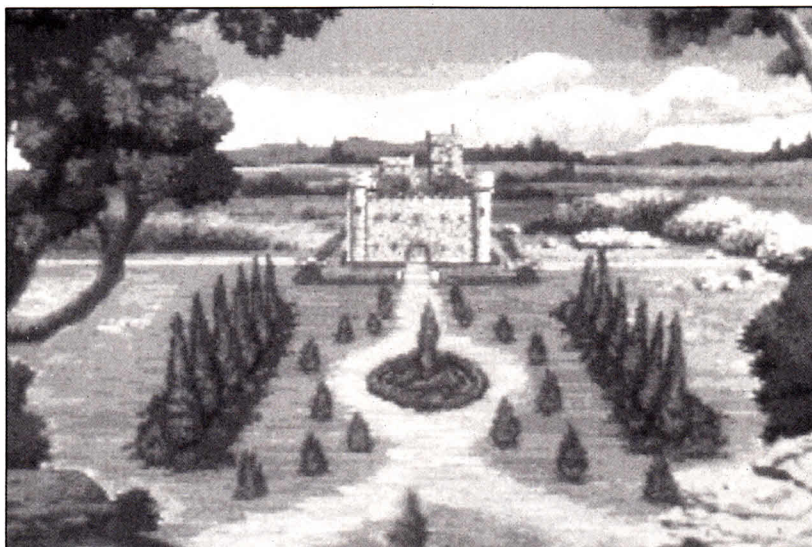
KING'S QUEST 5

If you think that KQ5 is more of the same you need to think again. Sure, it picks up the story line from KQ4 where Princess Rosella journeyed to Tamir and now, a year later, King Graham's health has been fully restored and everything is hunky dory in the Kingdom of Daventry. However, the opening screen and music of KQ5 is where you will immediately notice that the style has changed considerably, and you'll know that you are in for something very different.

Mordack, a wizard with even more power than previous villains, has hatched a plan to capture Castle Daventry and all of its royal occupants. While Graham is away, the evil wizard conjures up a fierce whirlwind which uproots the entire castle and whisks it away to an unknown destination. Graham returns only to discover the loss and is then told by a helpful owl, called Cedric, how it came to happen. The two

of them set off to begin another quest, this time to rescue King Graham's family and restore the castle. The whole of this introduction is superbly animated with digitised backdrops and characters, seeding the imagination with expectations of many things to come.

Of course, there is a difference in picture quality between the EGA (16 colours) and VGA (256 colours), so if ever an excuse was needed to change to VGA this could be one of them. Not that playing on EGA isn't just as much fun, the fact is that some objects are a little less distinguishable and



could be missed if you are not looking hard enough.

But the major change in my mind from the previous KQ games is the innovative "intuitive interface" with "intelligent pathing". Vestehen-sie? I doubt it, so let me explain. Gone is the need to type in text to ask every character the same question to distil clues; text to examine everything on screen; and best of all to try and work out the correct words to use to get something to happen. Not only does the intuitive interface make this adventure less frustrating to play by cutting out redundant and therefore time-wasting questions and responses, it also allows younger children to play the game as typing and spelling abilities no longer come into play (except when saving a game). The old text entry methods are now replaced with a 'point and click' method using the mouse (or joystick or keyboard) and a set of icons. These cover all the possibilities of walking, talking, looking, performing an action and can show the object currently in use. The icon system (they are all hidden at the top of the screen so you always get to see a full picture) also allows for saving, restoring, pausing etc.

The currently selected icon is always on show at the mouse/joystick-arrow position and the available selection can be rotated through by either clicking a mouse button or going to the top of the screen to the icon bar. Now this may all sound a little complicated and at first it was strange to handle. But within just five minutes I was clicking all over



the place wondering why nobody had thought of this before. (In fact it has been used before but without this level of sophistication.) So, to examine a tree, one merely clicks one of the mouse buttons until an 'eye' is showing then move the eye to the tree and click with another button. The program will either respond with a dialogue box or display a large red cross signifying that it is pointless to look at this object. To open a chest, just select the 'hand' icon and then move it to the chest, click and get the response. All of this is so much easier than having to type in "EXAMINE TREE" or "EXAMINE CHEST", "OPEN CHEST" etc.

The "intelligent pathing" is another help to the player. It's a clever system which works out the most efficient way for a character to travel from one point to another on the screen without the player having to divert it around obstacles. Clearly, the computer has to do a bit of thinking here and it is more noticeable on an 8MHz machine than it would be on a 12MHz or faster. In fact, using the slower machine sometimes gives the impression of a 'lock-up' in certain screens while the computer ponders the problem. Pressing a mouse button during the think-

ing period only serves to slow things even more as the program detects a change of mind. Actions under program control (ie. no user intervention is necessary or allowed especially in the animated sequences) cause an hour glass icon to be displayed and perhaps Sierra should consider using this when KQ5 is in 'thinking mode'. Slower machine users are wise to adjust the speed parameter to maximum by accessing the game attribute icon. KQ5 is really meant for 8MHz computers or above, so if yours is slower it's time for a change.

King Graham has his fair share of problems to solve in a game which is essentially split into the following four sections - a) in and around the town; b) in the mountains; c) around the sea; and d) at the evil wizard's castle. Many of the puzzles are quite different from previous Sierra offerings yet hardened Sierra fans will find a few predictable. The game tends to ease you in with a few simple 'finds' but then broadens as the playing area increases along with the puzzles. I believe most adults will find KQ5 a challenge (as with all Sierra adventures) but not overly difficult (except perhaps the last section). Youngsters will need help in some places, the

amount of assistance depending upon their age. Not too much emphasis can be placed on the advice to look at absolutely everything and save often. As with other adventure games, there is a rough sequence to solving different puzzles, such that some cannot be resolved until others are completed. You'll even find the obligatory "Sierra" desert which so often features, and 'harpies' whose banter is reminiscent of the fairies in Quest for Glory 1 (Hero's Quest 1).

The attention to detail in KQ5 is first class. An example of this can be found when moving King David from the background to the foreground. The fact that he gets larger as he moves nearer adds to the realism of the animation. It would be remiss of me not to mention the clever sound effects and atmospheric music (best heard through a sound card) contributed by Mark Seibert and Ken Allen. The game is not copy protected, but there are in-game codes to decipher that refer to the manual - without the manual you're stuck!

You may have gathered by now that there is little I can find to fault the game. Once again Sierra have produced a game for all the family which defies major criticism. Technological advances help of course and whilst there are three versions of KQ5 currently available, a fourth CD-ROM version with digitised speech, enhanced music and sound is scheduled for release within the next few months. Where will it all end?

Specifications: Requires 640k; MS-DOS compatibles, Tandy, IBM; VGA or MCGA graphics; hard disk or dual drive; supports Roland MT-32/LAPC-1, Ad-Lib, Sound Blaster & Game Blaster; three available packs - VGA version (256 colours) with 1.4mb x 3.5" or 1.2mb x 5.25" disks; EGA version (16 colours) with 760k x 3.5" disks. ■

Introducing DOS - 3

Shane Kelly and Tony Blakemore give you Part Three of their continuing series on the fundamentals of MS-DOS.

With the technical side of your equipment covered, Part Three now begins to explore the basics of the structure of MS-DOS, in particular the significance of files and directories.

DOS THE FILE MANAGER

DOS is a file manager. What is a file? A file is simply a collection of characters grouped together under one name. Those of you who have explored some of the disks that came with your machines will have used the DIR command. This usually gives you a vast list of names scrolling on your screen at a rate that is too difficult to read. Each one of those names represents a file.

FILE TYPES

There are all sorts of files that you can have. A program file instructs the computer to do something. A data file may contain some output from a program, or some input into a program. Other types of data files may contain pictures

that you see on the screen. Files may also contain data about a particular program. This data may tell the program that your computer has a colour screen and a printer or maybe some other type of I/O devices.

There are some important differences in the aforementioned file types. One is a PROGRAM file and the others are DATA files. A program file contains a list of instructions for the computer to execute, whilst a data file contains information that the programs work with.

FILE EXTENSIONS

Do we need to be aware of the difference between these files? We certainly do! One main difference is the naming convention used to differentiate between them. Executable files that run from DOS have extensions to their filename of EXE, COM or BAT. The extensions are basically this: filenames consist of two parts - part one is the name of the file and part two is the extension. If

you do a DIR of your DOS disk you will see that files are listed in the following manner: FORMAT COM DISKCOPY COM etc. The part on the left before the space is the filename and the part after the space is the extension. Note that the extension is only 3 characters long, while the filename is a maximum of 8 characters long, but may be less.

Why are extensions important? Because they help DOS and you differentiate between types of files. So, a file with an EXE or COM or BAT extension can be executed by DOS without any further ado. Note that DOS does not require you to specify the extension of a file when you type the filename at the A:> symbol on your screen. DOS assumes that you want to execute a program, and since program files have an extension of EXE, COM or BAT, it goes looking for a file name with the same first part as you have specified and one or the other of these extensions. That might not seem significant right now, but you will be thankful for it later, after typing in a program name for the umpteenth time.

MANAGING FILES

So, how does DOS manage files? On each diskette that you use a certain area of the disk is put aside to contain the names of the files that you (or your program) create. This is known as the directory area, or just directory. In this special area are the names of your programs along with information that tells DOS the location of the file on the disk. It is like the list of streets in a street directory. If you look at a street directory you will see that each street is uniquely identified by a map reference - it is the same with files on your disk. Each file is located in one or more sectors on your disk. A sector is nothing more than a standard size piece of the disk set aside when you format

your disk. Each sector is uniquely identified with a sector number and a track number. A track is simply a group of sectors set at equal distances from the edge of a disk.

Lets take a breather there and go back for a minute. DOS is a file manager. A file is a collection of characters stored under one name usually on disc. A file can be a program file or a data file. It has a unique identifier, called its filename, which consists of two parts - the filename and an extension. Note that a file name can refer to either the first part alone or to both the first and second parts of the filename together.

DIRECTORIES

DOS "knows" where the file is on the disc by the directory entry for that file. The directory contains information enabling DOS to find the sectors that contain the characters that make up that particular file. Sectors are laid down in tracks, which are simply concentric circles laid down on the disc when it is formatted.

From this you will be able to infer that to use a disk it must first be formatted. This is another function that DOS supplies for us. If you look on your DOS disc you will find a program called FORMAT.COM. This is the program that does all the work. It asks you to place a diskette in the

chosen disc drive and then proceeds to write the blank sector and track information onto the disk. That is why you can't use a disk straight from the packet. They are not formatted with the information DOS requires to find its way about the disk. To enable DOS to use the disk invisible magnetic grooves need to be written onto the disk's surface. FORMAT.COM does all of this for us. ■

Subdirectories enable you to establish a network of completely separate files, accessible only via a parent directory. The structure of these subdirectories will form the basis of next month's article.

WORDFIND ANSWER

Xybots

Jinxter

Bloodwych

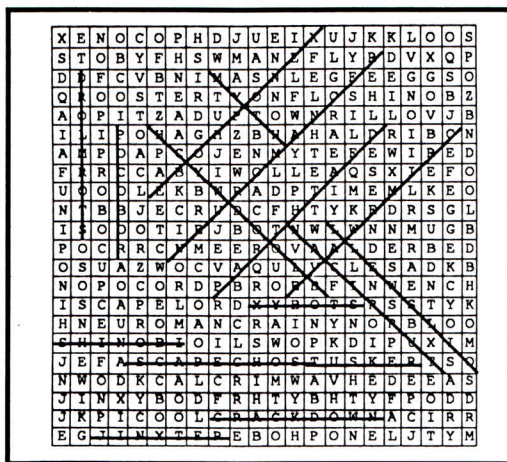
Crackdown

Crimewave

Deathtrap

Turrigan

Myth



Xenophobe

Neuromancer

Oilswell

Shinobi

Scapeghost

Stormlord

Tusker

Robocop

The answer to last month's Wordfind puzzle.

INSTRUCTION

High Density

The questions you've always wanted to ask about High density & Double density diskettes.

Many computer users seem to be confused about high density floppy disks and their drives. This article uses a 'question and answer' format to tell the truth about the compatibility of high density and 'normal' double density diskettes, and presents a method of using high density drives on AT and PS/2 (Model 50 upward) systems for effective data interchange with systems containing only low density drives.

1. What is the difference between a 5.25" high density (1.2MB) disk drive and a 5.25" double sided, double density (360KB) disk drive?

A 360KB disk drive puts 40 tracks of information onto the diskette at a track density of 48 tracks per inch (tpi). Each track contains 9 sectors of 512 bytes each. Since both sides of the diskette are used, the total capacity of the diskette is $40 \text{ (tracks)} \times 2 \text{ (sides)} \times 9 \text{ (sectors)} \times 512 = 368,640$ bytes. The disc rotates at 5 revolutions per second (300 rpm) and the data transfer speed, measured between the head and the controller electronics, is 250,000 bits per second.

Conversely, a 1.2MB drive has two modes. In its native (high density) mode, it writes 80 tracks at a track density of 96 tpi. Each track contains 15 sectors of 512 bytes each. The total capacity is therefore $80 \times 2 \times 15 \times 512 = 1,228,800$ bytes. The disk rotates 6 times a second (360 rpm) and the data transfer speed is 500,000 bits per second.

In its compatible (double density) mode, the 1.2MB drive rotates at 300 rpm and uses a bit rate of 250,000 per second, just like the 360KB drive. Also, it 'double steps', so that it actually positions the head over the second track when asked to read the first, and so on. This gives the impression of being a 48 tpi drive, just like a 'real' 360KB drive. However, the width of the head is still very much less than that of a 'real' 360KB drive. This has important implications for data transfer between the drive types; see below.

2. What is the difference between 5.25" high density diskettes and 5.25" double density diskettes?

Apparently, very little. The only strikingly obvious difference is that high density diskettes are not made with a hub reinforcing ring, whereas most double density diskettes do have a hub reinforcing ring. The reason is that, whilst the reinforcing ring helps to make the diskette more resistant to accidental damage during insertion, it also tends to cause a few inaccuracies in location, which do not matter when used at 48 tpi but can cause data errors when used at 96 tpi.

However, there is a much more fundamental difference. Due to the higher bit density of high density drives (i.e. the faster data transfer rate), it was found necessary to use a lower write current in the drive electronics, and a higher coercivity coating on the diskettes themselves. This difference is impossible to see, but does make it impossible to format high density diskettes in a double density drive - the DD drive write current is insufficient to cause a HD diskette to be recorded properly.

3. Which 5.25" diskettes should I use?

If you have double density drives, you must use double density diskettes. There is no point in paying a premium price for 96 tpi double density diskettes (sometimes referred to as "Quad Density" or QD diskettes); IBM PC's and compatibles have never used this format. High density diskettes will NOT WORK for the reason described above.

If you have high density drives, and wish to use them in high density mode, high density diskettes must be used. Ordinary double or quad density diskettes will probably fail to format properly - they may appear to format, but with a very high percentage of bad sectors - but will be very unreliable in the long term due to the low write current being insufficient to record the low sensitivity surface correctly.

High density diskettes should not be double density formatted (to 360KB). This combination causes twice the recommended write current to be

used. The recording is then far too strong for the sensitive surface; reformatting may not be possible since the initial information is, so to speak, 'burnt on' to the diskette surface too strongly to be overwritten by the drive electronics. Diskettes accidentally 'damaged' in this way may be 'repaired' by the use of a bulk eraser.

Ordinary double density diskettes may be used in high density drives, but they must be formatted to 360KB, using the /4 switch on the FORMAT command.

4. I need to transfer data between systems fitted with 5.25" drives, but my AT clone has a high density drive whilst my XT has double density. How can I do this?

To read data written by the XT on the AT, simply put the diskette into the drive. The high-density drive on the AT is smart enough to recognise a double density formatted diskette automatically, and to switch into double density mode.

The diskette should not be written to by the AT system. If written to on the high density drive, its narrow head will leave unerased part of the data originally written by the XT; although the diskette will continue to work perfectly, so far as the AT can tell, sectors written by the AT (including the important file allocation table) will become unreadable on the XT system.

To read data written by the AT on the XT, it is necessary to follow these steps:

a. Take a brand new, double density diskette and format it to 360KB on the AT system (using the /4 switch with the FORMAT command). Using a diskette which has been written to using a normal double density drive will leave unerased bits of each track, as described above. In order to be readable on the XT system after writing on the AT system, the diskette must be completely blank before formatting on the high density drive. Diskettes which have ever been written to with a normal 360KB drive will be usable only if bulk erased.

b. Use normal software to copy the file(s) to the newly formatted diskette.

c. The XT system should then read the diskette reliably. However, the XT should not be allowed to write on the diskette. If the diskette is used 'read only' in the XT system, its files may later be updated on the AT and re-transferred without need to bulk erase or use a fresh diskette.

It is strongly recommended that 'transfer diskettes' (in both directions) be labelled as such, and that inadvertent writing is prevented by use of write protect tabs when they are to be read by any system on which they were not written.

5. What is the difference between a 3.5" high density (1.44MB) disk drive and a 3.5" double density (720KB) disk drive?

Both disc drives put down 80 tracks at a track density of 135 tpi. Also, unlike 5.25" drives, both normal and high density drives rotate at 300 rpm. The difference is that, like 5.25" drives, the double density transfer rate is 250,000 bits per second, whilst high density uses 500,000 bits per second. Consequently, whilst double density diskettes have nine 512 byte sectors per track, just like the 5.25" double density format, high density diskettes have eighteen 512 byte sectors per track.

6. What is the difference between a 3.5" high density diskette and a 3.5" double density diskette?

Looking at the diskette from the 'label' side, the high density diskette has a second small square hole at the top left hand corner (as well as the other hole, at the top right corner, which has a sliding clip used to write protect the diskette). The presence of this second hole is required by most (but not all) high density drives to enable high density operation - if the hole is not there, the drive will refuse to format at all in high density mode. It will instead give the usual 'Invalid media' error message if this is attempted.

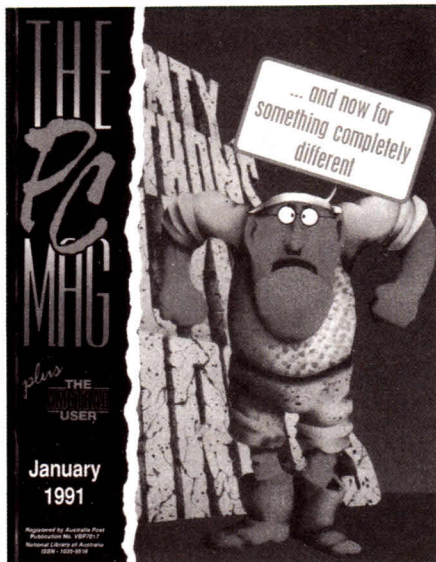
Also, like the 5.25" diskettes, the 3.5" high density mode uses a reduced write current and a special high coercivity coating. Because of the difference in magnetic characteristics, cutting the extra hole is not sufficient to convert a double density diskette to a high density. It may, or more likely may not, appear to format correctly at high density, but is unlikely to retain data properly.

7. Which 3.5" diskettes should I use?

If you have double density (720KB) drives, you must use double density diskettes. High density diskettes are expensive, and will NOT WORK for the reason described above.

If you have high density (1.44MB) drives, you may use either double density diskettes or high density diskettes. However, you must remember that double density diskettes may be formatted to 720KB only (use the /N:9 qualifier with FORMAT). Conversely, high density diskettes should be formatted to 1.44MB only; formatting them to 720KB merely results in the drive electronics switching from low to normal write current, and this may 'overload' the sensitive high density coating, making it impossible to write data to the diskette again (with bulk erasure).

OUR MOST HUMBLE APOLOGIES



All over Australia they're worried about
The January PC Mag selling out -
They go to the stores
but find when they're there
That the stocks have been sold
and the shelves are bare -
But if you missed out, well,
there's no need to worry,
We're replenishing stocks
in a great deal of hurry
In order to deal
with the crisis at hand
And satisfy the onslaught
of public demand.

Hopefully, by the time you read this page there will be more copies of the January issue of The PC Mag available to those unfortunate enough to have missed out. We are only sorry that we did not anticipate the demand and apologise for the inconvenience and disappointment that this may have caused.

Editor.

8. I have a laptop PC fitted with a 720KB drive and a PS/2 Model 50 fitted with a 1.44MB drive. How can I transfer data between them?

Unlike the 5.25" user, you should have no problems. The PS/2 drive should automatically recognise the portable's double density diskettes and read them normally. Also, since the track and head width of the two varieties of 3.5" drive are the same, it should be possible to write diskettes on both systems without affecting the ability of either system to read the data. If this does not work reliably, the alignment of the drives may need attention.

Remember, when formatting diskettes on the PS/2 which you will want to read on the portable, use double density diskettes and to format to 720KB using the /N:9 remember to switch on the FORMAT command.

9. Some people claim that high density diskettes are unreliable. Packing more data into the same space sounds dodgy; are high density drives and diskettes really reliable?

Yes.

Most apparent unreliability is due to failure to use the different types of diskette as described above; in particular, attempting high density formats on double density diskettes, or (in the case of 5.25" systems) allowing both double density and high density drives to write the same diskette.

It is true that high density diskettes, having a more sensitive coating, are more easily affected by magnetic interference than standard diskettes. So long as this is remembered, and adequate precautions are taken, this need not be a problem.

Note that diskettes should be kept well away from display screens, especially colour monitors. These tend to have a 'degaussing coil' built into the surroundings of the tube, coplanar with the front surface of the display, which creates an intense magnetic field for a short while when the power is switched on. The purpose of the coil is to remove residual magnetism, which might otherwise cause distortion, from the display surface. Its effect on magnetic recording media should therefore be easy to imagine. Whilst the odd jolt might appear to do little damage, the effects are unfortunately cumulative and irreversible.

Diskettes in disk drives (protected by the metal of the drive or the case) should be quite safe, so there's no need to worry even if the drive is fairly close to the screen. In any other situation, though, a minimum distance of 50 cm (20") from the display, or any other system producing strong magnetic fields, is recommended.

A Cut Above the Rest

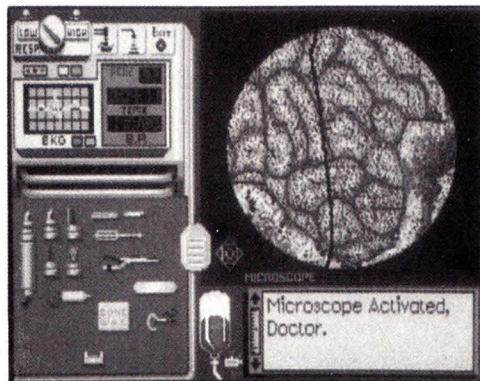
We put the spotlight on the neurosurgical Life and Death 2 and addictively cute Lemmings - two new and unusual games from Mindscape.

Now and again, a game will come along which immediately captures the imagination of the software buying public. It is somewhat unusual therefore that two such games should arrive around the same time. Mindscape International is an aggressive software supplier which is fast becoming recognised as an importer of quality products. We have them to thank for the bonus of two quite different yet sure-fire winners.

LIFE AND DEATH 2

If you are familiar with Life and Death 1 you will be amazed with its sequel sub-titled "The Brain", particularly with the graphics. If you know nothing about the latest medical game written by The Software Toolworks, read on.

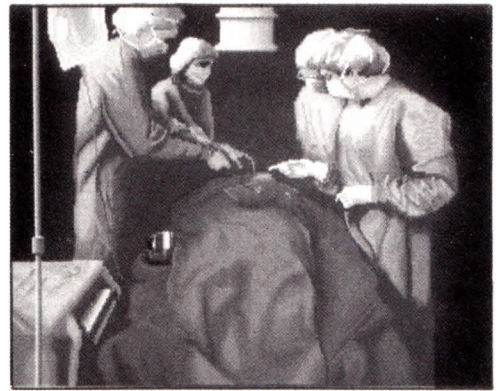
Like the original L&D1, the game takes place in Toolworks General Hospital. Your experience and skills have improved since joining the hospital as a general surgeon (in L&D1) such that you



can now join the team of resident Neurosurgeons. This means that you now specialise in disorders or otherwise of the brain. But once again you must start at the beginning as a first-year neurosurgeon, for neurological surgery is far more intricate, risky and demanding than your average general surgery.

The Neurosurgery Wing of the hospital consists of a number of rooms housing scanners and other diagnostic equipment, a morgue (to

study past mistakes perhaps), patient's rooms, a canteen, offices, the operating theatre, and the all important classroom. Access to each room is simply a case of pointing with a mouse then clicking. The game will also



work with a joystick or the keyboard but you will find a mouse more convenient.

The game will generally start with a visit to the receptionist to sign in and get the latest information or help if you need it. After a general trip around the wing to familiarise yourself with the facilities available (and get to know where everything is) you'll be presented with your first patient. Unless you previously set the game parameters to more difficult levels - Intermediate, Advanced or the almost impossible 'Nightmare Mode' - you will start as a novice. A patient chart will give you scant details of the circumstances prior to hospitalisation and will also keep the record



REVIEW

of any examination you are likely to perform.

Physical examinations take place on the head, torso or legs using specific tests to determine what might be wrong with the patient. It may even be necessary to perform a CAT or MRI scan, a skull X-ray or angiogram to help

surgery is prescribed, the operating theatre is the next location where you enter a whole new world of all too realistic brain surgery. Your team (selectable if you wish) will assist, issuing helpful comments if necessary.

There is a definite procedure to removing the scalp to expose the brain. Get it wrong and its curtains for both you and the patient. In fact, you daren't put a foot (or

normal shoot-em-up games. Quite frankly, we all found it just as nerve racking in a race against time.

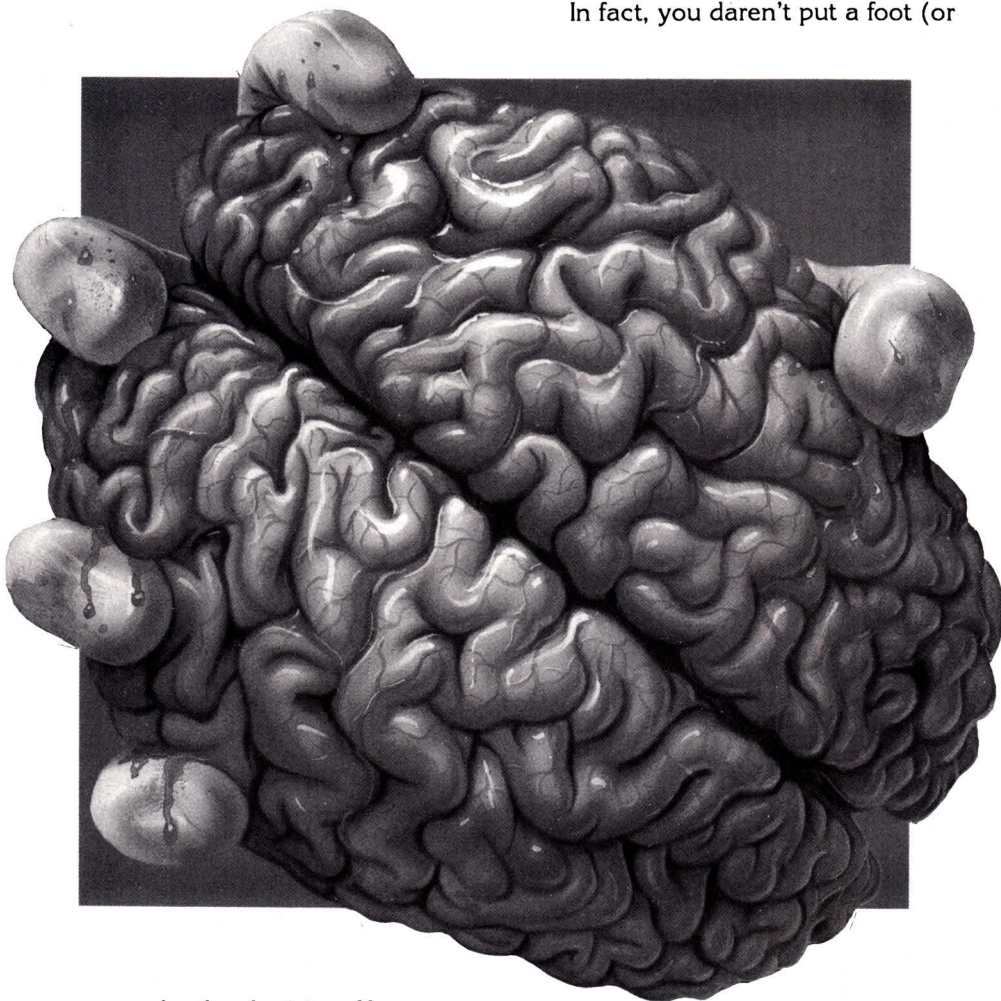
What you have got to remember though is that L&D2 is only a game, although it goes into so much detail you can't but help to learn something from it. Patients of different shapes and sizes and an equal array of symptoms push your diagnosis, examination and very often surgical skills to the limit. The graphics are superb in VGA and coupled with the digital sounds you may require someone to mop your brow as you skillfully move your mouse around screen.

A word on the installation of the program. It requires 640k and an EGA, VGA or Tandy graphics adapter and will run on IBM or compatible PCs, XTs, ATs, most PS/2s or Tandy PCs (except Tandy 2000s). It is suggested though that the game be run on an AT of 12MHz or faster. If you've got more than 640k, the game supports EMS or XMS expanded memory systems. Although a hard disk is not necessary, it is best run in this environment. All the graphics files are supplied in compressed format and can be unpacked automatically to the hard disk offering smoother on-screen action. The game also supports Ad-Lib, CMS SoundBlaster and RealSound.

Whilst L&D1 was effectively the first game to invade the medical field, L&D2 is such an improvement it must be treated as a separate game altogether. Its theme is quite unlike any other game on the market and, despite what some will see as just a gory exploitation, it provides an insight into the intricacies and pressure real-life brain surgeons must go through. It's a thoroughly absorbing game.

LEMMINGS

The lemming is a small rodent -



make the decision. However, although you may be armed with all the facts, the chances are that you will have to visit the classroom to get confirmation of your diagnosis if it is not patently clear from the medical manual you carry around.

The final step is to prescribe treatment. If you get it entirely wrong you are summoned to the classroom for a dressing down. If

rather a hand) wrong for fear of losing your patient. You'll find your heart thumping more than the anaesthetised 'victim'. If you're squeamish you may not like the idea of using a scalpel on a shaved head, drilling a hole in the bone or poking about in the brain. Many will find it fascinating and quite a departure from the

similar to a vole in appearance - that lives in the Arctic tundra. Although no more than 150mm in length, it is very hardy and lives quite happily in severe conditions. Every three or four years the lemming population explodes leading to mass migrations in the hunt for food. It is during the hectic hunt that many lemmings die by simply running headlong into water and drowning. Contrary to popular belief, they don't commit suicide.

The cute little characters are the stars in the game named after them, developed by DMA Design whose previous successes include *Menace* and *Blood Money*. The design team spent many months developing the concept and gameplay of a game "so incredibly playable that even Granny would soon want to join in the fun."

The aim of the game is to help as many of these furry creatures as possible avoid an untimely end. The game begins with a trap door opening through which over 100 lemmings spill into the screen.

Now you may think that you are tampering with the course of nature by helping the furry rodents but, rest assured, there is no way you can possibly save all of them. Providing you can guide a predetermined percentage through each screen to the final screen you have done well. By the way, there are over 160 levels of obstacles to overcome so it's no mean task. Couple that with a time limit and the adrenaline pours.

Using a mouse, you can click on a particular activity icon then on a chosen lemming to perform the selected task. By getting the lemmings to build bridges, dig tunnels (in one of three directions), parachute from great heights, float or climb cliffs, they can avoid a lifetime of mindless wandering. The only ones who

end up with the short end of the stick are 'Blockers' who become lemming barriers to prevent their buddies from coming to harm. Unfortunately the only way to get rid of a Blocker is to blow it up!

You can choose which level you wish to play. The 'Fun' level is aimed at people not too adept at

excellent gameplay, originality and high addictiveness (leaving you with a feeling of wanting 'just one more go'), it is certain to be a huge hit with gamers of all levels of proficiency, and in particular families where there are bound to be in-house contests.

The PC version is for a single



playing computer games, while at the other end of the scale is the 'Mayhem' level which will test even the most proficient game player.

There is no question that *Lemmings* is quite unique. Nor can there be any doubt that the game will cause a great deal of interest when it is released. With a combination of great graphics,

player and provides the option to use a joystick or the keyboard if a mouse is not used. At the time of writing the recommended retail price had been announced at \$69.95 and a 5.25" version scheduled for release in April. By then we should know whether a 3.5" version will be available and what the environment specifications are. ■

Maximizing Contacts

If you have a busy schedule, need to manage, collect and compile client information, Maximizer could keep you ahead.

Richmond Technologies and Software Inc. is the Canadian company responsible for developing Maximizer, essentially a sophisticated Sales and Contact Management System. There are currently 35,000 users world wide, and this number is due to expand now that Infact Pty Ltd. has become the distributor in Australia and New Zealand.

To many, a 'Contact Management System' suggests that it would be of particular interest to sales people, if only because that occupation requires contacting people. But that view is rather narrow. A person who has appointments or meetings, sets goals, defines projects and follows up, coordinates with other people and so on would also have an interest in such a system. So the area of relevance is quite broad ranging from a private operator through to a company mogul. It is quite suitable for a large government office with 3,000 staff members, medium sized companies or a self-employed person.

OVERVIEW

Maximizer is a computerised card file - a database - but with some very powerful features. Naturally it holds a client list in alphabetic order with the usual associated information such as address, telephone number and so on. But below the standard data is a plethora of information making it a truly versatile tool.

It can track every client and every phone call you make. It provides almost instant access to when you last spoke to a person, the subject matter, their affiliation, title, co-workers, income, even hobbies, birthdays and any other information you need to remember about a person or company. It also allows grouping and classification of clients and contacts in countless ways. Naturally it is up to the user to decide which information is necessary to record in order to build up the store of information, and most importantly, keep it updated.

It is fair to say that Maximizer ventures further than the usual list

compiler in terms of features, yet its operation within a 'window' type environment keeps it logical and easy to use. To use a bit of computer jargon, Maximizer is 'intuitive' which put simply means that it can be used almost straight away without too much reference to the manual or resident 'help' facilities. Should you need to refer to the latter, you'll find them quite comprehensive and only a function key press away.

Maximizer is also supplied with MaxMerge, a utility to extract from, combine with or update databases. But more on this later.

THE SKY'S THE LIMIT

The first question to ask is 'How many names and addresses can the system hold?' The answer is that it is only limited by the size of your hard disk so whether you have 9 or 99,000 records to store, the program can cope as long as your hard disk can!

You can record all letters, memos, phone calls and your own notes in full or shortened form in a special note section within each record. An 'auto-note log' feature makes sure that you know what you have done, when and how. Standard form letters or one-off correspondence can be spell-checked against a 120,000 word dictionary, albeit American, and the facility exists to add or delete to the store of words.

You can classify the companies and people on file in any manner you wish - in fact a client can be classified in 4 billion ways. Being realistic though, sensible classification can make specific selection later on much more simple, quicker and meaningful. Whilst Maximizer's powerful description logic would, in the main, be used at the main client level, the classification feature applies equally to contacts within the client record. This allows the user to extract, for example, all the accountants on file.

A powerful search feature allows retrieval of any information, likewise sorting can be carried out on any or all fields. You can even go as far as searching for a single word to unearth an elusive note.

Maximizer contains a word processor with all of the functions you would expect to find in most other packages. This can be used for one-off letters or as a mail merge document from the name and address file. You can also print labels or envelopes.

If you rely heavily on the phone, Maximizer's autodial (you need a modem) and telemarketing features would be useful. The system will generate a list of people to call based upon your selection parameters and, while making the calls, allow updates to be performed or previous information to be recalled along with automatic time and date stamping of the receiver's record. To get you really organised, a scheduler feature will keep a reminder of call-backs or follow-ups and will automatically monitor up to six annually recurring dates (such as birthdays). And if you have any events or jobs to do which you simply must not forget, the program can be set to remind you daily and keep reminding you until it is done.

Naturally, you can print an almost limitless amount of information, and with a built-in reporting system you can print up to 10 columns of information across the page, sorted on one primary field and nine secondary fields.

MORE GOODIES

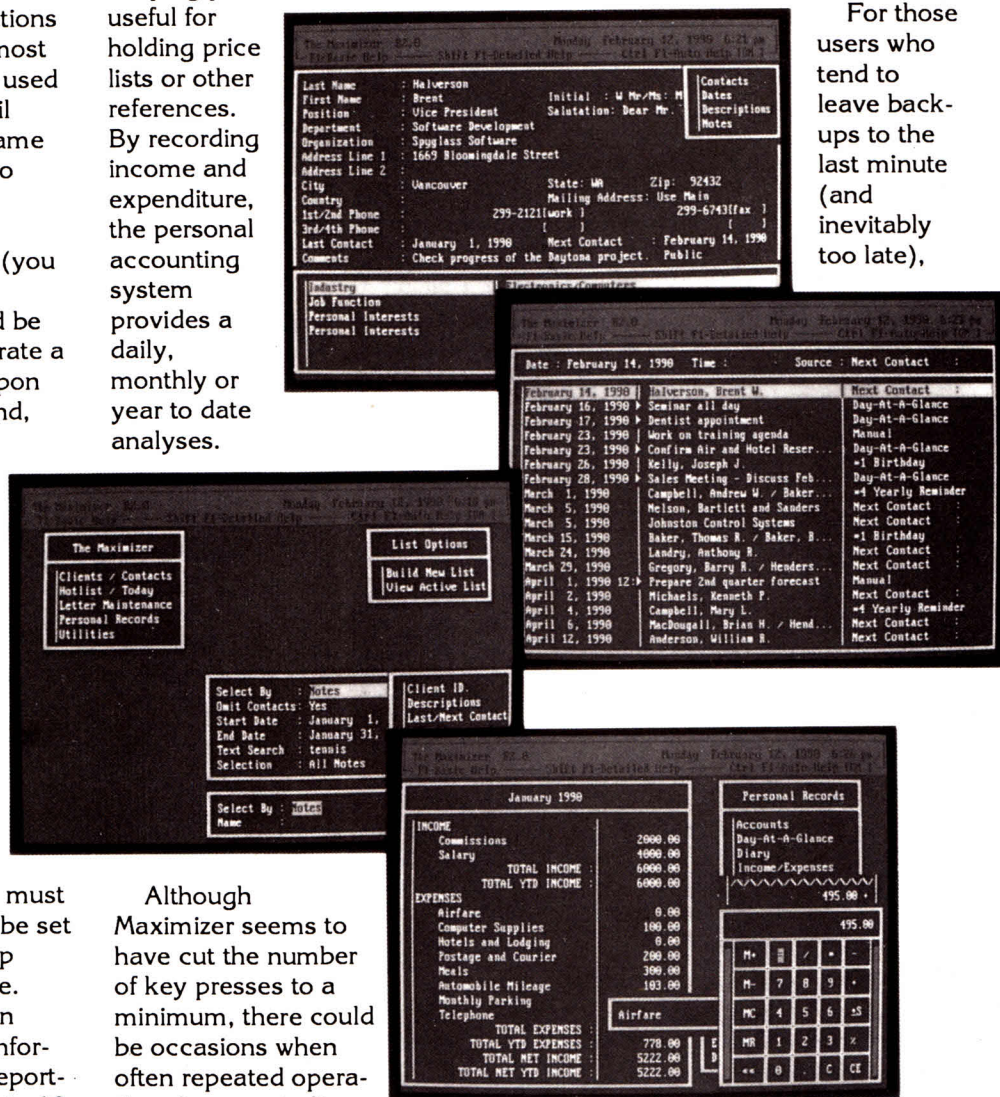
Coupled with all of the above is a fully featured business calculator, a section for personal expense accounts and income, a diary and a 'hot-key' pop-up calendar.

The calculator is invoked by pressing the F8 key and can be

expanded to perform complex business, financial and statistical calculations, all of which can be 'cut and pasted' into any note, diary or letter within the Maximizer system. The diary, apart from keeping personal information, is useful for holding price lists or other references. By recording income and expenditure, the personal accounting system provides a daily, monthly or year to date analyses.

query arises which needs you to switch to another? This often takes time which leads to frustration. Maximizer can handle this situation by being able to flip between databases with just a few keystrokes.

For those users who tend to leave back-ups to the last minute (and inevitably too late),



Although Maximizer seems to have cut the number of key presses to a minimum, there could be occasions when often repeated operations become tedious - enter the Macro capability. It is a facility which allows you to turn a sequence of keypresses into just one and store them as a file for later use. It also has the facility to store a 'start-of-day' macro which automatically runs when the program is loaded. Again, the number of Macros that it can hold is virtually limitless.

How many times have you been using a database when a

the system provides an automatic backup facility via a few keypresses. What would normally be contained on say, ten floppies, will come down to just two as the files are compressed during the back-up process.

Another useful feature is the ability of Maximizer to identify duplicates. They are more than likely to occur when more than one person is using the files, but

HARDWARE

could also happen if you import a 'new' list of clients. The program will search out any duplicates on a sorted column of data within a client list.

LAN VERSION

Of particular interest to larger companies is a LAN version of Maximizer containing full security features and allowing any number of users to access data at the same time. Security is assured by 'rights assignment' features which specify which users can view or change any of the basic functions. Standard form letters can be shared by users while still allowing private correspondence and any other personal information such as appointments, expense account or diary to be kept from prying eyes.

MAXMERGE

MaxMerge operates from within Maximizer and eliminates the need to import or export files (although this facility does exist for ASCII files in Maximizer), or to run a separate utility outside of the main program. It essentially creates a set of data files containing all the pertinent information on a client that can be used by another Maximizer system and/or merge the data into the the same or another database.

In practice, Maxmerge is a very useful utility. The user could, for example, extract selected clients from the main database onto a floppy to work away from the office. On completion of the job in hand, whether it be a visit or phone calls, amendments made to the files on the floppy are then merged back into the main database. MaxMerge is not limited to merging just client information. It can also handle anything else held on file including letters, macros, diary and 'hotlist' entries.

You don't get left wondering what the merge procedure has done either. Everything which had

been modified, inserted or deleted during the process is output on a Summary Report including the parameters chosen and the time. In addition, when a client record is updated (in the target database), a summary note is automatically posted to their note file identifying which fields have changed.

To avoid unauthorised merging, a valid user ID and password is necessary before the process can start. Lock-out parameters can also be invoked by a person in authority to deny updates to particular fields.

SUMMARY

Maximizer (with MaxMerge) is certainly an impressive piece of software. Providing it is set up and used properly, it should keep even the most disorganised person productive. Its operation has a logical flow making it very easy to pick up, and although it is full of functions it is still easy to use through its windowing system.

It seems flexible enough to cater for almost any circumstance in business and, perhaps most important, it is almost foolproof. There are a few Contact Management Systems around, and you would be foolish not to look at this one if you're in the market. If you are hesitant, get the demo version for just \$25 - it's refundable when you buy the full copy! ■

Specifications: Requires 512k of RAM and DOS 2.1 or higher (3.1 for LAN version which is Net Bios compatible). Also requires Hard Disk. Supplied in dual format (5.25" and 3.5" low density floppies).

Prices: Single User version \$550; LAN version \$1225; Demo version \$25.

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Spiderman /dual	79.95
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Stratego /3.5	69.95
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Rush 'n' Attack /5.25		19.95
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Space Games /3.5		15.95
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Home Accounts /5.25		89.95
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World Atlas /5.25	EV/640 89.95

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Create with Garfield (Gr 2 to 6) /3.5 (no Herc)	69.95
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Deluxe Paint 2 Enhanced /dual (286/386)	CEVH/640 209.95
Deluxe Paint Animation /dual (best on 286/386)	VM/640 169.95
Easysign: Teaching & camera ready text prep. 3.5	50.00
Easysign: Teaching & camera ready text prep. /5.25	50.00
Fantavision (animation) /dual	CEH/256 109.95
Finesse /5.25	275.00
First Graphics /5.25	249.00
First Pub. Symbols: Art Gallery /5.25	199.00
First Pub. Symbols: Bus Template Kit /5.25	145.00
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First Publisher /3.5	249.00
First Publisher /5.25	249.00
Gremlins 2 Print Kit /3.5	29.95
Gremlins 2 Print Kit /5.25	29.95
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Harvard Gr. Symbols: Design Galleries /5.25	159.00
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Harvard Gr. Symbols: Military /5.25	159.00
Harvard Gr. Symbols: Quick Charts /5.25	159.00
Harvard Gr. Symbols: Screen Show /5.25	159.00
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Let's make Calendars & Stationery /5.25	29.95
Looney Tunes Cartoon Workshop /5.25	99.95
Looney Tunes Print Kit /3.5	29.95
Looney Tunes Print Kit /5.25	29.95
Muppets Print Kit /3.5	29.95
Muppets Print Kit /5.25	29.95
New Printshop Companion /dual	
with Page Publisher, Text editor & envelope maker	79.95
NewsMaster 2 /3.5	140.95
NewsMaster 2 /5.25	140.95
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Paint Shop /5.25	CEH/256 39.95
PC Paintbrush 4 Plus /5.25	299.00
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Pic Trivia /5.25	C/256 34.95
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Print Power (signs, banners etc) /5.25	29.95
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Print Shop Party /3.5	C/128 59.95
Print Shop Party /5.25	C/128 59.95
Print Shop Sampler /3.5	C/128 59.95
Print Shop Sampler /5.25	C/128 59.95
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Print Shop, The New /5.25	CE/512 99.95
Print Shop Upgrade /5.25	34.95
Printing Press, The /5.25	CH/256 79.95

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Printing Press, The: Graphics Lib. 2 Add-on/5.25	CH/256	45.95
Printing Press, The: Travel/Vacation Add-on/5.25	CH/256	45.95
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Sesame Street Print Kit /3.5		29.95
Sesame Street Print Kit /5.25		29.95
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Signwriter: advanced Easysign with graphics /5.25		215.00
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Swimware (swimsuit calendars) /5.25		19.95
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Ventura Publisher /3.5		1549.00
Ventura Publisher /5.25		1549.00
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Kings Quest 2 Hint Book	14.95
Kings Quest 3 Hint Book	14.95
Kings Quest 4 Hint Book	14.95
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Leisure Suit Larry 2 Hint Book	14.95
Leisure Suit Larry 3 Hint Book	14.95
Manhunter 1 New York Hint Book	14.95
Maniac Mansion Hint Book	14.95
Neuromancer Hint Book	19.95
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Secret Silver Blades Hint Book	29.95
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Cycles, The /5.25 (S)	CEVH/512 64.95
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Games Summer Edition /3.5	49.95
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Hardball 2 /5.25 (S)	CEVH/512 59.95
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Jack Nicklaus 90 Vol 3 /5.25	59.95
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Jack Nicklaus Unlimited Golf + course design /3.5	79.95
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Links : Legend of Golf /5.25	69.95
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Masterblazer /5.25	59.95
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Microprose Soccer /5.25	CE/- 59.95
PGA Tour Golf /5.25	59.95
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Pro Tennis Tour /5.25	CEH/- 49.95
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Stunt Driver /5.25	CE/640 59.95
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Test Drive 2: European Challenge /3.5	39.95
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Test Drive 2: Musclecars /3.5 (EGA needs 512k)	CH/384 59.95
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Test Drive 2: The Duel /5.25 (EGA needs 512k)	CH/384 49.95
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6 Graphic Adventures by Scott Adams /5.25	49.94
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Bandit - Ancient China /5.25		99.95	Fiendish Freddy /3.5	EVT/512	59.95
Bar Games /3.5	CH/384	59.95	Flippit /5.25	-/256	39.95
Bar Games /5.25	CH/384	59.95	Foot's Errand /5.25		84.95
Bards Tale 1 /dual	CET/256	49.95	Fountain of Dreams/5.25	DEV/512	54.95
Bards Tale 2 /5.25	CET/512	49.95	Friday Night Poker /3.5	CE/256	59.95
Battle Chess /3.5 (S)	CEVH/512	59.95	Friday Night Poker /5.25	CE/256	59.95
Battle Chess /5.25 (S)	CEVH/512	59.95	Full Metal Planete /dual		59.95
Battlechess 2 /dual		69.95	Fun House: TV game /3.5		29.95
Battletech 2 /dual		69.95	Fun House: TV game /5.25		29.95
Betrayal /dual		89.95	Future Wars /3.5		59.95
Beyond Black Hole /dual	CET/512	69.95	Future Wars /5.25		59.95
Bill & Ted's Excellent Adventure /dual	CEVT/512	49.95	Galleons of Glory /dual (S)	CEVMT/512	79.95
Black Cauldron /dual	CEVH/256	69.95	Garfield Trivia Game /3.5	C/256	39.95
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Blades of Steel /5.25		59.95	Genghis Khan /5.25		89.98
Blockout /dual		49.95	Gnome Ranger /5.25		59.95
Bobo /5.25		49.95	Gold Rush /dual (S)	CEVH/256	49.95
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Budokan /dual		59.95	Heroes of the Lance /dual	CE/384	49.95
Buffalo Bills Rodeo Games /5.25	CE/384	49.95	Hidden Agenda /5.25		99.95
Cadaver /dual		69.95	Hillsfar /dual	CE/384	59.95
Captain Power /5.25		29.95	Hostages /3.5		29.95
Castevania /5.25		59.95	Hostages /5.25		29.95
Castle Master /dual		69.95	Hoyle's Book of Card Games - 1 /dual (S)	CEVH/512	69.95
Caveman Ugh-lympics /dual		39.95	Hoyle's Book of Card Games - 2 /dual (S)	CEVH/512	69.95
Centurion /5.25		59.95	Indiana Jones Last Crusade (Gr. Ad) /dual (S)	CEVH/384	69.95
Champions of Krynn /3.5		49.95	Indiana Jones & Temple Doom /5.25		69.95
Champions of Krynn /5.25	CE/512	49.95	Infestation /5.25		69.95
Chase on Tom Sawyer's Island /5.25		24.95	Infestation /dual		69.95
Chess Player 2150 /5.25		69.95	Into Eagle's Nest /5.25	CE/256	48.50
Chess Simulator /5.25		69.95	Iron Lord /5.25		59.95
Chessmaster 2100 /dual	CEH/512	69.95	It came from the Desert /5.25	CEV/512	69.95
Chip 'n' Dale & the Rescue Rangers /3.5		29.95	Jones in the Fast Lane /dual		69.95
Chip 'n' Dale & the Rescue Rangers /5.25		29.95	Keef the Thief /dual		49.95
Circus Games /5.25		29.95	Keys to Maramon /3.5	CET/384	69.95
Cloud Kingdoms /dual	CE/512	59.95	Keys to Maramon /dual	CET/384	69.95
Codename Iceman /dual (S)	CEVH/512	69.95	Khalaan /5.25		59.95
Colorado /3.5	CEH/512	69.95	King's Bounty /5.25	CEVHT/384	49.95
Colorado /5.25	CEH/512	69.95	Kings Quest 1 /dual	CEVH/256	49.95
Conqueror /3.5		59.95	Kings Quest 1 enhanced /dual	EV/512	69.95
Conqueror /5.25		59.95	Kings Quest 2 /dual	CEVH/256	69.95
Conquest of Camelot /dual (S)	CEVH/512	69.95	Kings Quest 3 /dual (S)	CEVH/256	69.95
Covert Action /dual		99.95	Kings Quest 4 /dual (S)	CEVH/512	69.95
Crimson Crown /5.25		29.95	Kings Quest 5 /3.5 (S) VGA version		
Crossbow; Legend of Tell/ 5.25		59.95	[1.4mb 3.5"]	EMVT/512	89.95
Crossword Magic /5.25	C/128	69.95	Kings Quest 5 /5.25 (S) VGA version		
Curse of Azure Bonds /dual		49.95	[1.2mb 5.25"]	EMVT/512	89.95
Curse of Ra /3.5	EV/512	59.95	Kings Quest 5 /dual (S) EGA version		
Curse of Ra /5.25	EV/512	59.95	[1.2mb 5.25"]	EMVT/512	89.95
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Dark Century /5.25		59.95	Kristal, The /5.25	CEVT/-	69.95
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Defender of Crown /dual		69.95	Leisure Suit Larry 1 /dual	CEVH/256	69.95
Demons Winter /5.25		49.95	Leisure Suit Larry 2 /dual (S)	CEVH/512	69.95
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Don't go alone /5.25 (S)	CEV/384	49.95	Life and Death1 /dual	CE/512	59.95
Dragon Wars /dual		59.95	Life and Death 2/5.25	CEVTD/640	?
Dragons Lair /5.25		99.95	Life and Death 2/3.5	CEVTD/640	?
Dragons of Flame /dual		59.95	Light Corridor /dual		69.95
Dragonstrike /3.5		59.95	Lightspeed /dual		99.95
Dragonstrike /5.25		59.95	Living Jigsaws (animated) /3.5		69.95
Drakkhen /dual		79.95	Living Jigsaws (animated) /5.25		69.95
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Dungeon Master /dual		69.95	Loom /5.25	ECV/512	69.95
Dungeon Masters Ass Vol1 /5.25	CE/384	49.95	Looney Tunes Hare-Brained Adv. /3.5		29.95
Dungeon Masters Ass Vol2 /5.25	CE/384	49.95	Looney Tunes Hare-Brained Adv. /5.25		29.95
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Eye of Horus /dual	CE/512	69.95	Magic Candle 1 /3.5	CE/256	69.95
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Faces Tris 3 /5.25		59.95	Manhunter 1 New York /dual	CEVH/256	59.95
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Mortville Manor - + digitised speech/sounds /5.25	39.95	Sierra Starter Pack /3.5: with Space Quest 1, Police Quest 1 and Leisure Suit Larry 1		79.95
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MTV's Remote Control: TV trivia game /5.25	29.95	Silpheed /dual (S)	CEVH/512	59.95
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Murder /5.25	CEV/-	Sim City Graphic Set 1 /5.25: as above	CEVTH/	59.95
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Nightbreed /dual		Ski or Die /5.25	ET/384	49.95
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Nightshift /3.5		Skweek /5.25	CE/512	59.95
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Nobunaga's Ambition 1 /5.25	89.95	Sorcerer of Claymorgue Castle /5.25		29.95
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Omega /3.5	69.95	Space Quest 3 /dual (S)	CEVH/512	59.95
Omega /5.25	69.95	Space Rogue /3.5 (VGA needs 512k)	CET/384	69.95
Omicron Conspiracy /dual (S)	CE/512	Space Rogue /5.25 (VGA needs 512k)	CET/384	69.95
On Safari/Targhan /5.25 (Double pack)	CEH/-	Space School Simulator /5.25		39.95
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Operation Stealth /5.25 (S)	CEVT/640	Star Wars /3.5		39.95
Penthouse Jigsaw /dual	69.95	Star Wars /5.25		39.95
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Pipe Mania /5.25	CEVH/-	Steel Thunder /5.25	CEVH/384	49.95
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Police Quest 1 /dual	CEVH/256	Sword of Aragon /dual		59.95
Police Quest 2 /dual (S)	CEVH/512	Sword of Samurai /dual	CEV/512	89.95
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Ports of Call: maritime simulation /5.25		Tangled Tales /5.25		44.95
Powerdrome /dual		Teenage Queen /5.25 (Strip Poker)	CE/-	59.95
Prince of Persia /dual		Temple of Apschai Trilogy /5.25		39.95
Psychic War /3.5	CEVH/384	Tempus /5.25 (due December)		79.95
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Punisher /dual		Tetris /dual	CEH/256	59.95
Puzzle Gallery: compilation of puzzles /5.25		Thexder 2 - Firehawks /dual		79.95
Quest for Glory 1 /dual (S) [was Hero's Quest]	CEVH/512	Thexder /dual (S)	CEVH/256	59.95
Quest for Glory 2 - Trial by Fire /dual [1.2mb 5.25"]	CEVHT/640	Third Courier, The /3.5 (S) (VGA needs 512k)	CEH/512	59.95
Quest of the Time Bird /5.25	C/-	Third Courier, The /5.25 (S) (VGA needs 512k)	CEH/512	59.95
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Lottery Wheel Analysis /5.25	C/256 34.95
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MS-C Compiler /5.25 (also for OS/2)	825.00
MS-C Compiler Library Source/ 5.25	195.00
MS-Cobol Compiler /3.5 (also for OS/2)	1390.00
MS-Cobol Compiler /5.25 (also for OS/2)	1390.00
MS-Fortran Compiler 3/5 (also for OS/2)	810.00
MS-Fortran Compiler /5.25 (also for OS/2)	810.00
MS-Macro Assembler /3.5 (also for OS/2)	295.00
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MS-Pascal Compiler /3.5 (also for OS/2)	595.00
MS-Pascal Compiler /5.25 (also for OS/2)	595.00

MS-Quickbasic Compiler /3.5 (also for OS/2)	195.00
MS-Quickbasic Compiler /5.25 (also for OS/2)	195.00
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MS-Windows 286 /3.5	220.00
MS-Windows 286 /5.25	220.00
MS-Windows 386 /dual	380.00
MS-Windows Developer's Tool kit /5.25	800.00
MS-Windows (v3.0) /3.5	249.00
MS-Windows (v3.0) /5.25	249.00
Music Construction Set /5.25	29.95
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Ancient Art of War at Sea /dual	79.95
Ancient Art of War dual	79.95
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B-24 Simulator /5.25	49.95
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Blue Max /3.5 (VGA needs 640k)	CEVMT/512 69.95
Blue Max /5.25 (VGA needs 640k)	CEVMT/512 69.95
Carrier Command /3.5	59.95
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Chuck Yeager's AFS:1 /dual	CEH/256 54.95
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Strike Fleet /dual	49.95
Storm across Europe /5.25	49.95
Team Yankee /dual	89.95
Their Finest Hour /3.5 (S)	CEVH/512 69.95
UMS 2 /dual	89.95
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Dust Cover: Amstrad PC20 - unit only	18.00
Dust Cover: Amstrad PC2086 - keyb'd & mon	39.00
Dust Cover: Amstrad PC2286/2386 - keyb'd & mon	39.00
Dust Cover: Epson LQ500, LX800	17.00
Dust Cover: Other clones (please identify) - keyb'd	18.00
Dust Cover: Other clones (please identify) - mon/system	25.00
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Dust Cover: PS/2 - mon/system	25.00
Dust Cover: Star NX1000, NX 24-10, NB 24-10	17.00
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Ribbons: Epson LQ500, 800, 850	15.95
Ribbons: Epson LX80, 86, 90	8.95
Ribbons: Epson MX/FX/RX 100, 100+, 105, 105+	10.95
Ribbons: Star LC24-10, NX24-10	15.95
Ribbons: Star NX1000, LC10	10.95

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GUIS 321 A4 Page Scanner (200 dpi)	895.00
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Joystick: Anko Standard	39.95
Joystick Games Card - 2 ports	49.95
Joystick: JS-606 Pistol Grip	49.94
Joystick: Junbo	29.95
Lightscan 200H Mini Hand Scanner	199.00
Lightscan 320F Flatbed Scanner (300 dpi)	P.O.A.
Lightscan 400J Hand Scanner	399.00
Lightspeed 400P A4 Hand Scanner	1595.00
Mouse Bus Card for X-30MD: frees serial port	46.95
Mouse: Champ AD-M36 + Image and Graphics software	99.00
Mouse: Genius GM-6X serial with Dr Halo /5.25	79.95
Mouse: Qtronic X-30MD serial with Dr Halo, pad, holder etc. /5.25	119.95

Printer Cable: parallel	29.95
Sound Source (sound add-on for Disney games)	99.95

PUBLICATIONS

Abacus Quick Ref. Guide: dBase 3	24.95
Abacus Quick Ref. Guide: GW-Basic	24.95
Abacus Quick Ref. Guide: Lotus 1-2-3	24.95
Abacus Quick Ref. Guide: MS-DOS	24.95
Abacus Quick Ref. Guide: MS-Word	24.95
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Microref Keyb'd Template: Lotus 1-2-3 v2.01	19.95
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MS-DOS Tips and Tricks	36.95
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Secretary: W Vaughan (08) 382 8312

Amsnorth Amstrad User's Club
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Amstrad Computer Club Inc.
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Secretary: D. Dienelt (08) 339 1314

Northern Computing Society
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Sec: Fred Cummins (08) 281 209 1

ACT

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Treas: Rod MacKenzie (062) 54 7551

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Amstrad User's Group
Contact: John Court (09) 666 143

Wellington Amstrad User Group
President: Patrick Faury (04) 766 185
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CONTACT LIST

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

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WANTED

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Guide to Machine Code - 3

Moving into Part Three of Alex Aird's introduction to Machine Code programming, looking now at error trapping.

When you use RSX commands and enter an incorrect number of parameters there is no built in error routine to halt the program and inform you as Basic does. The best example of error trapping that I have seen as far as machine code is concerned is a single beep, and a message saying RSX Error, leaving you with no idea on which line the error has occurred.

The error routines are all there in the upper ROM, you just need to be able to access them.

In order to do this, you will first need to determine the version of Basic that is being used, because the routines are situated at different addresses in different ROMs. The provision of an entry in the Jump Block to access error trapping routines would have been invaluable, and as the Amstrad is designed especially to handle

background ROMs I can only regard the omission of a Jump Block entry as a major failing.

A call to KL PROBE ROM at &B915 will return the class, mark, and version of the currently selected upper ROM in registers 'A', 'L', and 'H' respectively, and then all you need to do is find out if 'H' contains zero, one or two.

should be used. This is because of the :EMULATE command used by DK'tronics, which fools a program into thinking that a 6128 ROM is fitted. It's quite easy to get around this - just enable the upper ROM and examine the byte at &C002. It should be either zero, one, or two as before.

If an error trapping routine is written to run in the expansion ROM, as it is not possible to have two upper ROMs enabled at the same time you can either use the firmware routine at &B915 or the version of Basic fitted could be established at EMS using call &B915.

An upper data area could be used to hold this information. The error routine in the Basic ROM would then be entered via an RST instruction.

Note: IY points to a background ROM's upper data area when a ROM based RSX command is executed.

What follows is an example

Figure 1.

Machine	Registers 'A' 'L' 'H'	ROM type
CPC 6128	&80 &01 &02	Basic v1.2
CPC 664	&80 &01 &01	Basic v1.1
CPC 464	&80 &01 &00	Basic v1.0

The fact that the CPC6128 and CPC664 both sign on as Basic 1.1 should be ignored.

Now, because of the possibility of someone having a DK'tronics memory expansion, another method of determining which version of Basic ROM is fitted

RSX using a customised error routine, which passes an error number from the machine code routine to Basic. The error is handled with ON ERROR GOSUB.

Figure 2.

```

eg.
org &8000
  ld  bc,addr
  ld  hl,wspace
  jp  &bcd1
.wspace
  defs 4
.addr
  defw addr2
  jp  noise
.addr2
  defm "BEE" ;RSX name :BEEP
  defb "P"+#80
  defb 0
.noise
  cp  0 ;if parameters < 0
  jp nz,error ;then goto error
  ld a,7
  call &8B5A ;print chr$(7)
  ret
.error

  ld a,40 ;why 40? dunno! any
           ;number 33-255 will do
    
```

It is interesting to note here that error number 2 - syntax error - will halt the Basic program and put you in edit mode on the offending line, in which case ON ERROR GOSUB will not be required; (see Figure 3.)

The same in Basic:

Figure 4.

```

10 ON ERROR GOSUB 100
20 :BEEP,1
30 END
100 IF ERR=40 THEN PRINT
    "RSX parameter error
    in line number ";ERL:END
    
```

This will give an error because :BEEP doesn't require any parameters, so edit line 20 to read "20 :BEEP" and rerun the Basic program.

Note: This idea appears to work well, but there is no documentation available concerning the Basic

ROM. The Advanced User Guide by Daniel Martin says that the error routine is at &CB51, but I found it at &CB55. Are there different versions around, or is one of us wrong?

A point about character values; they are what you might expect for the usual ASCII set and control codes, but the function keys return quite different values. For example, pressing number 1 on the top row of the keyboard would load the 'A' register with &31 or 49 decimal, but just because the number 1 is painted on a key on the function keypad doesn't mean that it will return the same value. In fact the value returned is &81. Similarly the ENTER key on a 6128 (or little ENTER on a 464/664) which you may assume gives a value of &0D, actually returns a value of &8B. ■

Figure 3.

```

push af ;save error number
call &B912 ;KL CURR SELECTION
push af ;save currently selected
call enable ;ROM
ld a,(&C002)
cp 2
jr z,cpc6128
cp 1
jr z,cpc664
cp 0
jr z,cpc464

.restore
pop af ;restore previously
call &B90C ;selected ROM

.enable
ld c,0 ;Basic ROM number
call &B90F ;select upper ROM
call &B900 ;enable selected ROM
ret

.cpc464
call restore
pop af ;error number
ld c,a
jp &CA94

.cpc664
call restore
pop af ;error number
jp ??? ;error routine in 664 ROM

.cpc6128
call restore
pop af ;error number
jp &CB55 ;error routine in 6128 ROM
    
```


GAME PLAY

On review this month

U.N. SQUADRON

STRIDER 2

TIME MACHINE

FLIMBO'S QUEST

VERDICTS

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

U.N. SQUADRON

- Published by Capcom • Distributed in Australia by Ozisoft
- Available in Disk format only • Price \$39.95
- Keyboard or joystick control Optional

Because it coincides with the Gulf War, the release of U.N. Squadron is hitting a little too close to home. The scenario is built around the growing crisis in the Middle East, which hopefully is purely coincidental and not the result of trigger-happy patriots.

In any case, you have a choice of playing the role of one of three characters and the option of playing either one or two player mode. Each character is the pilot of the same type of aircraft, but carry individual skills and statistics. The only disappointing feature thus far is that the character information screens move a little too quickly for thorough observation, leaving only the

'profound' comments passed between screens available for reading.

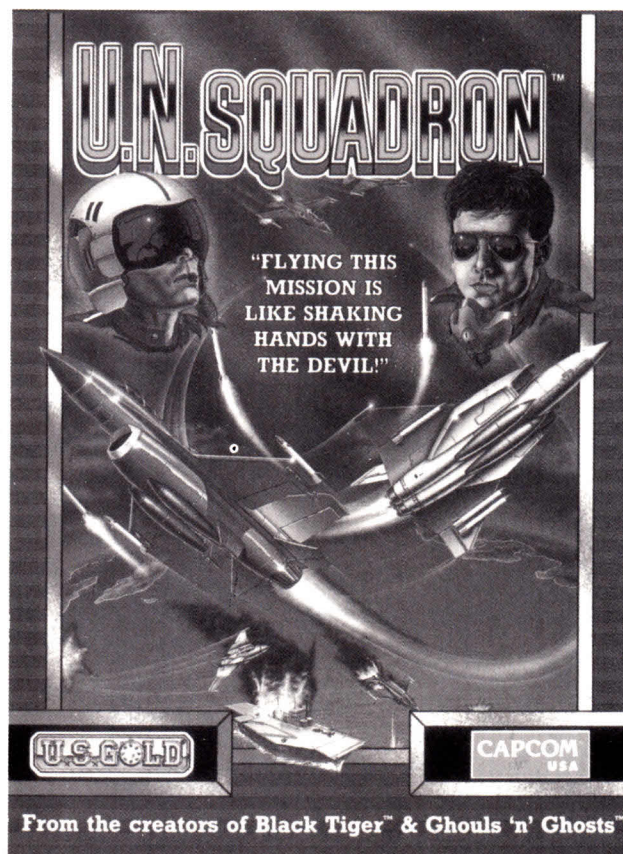
Before going into aerial combat you must purchase your weapons, an inventory of which is supplied with the game. Once this is done, you are given your mission and the game begins.

The graphics of the game combined with the fast pace and dramatic musical score provide an instant excitement to your mission. The

screen is very full and vibrant, control of your craft is easy and once you get the hang of it you are off and running with a fighting chance at success.

Death comes easily, but strategic flying and the dodging of enemy fire becomes an acquired skill. There's not a lot to be said about the scenario itself, because as a shoot-em-up/battle game once the quality is established the entertainment value comes from the players skill, whether you know the story behind it or not. Rest assured, the game lives up to its promises and will give you a decent run for your money.

VERDICT ■ ■ ■



STRIDER 2

- Published by Capcom • Distributed in Australia by Ozisoft
- Available in disk or Tape format • Price \$39.95 Disk, \$29.95 Tape
- Keyboard or joystick control Optional

By all reports the first version of Strider was a success, which no doubt led to the development of Strider 2, "No limits, no mercy, no surrender!" All things are bigger and better the second time around. Strider has returned from his Soviet conquest, and having proved himself invaluable is now required to offer his services in another world.

As the story goes, the leader of the alien planet, a female named Magenta, has been kidnapped by alien terrorists. Imagine if you can a Ninja-type warrior with technological weaponry in his grasp, as Strider has been equipped with gyro lasers and other amazing gadgets befitting an interspace mission. He even has the ability to transform himself into a mutant mechanical combat unit. Cybernetically, of course.

The game is played over five consecutive levels, each offering an interesting diversion from the last. You begin in an alien forest setting and work your way indoors/underground until you reach the heart of your search and the climax of the game. Your aim ultimately is to rescue the leader, a goal you will reach only after successfully making your way

through the many scenes before you.

The graphics are impressive, as are the leaps and bounds of your agile hero. Clear and colourful, accompanied by decent sound effects, the overall effect is worthy

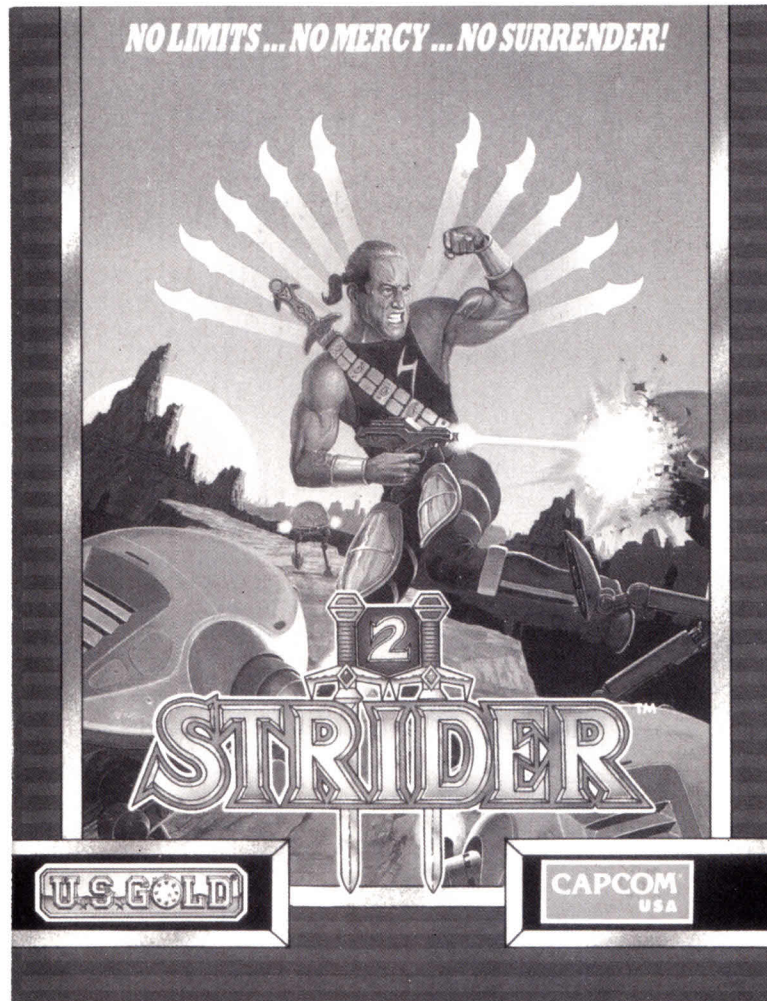
The gameplay itself is absorbing once you get the hang of it, but as with many Capcom games the instructions are very sparse. This means that the rules, weaponry details, number of lives and scoring details, (among other

things), have to be learnt through trial and error. This can be annoying when beginning to play a game because often you can find yourself charging through the second level without knowing how you got there. It simply takes practise and observation to determine which sounds indicate which action and so on. This can hardly be seen as a strenuous task as it is, afterall, a game.

As a game it is naturally placed in the category of 'entertainment', and Strider 2 lives up to the expectations suggested by such a term. Without being too easy it achieves the right amount of action and challenge, and any single episode

started is not likely to last for only a few moments before being cancelled out by failure. Well worth a look.

VERDICT ■ ■ ■



of being praised. Your enemies are varied here and there, although the presence of 'robot' warriors and deadly birds of some sort is very thick throughout most of the game. At least you know what you are up against.

TIME MACHINE

- Published by Vivid Image • Distributed in Australia by Ozisoft
- Suitable for Amstrad 464/664/6128 • Price \$39.95 Disk, \$29.95 Tape
- Keyboard or joystick control Optional

With a name like Professor Potts it's hard to take time travel seriously. Reading the back of the box the Time Machine seems dauntingly complicated, but in reality it is more-or-less just plain old uneventful. The scenario is this: You are professor Potts. Described as having a "shock of untidy hair" (etc. etc.) you are the epitome of the stereotyped mad professor common to computer games and old sci-fi movies. You are working on your time machine outside the laboratory when a terrorist attack sees you transported into a time warp. Scene one - you begin the game in prehistoric times and are faced with the challenge of altering history as it happens until you find

yourself back in the present time to save your time machine from the impending terrorist attack.

In the course of manipulating history I suppose the player should ultimately gain from having control over the evolution of both certain species and the planet as a whole, as the manual suggests that the future of the planet is in your hands. Yet another environmental plot.

According to the manual you are able to move freely from one time zone to another, but I failed to see how this was done. Failing to overcome the pressure of extreme boredom I did not make it past this zone.

As well as the disappointing lack of accompanying sound, the

on screen display was pretty much a let down. The graphics were average, if not poor - a far cry from the Amiga shots on the box. The pace of the game was slow and dull. The professor is supposedly meant to explore the terrain and tackle foreign creatures, but unfortunately the scene is not interesting enough nor the threat of danger prominent enough to hold any excitement value. An impossible-to-cross stream adds frustration to the list of discredits to the game. It's always a pity to see a product that has potential introduced before it has been developed to a reasonable standard of quality.

VERDICT ■

FLIMBO'S QUEST

- Published by System 3 Software • Distributed in Australia by Ozisoft
- Available in disk and tape format • Price \$39.95 Disk, \$29.95 Tape
- Keyboard, mouse or joystick control Optional

"Take one innocent character Flimbo, add a very broken heart, a pinch of heroism and one delicious damsel in distress. Sprinkle a host of cameo roles featuring a deranged professor's genetic mutations and you would be mixing the ideal ingredients of a cartoon style adventure game..."

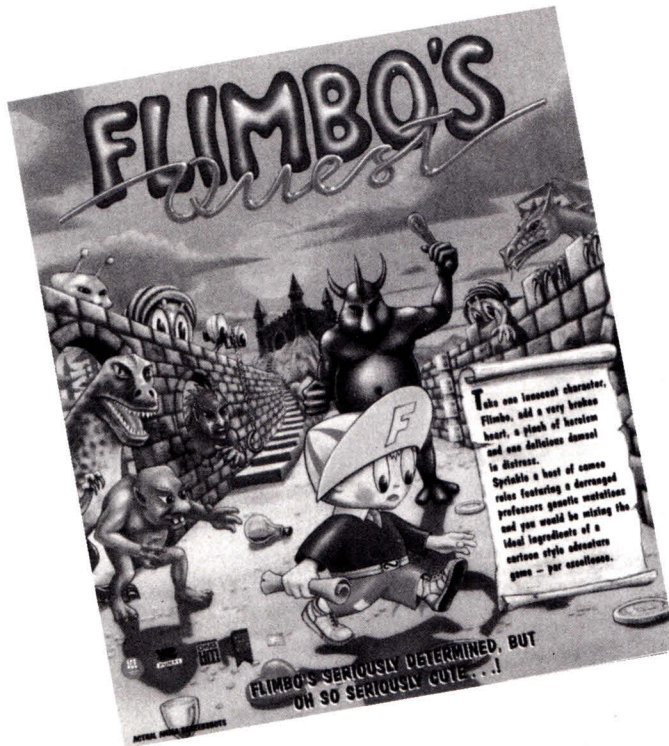
Visually very much like Super Wonderboy, Flimbo's Quest takes a traditional storyline and adds sci-fi implications to make it a little more original. Although geared mainly towards younger players, Flimbo's Quest presents the player with no easy task. But first, the story behind your adventure.

Set in Dewdropland, Flimbo has cause to rescue Pearly - the beauty queen - from the clutches of Professor Fransz Dandruff. Because of her youth and beauty, the Professor has kidnapped her in order to put his remarkable new life extension invention to work. The life extension machine drains the life from one person and puts it into the body of a receiver, in this case himself. Fortunately for Pearly her boyfriend is the resident super hero, and so she has a chance at survival.

The structure of the game is quite clever, as Flimbo has a number of tasks to keep him occupied throughout every

minute. Fighting the Genetically Undesirable Mutants (G.U.M.s) created by the Professor is only one priority, as the game has a heavy exploratory content that requires Flimbo to find items and money constantly. These are usually found in secret rooms, though often when a creature is shot it transforms into an item that holds some value. The money is essential in buying extra time (as there is a time limit) and more powerful weapons, amongst other things.

You have an ally in the magician Dazz Bazian, but the strength of his loyalty goes only as far as your spending account. He will



you will be fortune seeking, and must remember the location of the store in order to return as often as necessary. Among the wares available to you is that unknown quantity of extra time to ease the strict limit.

Apart from a rather annoying pause between screens as you scroll through Dewdropland, the graphics aren't bad, though not exactly complex. Plenty of colour and sound, plus the interesting creatures, ensure that at least visually the game is up to standard. Flimbo has an interesting personality outlined in the guide, which incidentally is very informative. The gameplay is not too simple for older players to tackle, but is best suited to a younger audience. Specifically, it will hold the interest of people anywhere up to their early teens for longer.

supply you with most of the things that you need from his stores,

which are distributed on the ratio of one per world. This means that

VERDICT ■ ■ ■

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.ASM Access

Joseph Elkhorne shows you how to access files from directly within a CP/M program.

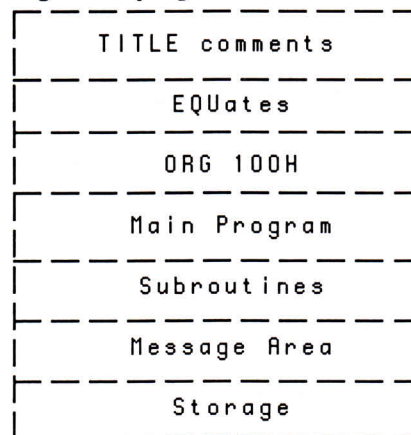
Here we are three months into the New Year and returning to life. I've decided that code embedded in the text of a column doesn't work too well, so starting again the program content will be listed separately, with explanation here. This month, we're going to access a file from within a CP/M program, rather than using it externally from the command line or the batch file. We covered some of the general considerations in December. Now we're creating a preliminary stand-alone program to which we will make additions, piece by piece, until we have a complete working simulation.

The first thing we do is call the screen clearing subroutine. You'll remember this ploy was referred to in the August issue of TAU and created as a standalone program in December.

Within a major program, we essentially use the same technique, although the format might seem a little scattered. The print string function is EQUated, and

CLS is treated as a subroutine - one of many that reside in the .ASM file past the main program steps. The actual string message is part of the end listing, in the messages area. But all of these discrete pieces work together.

I've referred to a recommended .ASM format before, but on review see it's always been in text. Here's a block diagram of what a nicely-organised program looks like:



I don't know about you, but the alleged statement of Confucius, that "a picture is worth a thousand

words", makes a lot of sense to me. After thumbing back through half a dozen issues of TAU, it certainly seemed to be time for an illustration of the general .ASM format!

The keen reader, recalling past offerings in this column, will recognise that I don't always follow my own advice. Generally, it depends on what and how I'm trying to present something here, as to whether the 'ideal' format is followed. If you go by the above layout, however, you will always have nicely readable code to refer back to.

Anyway, we are now 'going by the book' so let's continue the sequence. Once we've cleared the screen, making things tidy, we create the user stack. I've previously referred to the advisability of saving the CP/M stack and pointer and let the user program run its own stack. This is always safest.

At this point, within the main program we have three items to discuss. Before CP/M can open a file, it has to find it. It does this by having the filename and type plugged into the File Control Block first. We use the standard default address and move the hard-coded characters from the message area to the FCB area.

Alternatively, we could tell CP/M the address via the label, in effect using our own FCB. We would also require some extra reserved bytes in those programs where we deal with the allocation units and other fun things.

So I've elected to stick with the default address, and move the information so that the program knows what we want to look at. This is just a matter of pointing at the first character of the name and the first location of the FCB where names are meant to be. Eleven characters are transferred, one at a time, in a loop.

Once the name is there, the system call to open a file is accessed. Even though no prob-

lem should exist, I've built in a test for errors: if for some reason the program cannot find the file, it tells you so and exits directly. Who knows, you could have a corrupted disk or a dyslexic entry in the .ASM file.

I made one typographical error in my .ASM file and got the appropriate error code from MAC. It took only seconds to see what silly thing I'd done, and I corrected it. Completing the assembly and test process I was rewarded - as you will be - with the unexciting message 'LIFE.TXT' on screen.

If you look at the .ASM listing, you'll see a sneaky bit of coding. I've used the message area as the location for the filename/type - but also appended a dollar sign symbol. Now, this is the twelfth character, so the transfer loop never has to look at it. By using the label address for a print string function also, I have the standard terminator to satisfy its requirement. Thus, I get two different uses from one string.

Remember the return code from the system call? Well, it should be a zero, one, two or three in this program, corresponding to the directory entry of LIFE.TXT.

Otherwise the hex value FF would come back, be incremented to zero, and now allow the subroutine to terminate at the Return Non Zero point.

In this event, we'd print a warning message, restore the system stack pointer and do a warm boot.

All being well, however, we will have a true directory code and the RZ takes us back to the main program. The next step there is another subroutine, named SHOWIT. This will actually print the text file to the screen.

I've put some temporary code in the SHOWIT subroutine area, simply to prove to the user that something has definitely happened as a result of opening the file.

Bear in mind as we add to the program in future that we must NEVER separate the GETFIL subroutine and the DONE portion of code. The fallthrough technique is the quickest way to say 'Oops! there's a problem - let's get outta here'. If this occurs, we exit via DONE.

With successful operation in that regard and continuing on with more instructions, we will find

other instances of problems or even the completion of the program. There is only one exit point, accessible from various places, and that is DONE.

In future, we'll simply tack on bits and pieces to expand this program - more EQUates, more subroutines and corresponding calls from the main program.

The idea is to have a relatively short main program - the ideal is but a single page, with all the fiddly bits done as subroutines. We could write much of this program in a linear fashion but it would be inordinately hard to read by the time we finished. This way, every portion is a module, and the modules can be examined independently. ■

The LIFE1.ASM program has not been printed within the magazine. However, those wishing to obtain a copy of the program can send a SAE to the following address and we will forward it to you.

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Discussing Disks - 3

We now delve a little deeper into the commands associated with using disks, this time switching attention to CP/M.

Apart from loading the odd game or two, the command `ICPM` entered at the 'Ready' prompt will also load the CP/M operating system. (PCW owners would have organised a self-booting disk to achieve the same.) A successful load will be signified with an "A>" prompt. Unlike the Basic environment where to run a program you need to type `RUN"programe"`, in CP/M you generally just have to type the program name.

Whilst Basic programs have an extension of `.BAS` (or `.BAK`), CP/M programs have an extension of `.COM`. This is well illustrated by looking at a Public Domain disk which may have files with an assortment of extensions (`.DAT`, `.DOC` etc.) including the all important `.COM` program files and will explain to people who are not sure how to identify or load a Public Domain program.

It is not the intention in this series of articles to explain how CP/M works, but it should be pointed out that in the versions of CP/M which are supplied with Amstrad computers (CPCs and PCWs), some programs are standard CP/M (ie. will work on other brands of computers using the same CP/M), while other programs have been adapted to work in the specific Amstrad environment. A good example of a standard program/utility is `SUBMIT` which is universal to all computers capable of running CP/M. On the other hand, `SETKEYS` will only be found on Amstrad disks as these are the only computers on which the command will function. It's not important at this stage to understand why there are differences and an explanation will only serve to complicate matters. So let's return to the point of this month's tutorial and describe the use of some of the CP/M commands. Some of the commands have extra facilities to enable more precise action and require 'sub-commands' to be entered after them. The 'sub-commands' (or transient programs) must be in the

current drive when the command is executed. Our first command, `DIR`, has a good selection of transient programs to prove the point.

DIR

In its simplest form `DIR` is probably the most used and well known of all the CP/M commands and produces a directory (list) of all the files and their extensions (except `.SYS` files) on the disk currently in the disk drive (or a nominated drive). It also gives information such as current drive and user number. Unlike the CPC 'CAT' command, `DIR` does not give the size of the files or the free space remaining on the disk.

If you are lucky enough to have two drives then, assuming `DIR.COM` is resident on your disk in drive A, typing `DIR B:` will produce a directory of the files on the disk currently in the B drive.

As mentioned before, if you are going to use the extra facilities that `DIR` has to offer, the transient program (the 'sub-command extension') must be on the disk in the current drive. To produce a full directory showing files, number of 128-byte records, file attributes and so on you would need to type `DIR [FULL]`. For single drive users (and that must be most of us) it is a nuisance to have to make sure that both `DIR.COM` and the transient program `[FULL]` are always on the disk we wish to look at. Here's a trick to get over the problem. If you type `DIR B: [FULL]` even though you do not have a B drive, you will automatically be prompted to "Insert disk for B then press any key". Merely remove the current disk and exchange for the one you wish to look at.

You may have noticed that the transient program is put between square brackets. This is the case with all the options which are now described:

`ATT` also displays the attributes of each file. This

means whether they are read or write protected, whether the file is a DIR or SYS etc.

DATE if the date/time stamp facility has been used on the files (CP/M Plus only) they will be displayed.

DIR shows only the files with the DIR attribute.

DRIV allows the selection of drive and has different forms:

- =ALL - looks at all valid drives
- =(A,B...) - looks at the specified drives.
- =d - displays this specified drive

EXCLUDE allows you to exclude files which match a specified filename including wildcards. This is very handy to cut down the size of the directory listing to only those files you are currently interested in.

FULL provides an alphabetical full directory showing filename and extension, the number of 128-byte records in each file, the file attributes, the disk directory label, the password protection mode and date/time stamps.

MESSAGE shows the drives and user numbers being searched by DIR. It can be usefully used with the DRIVE option.

NOSORT normally used with the FULL option to inhibit sorting into alphabetic order.

RO shows just the 'read only' files.

RW shows just the 'read/write only' files.

SIZE shows the file sizes in Ks.

SYS shows only the SYS files.

USER shows files for selected user numbers as follows:

- =ALL - files for all user numbers.
- =n - for a single user number only.
- =(0,1...n) for specified numbers.

You can mix the above options as long as they are all placed within the square brackets and are separated by commas. For example, to produce a directory showing the sizes of the files for all users, the command would be:

```
DIR [SIZE,USER=ALL]
```

To list all Basic files (ie. those having an extension of .BAS) the command would be:

```
DIR [USER=ALL] *.BAS
```

The "*" is a wildcard, which in this case means make a selection of files which have any name in the position before the full stop (in other words all files).

From these files will be selected only those with a .BAS extension.

Sometimes you'll find that the information to be displayed is more than a screenful and you will lose part of the list off the top. Sometimes you may prefer to read the list at a later stage. If you have a printer, merely pressing CONTROL and P (or ALT and P on the PCW) will switch on a printer 'echo', then type in the command. This will cause everything which appears on the screen to also be printed. To turn off the 'echo' just press the two keys again.

Finally, there is a command DIRS which will display only the SYS files but it does not have any options which can be attached to it like the DIR command. It is really redundant as the DIR command can achieve the same list.

DEVICE

This is a powerful command with many uses. It can tell you what peripherals (printers etc.) are currently attached to your computer and can be used by CP/M. Each peripheral has a physical device name and a logical device assignment (number). Both of these are displayed when using the command DEVICE by itself. Typing DEVICE NAMES will provide a list of the physical devices and information about each, while DEVICE VALUES will display the current logical assignment. It can also display or set the current screen size.

The command can also be used in the world of communications for setting protocols and baud rates.

ERA

The highly dangerous command to erase files. The basic format is ERA FILE.EXT to delete a single file. Wildcards can be used (not with early versions of CP/M) to delete multiple files. For example, ERA *.BAK would delete all files with an extension of .BAK. It's wise not to experiment with this command unless you have created some dummy files to delete. ■

That wraps up this month's article. Next month we'll cover the rest of the commands, including the very useful PIP command to copy files.

Beats Per Minute

Metronome and Heartbeat are two programs designed for different purposes but able to achieve the same aim. We have put them both together to provide a means to measuring your heart rate via two separate methods.

Metronome works by using the faster/slower process of measuring your pulse against an already established rhythm. That is, you tell the program to beat faster or slower according to your own heart-beat, and it does so whilst displaying the amount of beats per minute on screen. Naturally you are not

restricted to measuring your heart beat with this program, but can measure anything that has a consistent beat. Alternatively you can use it to set the pace of a musical score or some such project.

Heartbeat, on the other hand, requires you to keep one finger on your pulse whilst using the other hand to tap the ENTER key each time you register a pulse beat. Your heart beat will be illustrated on a graph as it is counted. At the end of a specified interval it can calculate the amount of beats your heart does within the minute, thus establishing your heart rate.

```

10 REM ----- METRONOME -----
20 POKE &BDEE,&C9
30 GOSUB 310 ' initialize
40 ' ----- CONTROL LOOP -----
50 a$=UPPER$(INKEY$)
60 IF a$="Z" AND st=1 AND del<100 THEN del=del+1:GOSUB
140:GOSUB 270
70 IF a$="Z" AND st=0 AND del<100 THEN del=del+1:GOSUB
140
80 IF a$="A" AND st=1 AND del>10 THEN del=del-1:GOSUB 1
40:GOSUB 270
90 IF a$="A" AND st=0 AND del>10 THEN del=del-1:GOSUB 1
40
100 IF a$="S" AND st=1 THEN st=0:GOSUB 220:GOTO 50 ' so
und off
110 IF a$="S" AND st=0 THEN st=1:GOSUB 270:GOTO 50 ' so
und on
120 GOTO 50
130 ' ----- PRINT BEATS PER MIN. ROUTINE ---
-----
140 LOCATE 18,12:PRINT CHR$(24);USING"###.#":52/del*60:

```

```

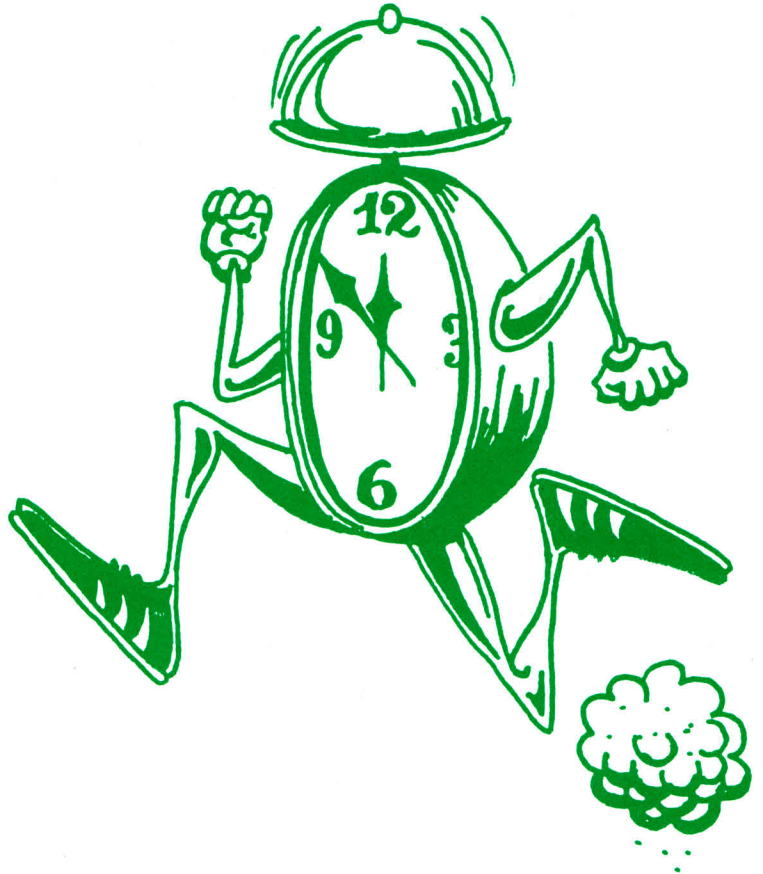
:PRINT CHR$(24);
150 RETURN
160 ' ----- SOUND and PALETTE SWITCHING ROUTINE
-----
170 SOUND 3,100,2,15,1
180 IF col=26 THEN col=0:col2=26 ELSE col=26:col2=0
190 INK 2,col:INK 3,col2
200 RETURN
210 ' ----- SOUND OFF ROUTINE -----
220 EVERY del GOSUB 290
230 LOCATE 19,20:PRINT"Start"
240 INK 2,0:INK 3,0
250 RETURN
260 ' ----- SOUND ON ROUTINE -----
270 EVERY del GOSUB 170
280 LOCATE 19,20:PRINT"Stop "
290 RETURN
300 ' ----- INITIALIZE -----
310 MODE 1:BORDER 0
320 INK 0,0:INK 1,0:INK 2,0:INK 3,0
330 ENV 1,1,2,1,1,-3,2

```



```

340 del=20:LOCATE 16,12:PRINT CHR$(24);USING"###.#";52/
del*60;
350 PRINT CHR$(24);
360 LOCATE 13,2:PRINT CHR$(236);CHR$(236);" METRONOME "
;CHR$(236);CHR$(236)
370 LOCATE 10,24
380 PRINT"By MURRAY D. McDOWALL"
390 LOCATE 13,10:PRINT"Beats per minute"
400 LOCATE 7,16:PRINT"Press: A to increase speed ";
410 LOCATE 7,18:PRINT"      Z to decrease speed ";
420 LOCATE 7,20:PRINT"      S to Start"
430 PEN 2:FOR p=5 TO 8:LOCATE 4,p:PRINT STRING$(4,143):
NEXT p
440 PEN 3:FOR p=5 TO 8:LOCATE 33,p:PRINT STRING$(4,143)
:NEXT p:PEN 1
450 MOVE 2,2:DRAW 2,397,1:DRAW 637,397:DRAW 637,2:DRAW
2,2
460 MOVE 125,24:DRAW 24,24:DRAW 24,375:DRAW 175,375
470 MOVE 450,375:DRAW 615,375:DRAW 615,24:DRAW 510,24
480 BORDER 9:INK 1,15
490 RETURN
    
```



```

1 KEY 128,"mode 2"+CHR$(13)+"list"+CHR$(13)
20 CLS:MODE 1:LOCATE 10,10:PRINT"INSTRUCTIONS <Y/N>"
30 LOCATE 15,15:INPUT A$:IF LEFT$(A$,1)="Y" OR LEFT$(A$,
,1)="y" THEN 830
40 CLS:PEN 0:PRINT CHR$(818)
50 INK 1,0:INK 0,27:INK 3,1:PEN 1:BORDER 10
60 TIMER=0:TIM1=0:TIM3=0:TIM4=0:DEFINT A-Z
70 TIMCOUNT=0:COUNT1=0:X%=0:Y%=0:COL=3
80 WINDOW#1,1,22,10,25:WINDOW#2,2,21,11,24
90 WINDOW#3,25,39,7,24:WINDOW#4,4,19,12,23
100 DEF FNTB%(T2$)=39-LEN(T2$)/2
110 PAPER#1,3:CLS#1:PAPER#2,0:CLS#2
120 PLOT 0,0,1:DRAW 639,0:DRAW 639,399:DRAW 0,399
130 DRAW 0,0:PLOT 350,0:DRAW 350,254:DRAW 0,254
140 '***** TEXT STRINGS *****
****
150 T1$=" PRESS ENTER ":T5$="every time you":T2$="(VIS
UAL DISPLAY)"
160 T6$=" feel a pulse ":T3$="GRAPH OF AVERAGES":T7$="
to PLOT a "
170 T4$=" MONITORING ":TB$="moving average":T9$="KEY PR
ESS NOT "
180 T10$=" RECORDED ":T11$="PRESS < N >":T12$="TO
RUN AGAIN":GOTO 640
    
```

AMSTRAD


```

190 '***** MAIN LOOP *****
***
200 CLS#2:CLS#3:GOSUB 440
210 ORIGIN 15,0:PLOT X%,Y%,COL:LOCATE 2,7:PRINT SPACE$(
18):LOCATE 5,7:PRINT T3$
220 PEN 3:LOCATE 7,9:PRINT T4$:PEN 1:PAPER#4,0:CLS#4
230 LOCATE 5,24:PRINT T1$
240 IF INKEY(18) THEN 250 ELSE 240
250 LOCATE 4,15:PRINT SPACE$(14)
260 ORIGIN 0,0:GOSUB 500:ORIGIN 15,0
270 WHILE TIMER<TIMCOUNT
280 timer=timer+1
290 Y%=Y%+1:IF Y%>250 THEN GOTO 580
300 IF X%>300 THEN GOTO 780
310 IF Y%<35 THEN Y%=35
320 A$=INKEY$:IF A$=CHR$(&D) THEN COUNT=COUNT+1:GOSUB 5
60:GOSUB 1010:GOTO 290
330 WEND
340 '***** COUNT THE BEATS AND PRINT *****
**
350 PLOT X%,Y%,0:PLOT 400,150,1:DRAW 600,150
360 DRAW 600,240:DRAW 400,240:DRAW 400,150
370 IF TIM4=1 THEN GOTO 400 ELSE IF TIM4=3 THEN GOTO 78
0
380 LOCATE 27,12:PRINT"COUNT =";COUNT:COUNT=COUNT*6
390 LOCATE 27,14:PRINT"BEATS =";COUNT::GOTO 420
400 LOCATE 27,12:PRINT"COUNT =";COUNT:COUNT=COUNT*15
410 LOCATE 27,14:PRINT"BEATS =";COUNT
420 GOTO 780
430 END
440 '***** INSTRUCTIONS *****
*
450 PAPER#4,3:CLS#4:PEN 1:LOCATE 5,13:PRINT SPACE$(14):
LOCATE 5,14:PRINT T5$
460 LOCATE 5,15:PRINT T6$:PEN 2:LOCATE 5,17:PRINT T1$:P
EN 1
470 LOCATE 5,19:PRINT T7$:LOCATE 5,20:PRINT T8$:LOCATE
5,21:PRINT SPACE$(14)
480 A$=INKEY$:IF A$="" THEN 480
490 RETURN
500 '***** DRAW GRAPH *****
*
510 MOVE 35,35:DRAW 35,235,1:FOR ST%=1 TO 14
520 MOVE ST%*20+35,35:DRAW ST%*20+35,235
530 NEXT:FOR SK%=0 TO 10
540 MOVE 35,SK%*20+35:DRAW 312,SK%*20+35:NEXT:ORIGIN 0,
0:RETURN
550 '***** PLOT AND DRAW GRAPH OF BEATS *****
*
560 DRAW X%,Y%,COL::Y%=0:X%=X%+10:COL=3:RETURN
570 '***** NO INPUT *****
*
580 PAPER#4,3:CLS#4:PEN 1:LOCATE 5,15:PRINT
590 LOCATE 5,24:PRINT SPACE$(13):LOCATE 7,9:PRINT SPACE
$(13)
600 LOCATE 5,16:PRINT T9$:LOCATE 5,17:PRINT T10$
610 LOCATE 5,18:PRINT:LOCATE 5,19:PRINT T1$
620 A$=INKEY$:IF A$="" THEN 620
630 CLS#2:GOTO 780
640 '***** SELECT TIME TO COUNT *****
*
650 LOCATE 13,2:PRINT T2$:LOCATE 7,9:PRINT SPACE$(14)
660 LOCATE 5,23:PRINT SPACE$(13)
670 LOCATE 2,7:PRINT"PLOT HEART RATE OVER:"
680 PRINT CHR$(24)::LOCATE 25,7:PRINT"1) 5 SECONDS ";
690 LOCATE 25,9:PRINT"2) 10 SECONDS"
700 LOCATE 25,11:PRINT"3) GRAPH ONLY":PRINT CHR$(24)
710 LOCATE 25,14:PRINT CHR$(&F3):LOCATE 26,14:INPUT TIM
4
720 IF TIM4=1 THEN TIMCOUNT=423
730 IF TIM4=2 THEN TIMCOUNT=886
740 IF TIM4=3 THEN TIMCOUNT=4000
750 IF TIM4<1 OR TIM4 >3 THEN GOSUB 1020:GOTO 710
760 GOTO 200
770 '***** PLAY AGAIN *****
**
780 LOCATE 5,24:PRINT SPACE$(13):LOCATE 7,9:PRINT SPACE
$(13)
790 PEN 1:PRINT CHR$(24):LOCATE 26,19:PRINT T11$
800 LOCATE 26,21:PRINT T12$:PRINT CHR$(24)
810 A$=INKEY$:IF A$=CHR$(%6E) OR A$=CHR$(%4E) THEN 820
ELSE 810
820 RUN
830 '***** INSTRUCTIONS *****
**
840 CLS:LOCATE 2,6:PRINT"THIS PROGRAM WAS DESIGNED TO G
IVE A
850 PRINT" VISUAL DISPLAY OF MOVING AVERAGES.
860 PRINT" YOUR HEART IS A GOOD EXAMPLE.
870 PRINT:PRINT" FIND THE PULSE ON THE SIDE OF YOUR
880 PRINT" NECK.EVERY TIME YOU FEEL IT PRESS
890 PRINT" ENTER. THE PROGRAM WILL DO THE REST.
900 PRINT:PEN 3
910 PRINT" NOTE:ONLY APROXIMATE AVERAGES ARE
920 PRINT" RECORDED.THIS PROGRAM IS NOT ACURATE.
930 PRINT" SEE YOUR DOC IF YOU WANT PROFESSIONAL
940 PRINT"          ADVICE....."
950 PRINT:PRINT"          PRESS ANY KEY
960 A$=INKEY$:IF A$="" THEN 960
970 GOTO 40
1000 SOUND 1,400,12:RETURN
1010 SOUND 1,90,5:RETURN

```


Using Useful USER

Clyde Gittins finds the little-used PCW command USER handy for separating different applications & lining them up for LocoScript.

LocoScript uses the concept of users all the time - only it calls them groups. They help keep your work organised, and if you put a different template into each group you can create up to eight different types of documents very easily.

Groups, or users, is a fundamental facility embedded in the CP/M that sits inside the Pcw. It is the remains of the first step towards a multi-user system - hence the name "user". If you keep in mind that it was designed to allow different people to use the one system and keep their work private, it will help you understand the whys and wherefores of users.

In CP/M it is assumed that you are User 0 unless you say otherwise - this is the default. Like the man who discovered that he had been speaking prose all his life without knowing it, you are User 0 whenever you log on to CP/M. That is why if you want to operate on an ASCII file prepared in LocoScript, you are advised to place it in the first group - Group

0 - where User 0 has easy access to it.

Although you see only eight groups in LocoScript (ie: users 0 to 7) in fact the remaining users are the places where limbo files are stored - group 0 limbo user files in user 8, group 1 in user 9, and so on. So if you use LocoScript to erase a file in user 4, say, you have simply moved it to user 12. If you are erasing files because you are short of space, LocoScript may push out a file that you want, thinking it an older limbo file! In these circumstances, ERA is a safer way of erasing unwanted files.

After I dropped the right hints (my wife says my little hints are like atom bombs) my family kindly gave me the program BrainStorm for Christmas. I promptly rewarded them by burying myself in it for hours on end, and before long had produced so many files that they wouldn't all fit onto the screen when I procured the display files command. Clearly I had to sort

them out somehow - and I didn't want to dedicate another disc for that purpose when there was still plenty of room left on the first one. After a while I remembered....
USERS!

The USER command is tucked away at the end of Chapter 5.1 of the CP/M manual that came with the PCW.

The command is simplicity itself - just type USER when the CP/M prompt A> appears. You can insert the number you wish to use, and then press <RETURN> immediately and it will ask you what you want. This is the way to do it on the Every-day disk.

You can identify your user number when the system prompt appears. For example, 2M> tells you that you are User 2, and the default drive is the virtual drive called M. If you enter 0 as the user, or if when asked for the user number you simply press <RETURN>, you are back in familiar territory as User 0 with the usual prompts of A> or M>.

Getting back to BrainStorm, or whichever program you are using. Say you use it for work, your hobby and your club. You might designate them as Users 0, 1 and 2 respectively. Then when you are in User 1, for example, all you have to access to is your hobby files, without having to plough your way through any others. And if you want to, you can have files with the same name in each of your users, without them getting mixed up.

The most useful example of this is a Template.STD file. When starting up, work out which template you wish to use, then pick the user that contains that template. BrainStorm will print its own output, but on the dot matrix printer supplied with the 8000s it will do so in condensed style only. LocoScript allows you to add emphasis, your own set-out, or anything else you may like to include.

Now back to the nuts and bolts. Once entered into a particular user, only the programs within that user are accessible to you. This may be the way to go, placing a different program or application within each user.

More than likely you will want to access one or more programs common to each requirement no matter which user you are presently in. This would be like many users wanting to run a program that the 'system' possesses. It seems to me that this use of the word 'system' is confusing, as CP/M is often called a system. In fact, if you want to get back into CP/M from Basic you just type SYSTEM <RETURN> at the OK prompt.

There is a way to mark files to show that they are to be available for any user in the system - it is called 'setting the system attribute'. You would want to do this for the utilities you need to use in more than one user. For instance, DIR, PAPER, PIP, RENAME etc, as well as the program that you want.

So SET DIR.COM [SYS] will do the job for DIR, and so on. It is probably a good idea to make them Read-only as well, then you won't be able to accidentally write over or erase them. The option for this is [SYS,RO]. (That's the letter O, not the number zero.) SET will also take wild-cards if you have a number of files to set. If later you do decide that you want to erase or edit a protected file, SET with the option [RW] will allow you to do so.

DIRSYS will list the system files. When copying system files, add the option [R] to the PIP command. If you are already using the option [O] (that's the letter O again) to tell PIP to copy what it reads and not to think it is receiving instructions, simply put [OR] instead.

There are various ways of making the PROFILE.SUB file that will execute the instructions to get your start-up disk or single-purpose disk going (provided SUBMIT.COM is on the disk). Whichever way you choose to use it, just insert the command USER at a suitable point - probably best just after the SETKEYS command.

Finally, if you have a 5.25" or hard disk drive, which can store huge amounts of files, some method of keeping them in order is essential. Users is the simplest way to do this.

GLOSSARY

Disc Housekeeping - 'A place for everything and everything in its place' my grandfather used to say. A matter of knowing which files you have and where they are.

Files - A pile of data, text or instructions that you want to keep together. There are two parts to a file's name, for example Pip.COM. The punctuation is important. The first part is the name of the individual file, which is chosen by you, or its creator. The second part is the file type and must

be three letter long. In most cases there are rules as to which three letters you use.

PCW - The perfect low-cost plug-in-and-go word processor with useful computing capabilities.

LocoScript - the word processing program supplied with the PCW. A versatile program with a host of impressive features.

Template - One of said features. Once you've worked out the set-up and the lay-out of a letter or other such document that you will use regularly, save it as template.std and keep it within the relevant group. Then you don't have to re-invent the wheel.

CP/M - Ancient computer-running system, now found only in hardy survivors like the PCW. You need to know a bit about it to get the PCW's computing capabilities to work.

Group - Born with a number 0 to 7, can be christened (or re-christened) with a simple name of up to eight letters long, to remind you of the type of document that its template.std will open for you.

ASCII - 'Pure' text without any LocoScript instructions hidden inside it.

BrainStorm - A program from Reckon Software to help you organise your thoughts. Half the family could understand why I'd need something like that; the other half doubted that a program would be enough.

ERA - (and other sets of capital letters standing alone). CP/M instructions. Simple ones are in there already - others have to be read in from your system disks if you want to use them.

<RETURN> - The key so named. Where square brackets are written [] you actually have to type them in, as details of instructions have to be put inside them. These details are called options, since you don't always need them and you can use different ones according to your requirements.

INSTRUCTIONS

USER n - Tells CP/M to take you into User n. Here n can be any number from 0 to 15. It will give you access to (but will also restrict you to) User n files and system files. You don't have to use capital letters - CP/M doesn't care, capitals or smalls.

SET M:*.COM[SYS,RO] - Tells CP/M to turn all (that's the star) COM (ie: instruction) files in drive M into system files (that's the SYS) that can't be accidentally written over, (the RO stands for read only). Note the space after the SET, and then no more spaces. If you set more files than you intended, it is quite easy to set them back again.

SET *.*[DIR,WR] - Tells CP/M to turn all the system files in the default drive into directory (ordinary) files and all of the read only files into read-write ones.

DIR A: [USER=ALL] - Tells CP/M to list all the files in Drive A. And it does, the directory files and the system files, in alphabetical order with details of sizes etc. If a particular User doesn't appear, it means that there are no files in that user. Note the space after the colon.

PIP A:=M:PROGRA.COM[R] - Tells CP/M to copy (that's the PIP) the named file, in this case progr.com, from Drive M to Drive A, and to look into the system files to find it. Without [R] PIP gives up too soon. Note, this time no spaces.

PIP M:DATA.ONE=A:MED.DAT[G3] - Tells CP/M to copy the file called med.dat from User 3 (that's the G3) into Drive M and change its name to data.one. ■

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Dust Cover: DMP200/2160/3160 printer	17.00
Keyboard Protector for 6128	34.05
Mouse mats	19.95
Ribbons: Black Nylon for 2000/2160/3160	19.95
Ribbons: Black Nylon for DMP4000	19.95
Screen Filter	29.95

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Individual Monthly Type-ins on tape	5.00
Year Disc 01 - Type-ins from Iss. 1 to 12	50.00
Year Disc 02 - Type-ins from Iss. 13 to 16	22.50
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Year Disc 14 - Type-ins from Iss. 61 to 64	25.00
Year Disc 15 - Type-ins from Iss. 65 to 70	25.00

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Centronix Printer Cable	22.95
J/Stick - Champzon ECP2000: 4 fire buttons	39.95
J/Stick - Konix Navigator: hand held	39.95
J/Stick - StarBlazer: robust with 3 fire buttons	44.95
J/Stick - StarCursor: 4- or 8-way actionbuttons	54.95
J/Stick - StarFire: fully microswitched	39.95
J/Stick - Winner 220	34.95
J/Stick - Zipstick Elite: hand held, 1 button	29.95
J/Stick - Zipstick Superpro: 90% British made	39.95
Joystick Splitter (allows use of 2 joysticks)	17.50
Memory expansion - 256k for 464/664	309.00
Memory expansion - 256k for 6128	309.00
Memory expansion - 64k for 464/664	179.00
Silicon Disk - 256k for 464/664	329.00
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Academy	65.95
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Classic Collection 2: with Caverns, Skiing & Climb-it	49.95
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Lancelot	39.95
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Cardbox Plus: card file system database	99.00
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Masterfile 8000: very fast relational database	139.00
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Art Gallery 2 (needs Printmaster Plus): pictures of flags, letters, people etc.	50.95
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Graphics, The Universe: tools for graphics output	85.00
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Print Master Plus: banners, cards, signs etc.	59.95
Stop Press: versatile desktop publishing	149.00
Stop Press with AMX Mouse and interface	299.00
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PCW LOCOMOTIVE PRODUCTS

24 Pin Printer Driver PCW 8000	74.95
24 Pin Printer Driver PCW 9000	74.95
Extra Printer Driver 8256/8512	69.95
Keyboards disc 8256/8512: configures keyboard layout	69.95
Keyboards disc 9512: configures keyboard layout	69.95
Locofile 8000: LocoScript2 resident pop-up database	125.00
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Introduction 8256/8512 & Loco1	59.95
Introduction 9512 & Loco 2	59.95
Introduction CP/M on PCW	59.95
Touch 'N' Go Typing Tutor	69.00

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 Keyboard Protector: 9512 34.95
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 Ribbons: Black Nylon 8000s 19.95
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 Screen Filter 29.95

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Advanced User Guide 9.95
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 Whole Memory Guide 30.95

BOOKS ON LOGO

Logo Pocket Book 17.95
 Practical Logo 27.95
 Using Dr Logo 37.95

PCW BOOKS

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 Choosing and Using CP/M software 35.95
 CP/M Plus Handbook with GSX supplement 52.95
 LocoMail User Guide 54.95
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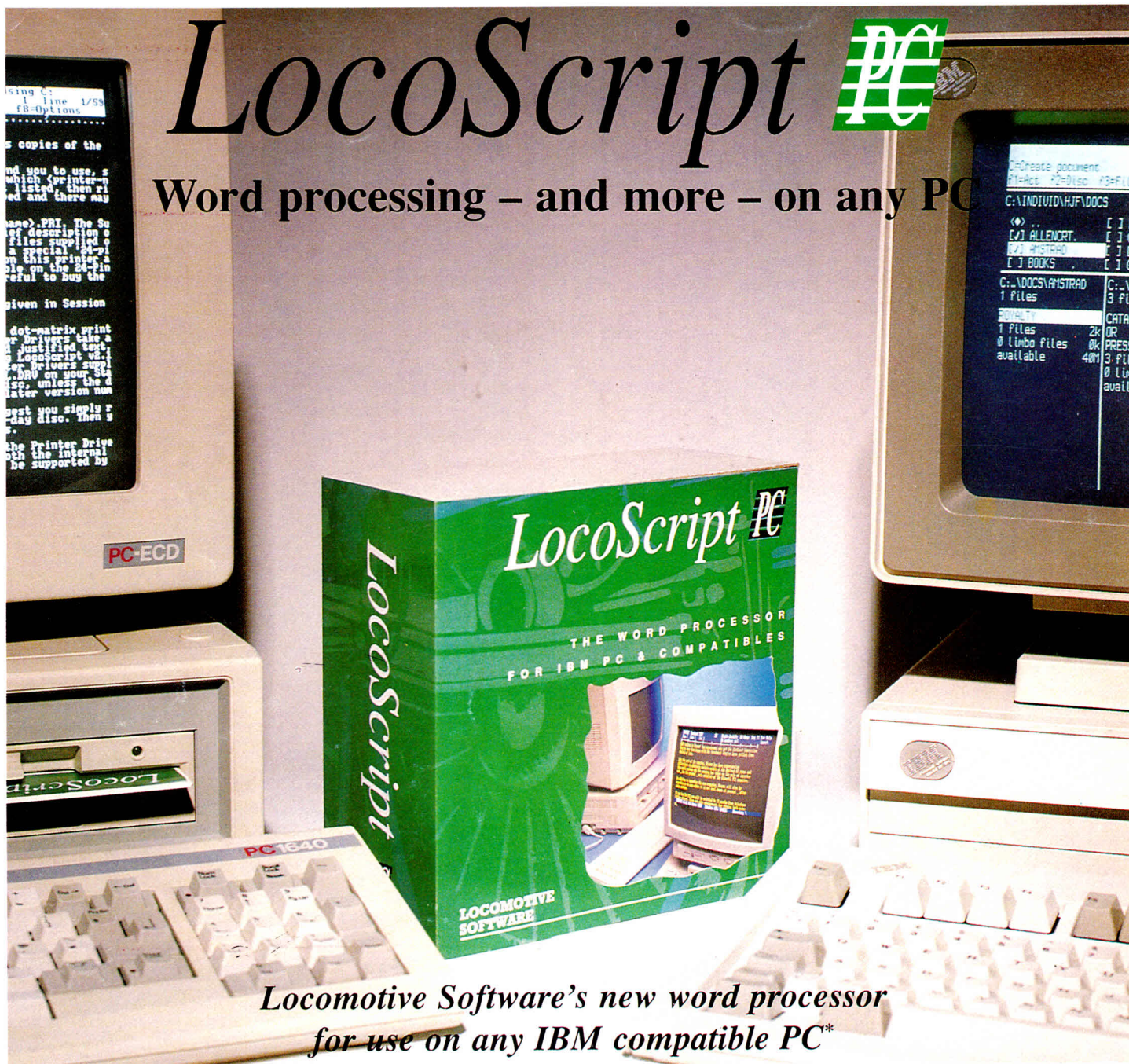
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