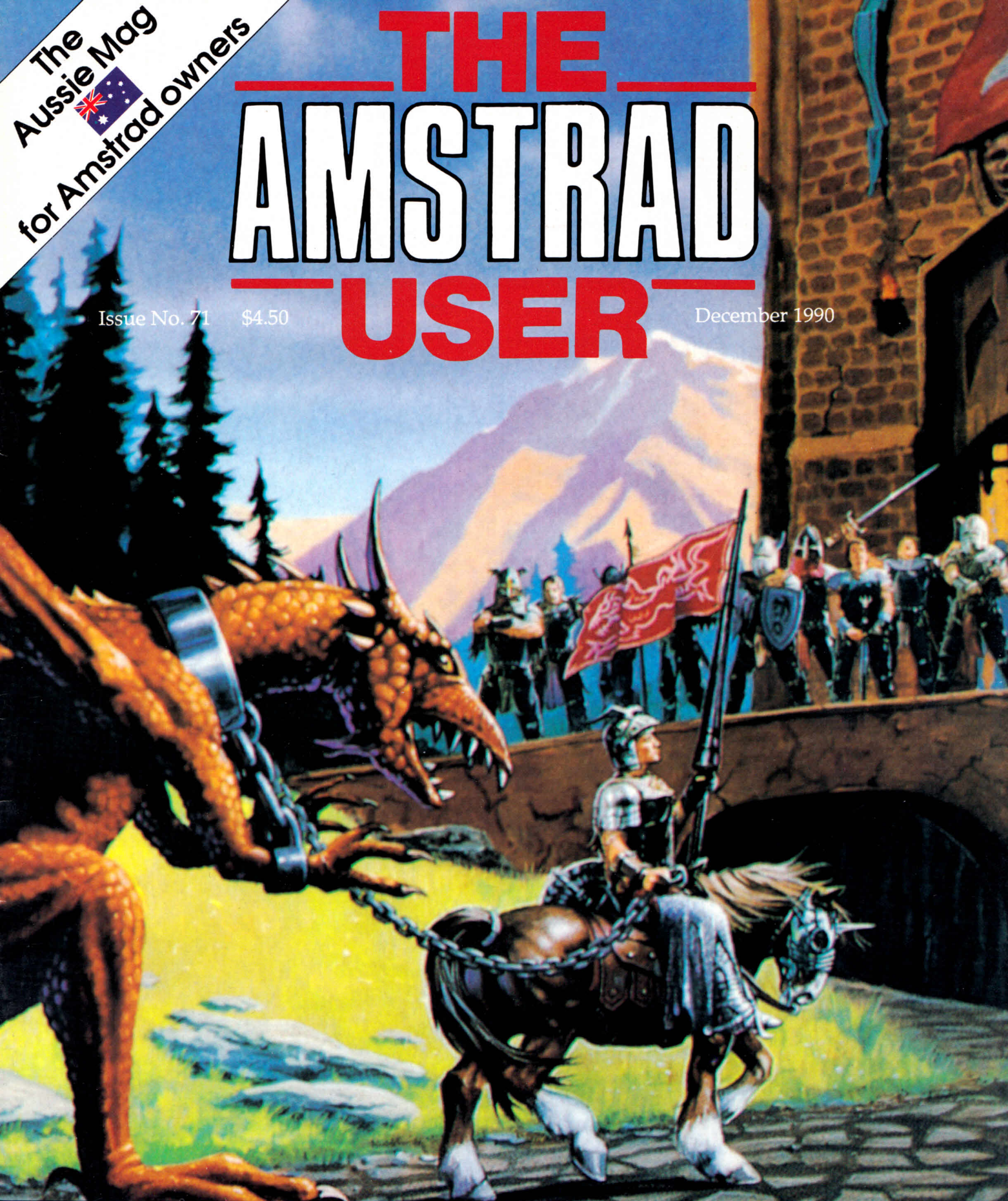


The Aussie Mag
for Amstrad owners

THE AMSTRAD USER

Issue No. 71 \$4.50

December 1990

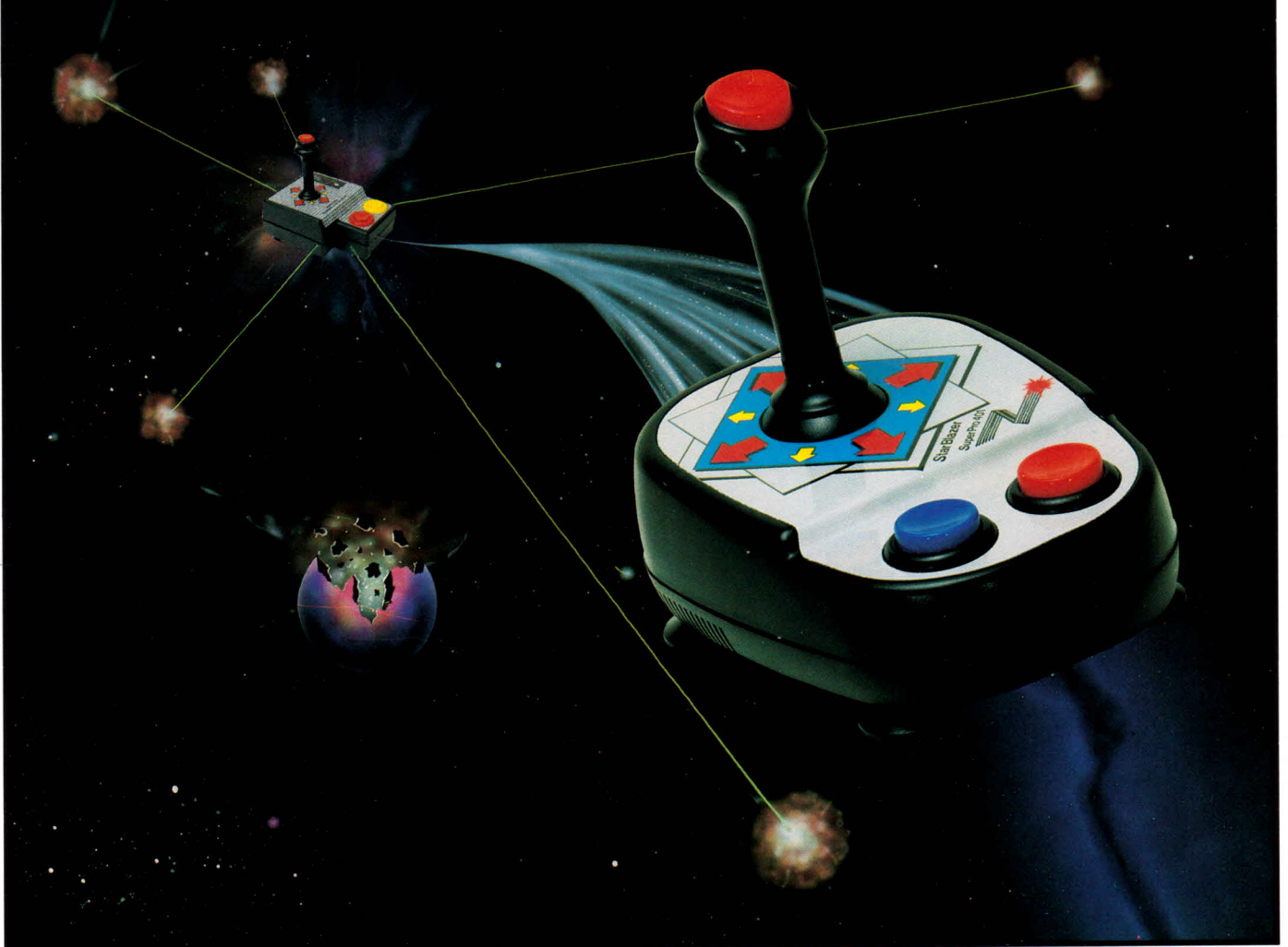


FOR THE NOVICE & EXPERIENCED USER

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STARBLAZER

ANOTHER STAR IS BORN



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For easy comfort game control

MICROSWITCH OPERATION

BUTTON CONTROL SWITCH

(X) (X) (X) (X) (X) SEGA

Left Position:
Buttons 1, 2 & 3
Middle Position:
Buttons 1 & 2 operate
Right Position: Sega operation

THREE PUSH BUTTONS

Can be used with any game

(2) & (3)

SOLID CONTROL

Four fast grip suction caps

THE AMSTRAD USER

Issue No. 71 - December 1990

FRONT COVER: Not St. George bringing home the bacon, but a picture from the box cover of King's Bounty.

Letters - Your views, advice and comments	2
News Break - What's news, the latest software and much more	6
Jumped on for Joy - A review of two new joysticks from Multicoïn	8
Discussing Disks 1 - Part One of an instructional series on CPC/PCW disk drives	10
Let the Process Begin - Paul Gerard introduces the beginner to word processing	12
Guide to Machine Code 1 - Part One of a guide to Machine Code programming	16
A Look at Logic - A look at the logic behind computer programming	18
The Facts of Life - Joseph Elkhorne examines John Conway's Life program	21
Complete Entertainment - A review of a broad game compilation for the PCW	24
A Clean Exchange - How LocoScript 2 makes text exchange easier	27
Entertainment Centre - CPC and PC games and compilations reviewed in this issue:	
<i>All Time Favourites</i>	30
<i>The Dark Heart of Uurkrul</i>	32
<i>Second Front</i>	33
<i>Bloodwych</i>	34
<i>Oriental Games</i>	35
<i>Arcade Bonanza Pak Vol.2</i>	36
<i>The Thrill of Winning Vol.2</i>	38
Commanding Graphics 2 - Part Two of the GW Basic graphics series continues	40
It all Adds up - Accounting software to suit both home and office environments	44
Gumboots Oz - A fun and educational program for children aged eight and up	46
Managing AddtoDOS - The "beginner friendly" AddtoDOS program	48
Christmas Compatibles - Chris Collins' regular review of PD/Shareware	50
Classified Ads - Just \$7.50 reaches over 8000 Amstrad users in Australia every month	52
Public Domain Software - PD software for all Amstrad users	53
The Amstrad User Mail Order Service	
Heaps of Software for all Amstrads, plus Consumables, Ribbons, Disks, Disk Drives	
Books and Magazines	56

For tape subscribers, CPC programs appearing in this month's magazine can be found at the following positions:

Side 1: DAYSOLD - 8

Side 2: BLANK

ADVERTISER'S INDEX

Multicoïn	IFC
Pactronics	5

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

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From time to time, some articles appearing in The Amstrad User will be reproductions from UK publications Amstrad Action, 8000 Plus and CPC Computing (formerly Computing with the Amstrad). The first two are printed under an agreement between Strategy Publications and Future Publishing Ltd, Bath, and the latter under an agreement with Database Publications.

The subscription rate (for Australia) is \$45.00 for 12 issues of the magazine only, or \$80.00 for 12 issues of the magazine plus tape (for CPC range only) containing programs appearing in that issue. Postage is included in the above prices. For subscriptions to New Zealand, PNG, Solomon Islands or Vanuatu please add \$24 airmail. Other overseas prices available upon application.

Please note that whilst every effort is made to ensure the accuracy of all features and listings herein, we cannot accept any liability whatsoever for any mistakes or misprints. Contributions are welcome from readers or other interested parties. In most circumstances the following payments will apply to published material: Cartoons \$10.00 and a rate of \$15.00 per page for programs, articles etc. unless otherwise previously agreed.

Contributions will not be returned unless specifically requested coupled with a suitable stamped and return addressed padded bag (for tapes or discs).

The Amstrad User is an independent Australian magazine, in no way affiliated with Amstrad or their Australian distributors or any dealer in either software or hardware (The Amstrad User Shop excepted).

After nearly six years in print, The Amstrad User will get a major facelift next month and a change of name. Established readers and subscribers will have seen the magazine start in February 1985 when the tape based Amstrad CPC464 was the only computer in the range. Since that time we have seen the release of: CPC664, CPC6128, PCW8256, PCW8512, PCW9512, PC1512, PC1640, PPC512, PPC640, PC2086, PC2286, PC2386, PC20, PC1286, PC1386, ALT286, ALT386SX, PC3086, PC3286 and the PC3386SX, quite apart from all the printers and accessories.

Much to our disappointment and many others who have written to us, Amstrad Australia dropped the CPC range soon after they established themselves in Sydney some eighteen months ago. They also dropped the PCW8512. Despite the fact that the parent company Amstrad plc in the UK has just launched a new and exciting CPC range including a console unit.

Amstrad Australia are refusing to import them, and are concentrating on the PC compatibles. This leaves a market which has a fast decreasing CPC population and a correspondingly fast increasing PC market.

After we analysed The Amstrad User over the past 12 issues, it was clear that

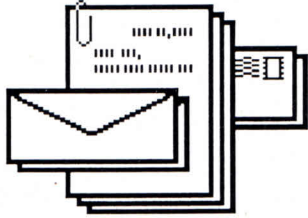
much of the PC content was not necessarily Amstrad PC specific, it could apply to any IBM compatible. There was no question that the CPC and PCW content had reduced to make room for the PC, but this in the main was due to lack of suitable material from this area.

The answer was equally clear - continue to support the CPC and PCW readers but at the same time open the magazine to other PC clone users. Hence a change of name to "THE PC MAG". Apart from the name change and a shake-up in the layout, readers will notice little change in the content, except perhaps, more emphasis on helping beginners. For example, a new series on Machine Code will continue for CPC users in the January issue, whilst for PC users there will be a tutorial on MS-DOS. Games reviews will be divided to stop confusion as will the Mail Order lists.

It was a hard decision to make, but we know our readers will share in the benefits which are bound to ensue from a healthy and well supported magazine.

The Editor.

Letters to the Editor



A monthly selection of your comments, hints and tips, advice and news - all shared for the benefit of Australasian Amstrad users.



I am writing to ask you about Codename: Iceman as I get to a particular point and then can't go any further. The game tells me "Out of heap space" and displays the following box on screen;

```
Debug
Russian sub
add
acc:0001 sp:1800 pp:1866

SCI Version 0.000.668

shift - shift-D continues
```

I thought I didn't have enough memory until I tried it on a greater computer and it does the same thing. I have a PC1512 computer. I took the game back to the shop and tried to explain what went wrong but they just gave me a new copy of it.

I have got Debug on my DOS disk which says that there is an error on it. I would appreciate it if you could help me out with this as I like Iceman very much.

R Verschelden, Floraville, NSW.

The box that you see displayed on your screen is actually a note for the programmers' reference indicating a bug in the program and will not help you out at all. Unfortunately we have not previously heard of this particular problem with Codename: Iceman and therefore are not in a position to advise you. However, Ozisoft, who

distribute the game, are more than likely to have heard about it if it is a common problem and so should be contacted. If Ozisoft are unable to assist you then I strongly suggest that you contact Sierra direct, by writing to the Sierra Sales Department in the United States, at P.O. Box 485, Coarsegold, CA, America, 93614.



I would just like to make a few comments on the October issue of TAU. Firstly, it was very pleasing to see a compliment from Matthew Young for my GW Basic program which you recently published, it's nice to know that my work is appreciated.

Secondly, this is nothing against Barrie Eaton, but is there a lack of CPC programs coming in so that you find it necessary to publish adventures every month. If these adventures live up to their length then most people would barely have time to solve them let alone start typing a new one next month.

A note for other GW programmers who want more listings; try converting some of the programs from past issues if you have them. When considering converting a program, just browse through the listing and avoid programs that used complicated graphics and Machine Code routines. Also, remember to change the X,Y coordinates in any LOCATE statements.

Finally, I'd like to congratulate you on an outstanding magazine, keep up the good work. If anyone out there can get their hands on the very first issue of TAU, then it is well worth looking at just to see how far this magazine has progressed in its relatively short history.

J McNeill, Chatswood Hills, QLD.



Six months ago I started to get interested in computers. At the age of 50 and not knowing anything about them I asked for advice from sales representatives.

On the information and advice put forward it was decided that an Amstrad PC2286/40 was the best value. With it came a software package containing Microsoft Excel, Word 5, Windows, and GW Basic. I have since then added PC Tools and Harvard Graphics.

Up to this time I have made up several files for home, such as Budget, Mortgage rates etc.

I feel the above files are very basic and now wish to improve my computer skills. To this end I would like to know if there are any books or magazines which will give projects or exercises to help me obtain these skills. I would also appreciate any further information you can possibly pass on to me.

J Heyworth, Milperra, NSW.

Funny you should ask, it seems that the answer to your problems

is about to stand up and slap you in the face! Apart from the many books available for the PC, (not necessarily Amstrad specific), if you read page two of this magazine you will see that *The Amstrad User* itself will, as of next month, be catering for just such needs. "The PC Mag" will be emphasising in particular articles of interest for the beginner home computer user.



Being an elderly novice in computing and just beginning with assembly, I have been following with interest the articles in *Serendipity* by Joseph Elkhorne.

Some time ago, a friend posted me a listing from an Amstrad magazine which I think has ceased publication. Now as I have been unsuccessful in assembling this I have come to the conclusion that it may be a .PRN file and not an .ASM file. Could yourself or Mr. Elkhorne please verify this for me.

Maybe some time in the future you may be able to publish a similar program, along with a circuit for an Add-on ROM programmer suitable for the CPC 6128. If this is not possible, maybe someone out there has a circuit they may care to share with me (all reasonable costs will be met) or alternatively information as to where I may obtain such a program. Thanks for such a great magazine.

Brian Pink, Bicton, WA.

The listing that you provided, as with all technical queries of this nature, will be passed on to Joseph Elkhorne and will be answered as soon as possible.

PEN PALS

Once again Pen Pals has had to be omitted from the magazine due to lack of space available. However, below is a list of names that

have been added to the established list since the publication of the October issue of TAU;

Garry Gibson (PC1640)
8 Simpson Avenue
Coonamble
NSW 2829

Angus Waddell (PCW 8512)
RMB 2870
Maryborough
Victoria 3465

H Nagra
89 Donton Avenue
St Albans
Vic 3021

All correspondence should be addressed to:
The Editor, The Amstrad User,
1/641 High Street Road,
Mt. Waverley, Vic 3149.
We regret we cannot give any personal replies.



We're tired, run down, pooped, knackered, exhausted, overworked, dead to the world, worn out... and GONE! We're taking a holiday!! You can ring all day, send letters by the dozen, knock on our door or fax us silly... but we will not answer you, because from Friday the

21st of December
to Monday the
7th of January

our offices, both Mail Order and Editorial, will be closed. You'll just have to have a Merry Christmas without us!

Great New Games for a MERRY CHRISTMAS

from  **Pactronics**



AMSTRAD CPC

1. FUN SCHOOL 2

There are three different age groups, 2-6; 6-8; and 8 up. Our programme comprises multiple subjects presented in a game type format. Animation and sound effects feature strongly to retain the child's interest (disc and tape).

2. MAGIC SWORD

An educational programme with a twist. First the child reads the full colour book and the programme then takes up the story. An ideal gift for the up to 10's.

3. THREE BEARS

A new and very different version of the old story in a children's graphic adventure game.

4. MAZE MANIA

Pacman's nightmare! A great new colourful game that will keep you happy all through Christmas.

5. SNOOPY

A cool computer game! The full adventure in 100% graphic form much like an interactive cartoon.

6. ALIEN SYNDROME

One of the most popular arcade games of the decade. This coin-op version has successfully captured the atmosphere of the original.

7. GRAHAM GOOCH'S TEST CRICKET

One of the best cricket simulations ever produced.

8. PCW

Two great new collections for Christmas called THE CLASSIC COLLECTION 1 and CLASSIC COLLECTION 2. Each Collection has three great games including MAZE, SHOOT EM UP, SPORT ETC.

IBM

1. CARDINAL OF THE KREMLIN

A great Tom Clancy follow-up to The Hunt for Red October. This will probably be a best selling game for 1991 that is available now! We guarantee you non-stop excitement right through the Christmas and New Year Holidays.

2. SHERMAN M4

Described by The Sydney Morning Herald as the best tank battle game they had ever seen.

3. STORMLORD

A raving success on the AMIGA now available on the PC. Stormlord is one of those games you never want to put down.

4. TENNIS CUP

The ultimate tennis simulation now available for the IBM. Singles, Doubles, International Games etc. - great sporting fun.

5. BRAINY PROGRAMMES

For the sophisticated games lover we also have CHESS, BRIDGE and WALL STREET RAIDER now available.

6. FILM & T.V. GAMES

WHEEL OF FORTUNE, FAMILY FEUD, MIAMI VICE, SUPERMAN, AVOID THE NOID, BILL & TED and many more.

SPECIAL!! SPECIAL!! SPECIAL!!

Buy any Pactronics product for CPC, PCW or IBM between now and Xmas, send in your warranty card with "Xmas Present" written on it and we will send you a free game or free head cleaner (Please stipulate which you would prefer).

FOR A FULL LIST OF ALL OUR GAMES FOR THE ABOVE COMPUTERS, JUST SEND A STAMP AND YOUR NAME AND ADDRESS TO ANY OF THE PACTRONICS OFFICES.

AVAILABLE FROM:

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FOR YOUR NEAREST RETAILER PLEASE CONTACT:

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QUEENSLAND: Pactronics Pty Ltd, 12 Stratton Street, Newstead 4006 - (07) 854 1982
SOUTH AUSTRALIA: Please contact Head Office or Victoria
WESTERN AUSTRALIA: Pactronics WA, PO Box 257, Willetton 6155 - (09) 354 1122
TASMANIA: ESP Marketing, 52 Elphinstone Road, Mt. Stuart 7000 - (002) 78 1606
MAIL ORDER: The Amstrad User, 641 High Street Rd, Mt. Waverley, 3149 - (03) 803 9661

News Break



Our monthly update on the gossip, news, releases and the general Amstrad scene from both home and abroad.

AT LAST - dBASE IV 1.1 RELEASED

dBase III pushed Ashton Tate well into the front of competitors when it was first released a few years ago. Then came the ill-fated dBase IV 1.0. Instead of maintaining their lead, Ashton Tate appeared to pay little regard to competitive products which by now were introducing a host of attractive features. Version 1.0 was labelled a poor performer with heavy memory usage, a product with bugs and lacking features.

Nearly two years later, version 1.1 has been released. Whilst it still lacks the promised developer's compiler, the memory requirements have been reduced from 516k to 450k allowing it to be used more sensibly in a network or with Windows. The ability to use Extended Memory is still not

available with 1.1, but a disk caching program called HyperDisk (from Hyperware) has been bundled by Ashton Tate for users with Extended or Expanded memory. However, it won't necessarily end the memory full error messages when you know you have spare RAM.

Users will also notice new and faster conditional indexes (INDEX ON... FOR...) than SET FILTER and an organise menu in the Edit and Browse screens for building and switching between indexes. Some twenty extra commands have been added to SQL when ON. Alas though, there's still no data dictionary.

Anxious to put things right, Ashton Tate are giving 1.0 users a free upgrade with \$35 being charged for freight and disk. dBase III Plus (or before) users can upgrade for \$299 plus \$35. Otherwise Version 1.1, in either 3.5" or 5.25" format, will cost around \$1250. If you've already got version 1.1 and need a version to support 5 users, you'll be up for \$1575. The Developers Edition costs around \$1995.

dBase IV 1.1 is still the major database package with a full-featured programming language, report and application generator, screen and query designer, and a debug-

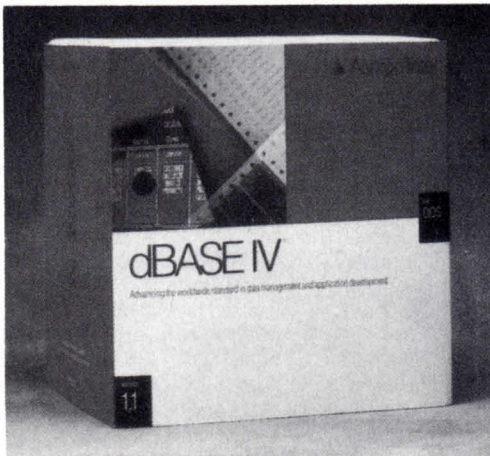
ger. Although it is slimmer than the previous version it is still a massive package. Ashton Tate have tried hard to clean-up their act, but the competition is stiff.

CHRISTMAS HOLIDAY CLOSURE

Producing a monthly magazine and providing a Mail Order Service gives us only one opportunity a year to take a break. That time will soon be upon us. So, unless you enjoy listening to festive music on a message machine, it would probably be a good idea not to ring us between 20th December 1990 and 7th January 1991.

At this time of year there is normally a massive run on stocks, so it is always a good idea to quote alternatives if you can. You've also got to allow for extra delays in posting times. This means that orders we receive up to 12th December will be processed and supplied (if stocks allow) and should get to you before Christmas. Any received after this date cannot be guaranteed. It's also helpful to quote a phone number to contact you during the day if necessary.

For Melburnians, our retail outlet on the corner of Blackburn and High Street Roads will close at 5.00 on Monday 24th December and re-open at 9.00 on Wednesday 2nd January.

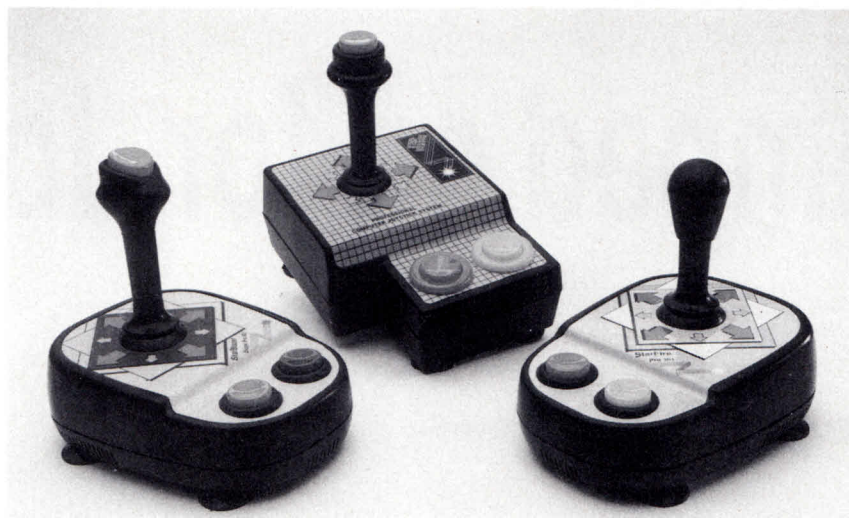


TWO MORE STARS ARE BORN

Multicoin Amusements have just released two new joysticks for, amongst others, the Amstrad CPC.

They follow closely in the footsteps of their highly successful StarCursor which has sold world wide.

The StarBlazer and the StarFire are both very robust and you will find a full review of them on pages eight and nine of this month's magazine.



WORD FOR WINDOWS

Microsoft have released Word for Windows version 1.1 to take advantage of the new graphic environment provided by Windows 3. Apart from better file conversion capabilities between other Microsoft products, it features an enhanced user interface providing a 3-D impression to the status and icon bars and dialogue boxes. Even 'buttons' look as though they are being depressed.

It also features a PCX colour filter allowing colour or mono images to be converted into grey scales. This means that users can import graphics using the PCX file format from such products as Corel Draw and Micrografx Designer. Mail merging is also made easier with templates for prompting users to insert mail merge fields into documents via dialogue boxes.

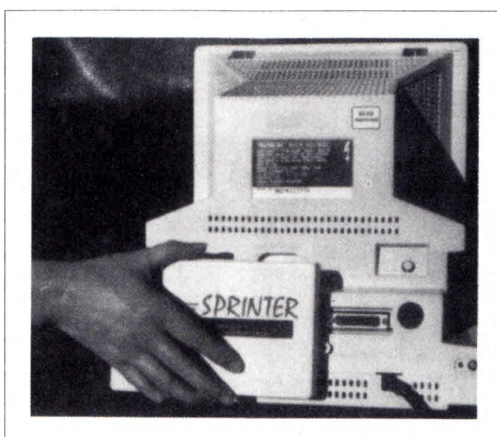
Whilst on the subject of Microsoft, they celebrate their fifteenth year with a record turnover of \$1.18 billion for the 1990 fiscal year, making them the first PC software supplier to break the \$1 billion annual sales figure. Window 3 has probably helped, with more than 500,000 copies shipped since May. And it all started with just one product in 1975 - Microsoft Basic.

PCWs PROGRESS

The PCW is a very successful member of the Amstrad range of computers in the UK (although much less so here in Australia). It is inevitable that rumours will abound from time to time. The latest concerns the scrapping of the current range (the 8256, 8512 and 9512) to make way for a new PCW next year. It is thought that the new computer would have a 3.5" disk drive and have CP/M and LocoScript built into the ROM. Of course, Amstrad remain silent about it, but didn't deny it either. They merely said that "there are no plans to change the specification of the PCW".

Two major add-ons for the PCW have just been announced by Cirtech in the UK. The first is an accelerator pack called the Cirtech Sprinter and claims to double the operational speed of a PCW by adding a second micro-processor to the machine. This

means much faster scrolling, reformatting and searching, and that background printing will no



longer effect the speed of the PCW. It also means that with this unit attached, a PCW can run faster than a standard PC compatible. The unit is fully compatible with all PCW software, and doesn't need any software as it attaches

to the expansion port on the back of the computer. It also comes with optional built-in RAM expansion (256k to 1 megabyte).

The second add-on is the Cirtech HardPak, an hard disk which also plugs into the expansion port. Again, it is fully compatible with all the Locomotive products and all standard CP/M programs. It will be available in either 20 or 40 megabyte units and has the capacity to store over 2000 floppy files. It uses a 2.5" hard disk which requires little power to operate, and will shut down automatically if unused for long periods of time, restarting when necessary.

It will even eliminate the need for a start-up disc! Australian costs have not yet been released, but it is likely that the Sprinter will cost around \$449 and a 20mb hard disk a staggering \$1600.

Jumped on for Joy



Two new joysticks from Multicoin go under some of the toughest accuracy and durability tests - and live!

Nearly two years ago, Multicoin Amusements launched its Australian "Star Cursor" joystick into a computer games industry cluttered with imported joysticks of different shapes and sizes, prices and reliability. However, Multicoin had the edge over the competition as it was already a well known supplier of heavy-duty joystick units to the games arcade industry, and the knowledge gained in developing this area was transferred to the Star Cursor production line. This resulted in an extremely robust Australian-made joystick with a three-year guarantee; not many others could boast the same.

From this impressive pedigree, Multicoin planned three more joysticks; two for non-IBM compatibles such as the Amstrad CPCs, Ataris, Commodores and Segas; and the other for IBM and compatibles. The latter is yet to be released (probably in January 1991) and will feature a revolutionary and patented internal design that could put it 'light' years ahead of the rest. We will have to wait and see.

Already in production, and beginning to land on the shelves in many computer shops and the like are the two 9-pin connector joysticks for the CPCs - the StarBlazer and the StarFire.

THE STARFIRE

This is the cheaper brother of the

two new Stars and will retail at \$39.95. The unit consists of three basic sections. The base, with a 15mm by 11mm footprint, has four fast-grip suction pads which hold the assembled unit very firmly to most flat surfaces.

The top section sports a decal to, I suppose, advise newcomers to joysticks of the directions in which the shaft can be pushed judging by the arrows all over it! Not necessary of course, but at least it's colour coordinated with the yellow and red fire buttons and generally "finishes off" the product. The top section also houses the shaft or "stick" itself which appears to be made of extremely durable high-impact plastic. It's a shade under 8cm in length and should suit all but the large handed users. In our "wet test" to simulate a sweaty hand, the slightly rough surface texture of the shaft and dome atop still provided enough friction to eliminate a slipping hand or fingers, very important at the vital moment a chink in the end-screen baddy's armour is spotted. The shaft is seated in a flexible rubber ring which ensures that it always return to the centre position when released.

The innards (that's the gubbins inside the casing) is a neat sandwich of microswitches. There are six of them in total, four responding to the movement of the shaft and the other two sensing depressions of the two base buttons.

Microswitches are by far the most reliable and accurate way of handling user thrusts and stabs. You can always check to see if they are fitted in any joystick by the tell-tale clicks as the shaft is moved around.

The arrangement of the directional microswitches seems to have dictated that the shaft itself is not placed in the centre of the completed unit - it is in fact about half a centimetre to the left of centre. Our tests showed that this was not a major concern, and did not affect the performance of the user at all. However, it was argued (rather weakly) that left-handed users could have a slight edge over their right-handed opponents when it came to using the bottom right fire button. (*Sounds like sour grapes to me - Ed.*)

Next to where the cable enters the unit is a small switch providing a choice of three modes. In the first position (on a CPC), both base fire buttons are operable. The second position removes the right hand button from your armoury. The third position is meant to be used when the joystick is attached to a Sega. However, it performs exactly the same on a CPC as the second position. As far as Amstrad users are concerned, the switch can be left in the first position permanently.

THE STARBLAZER

This unit is a little more expensive

than the StarFire, and will cost \$44.95. Apart from the shaft and decal colouring, the unit is the same size as the StarFire and in fact, is produced from the same mould. It has six microswitches and two base buttons plus the button mode switch on the back-again, the same as the StarFire. The question is 'What do you get for the extra \$5?'

The answer lies in the shaft. For a start it's about nine and a half centimetres long (that's 1.5 cms longer than the StarFire). This means that a large hand will fit a little more comfortably on this unit. It also has an additional fire button on the top of the shaft performing the same function as one of the base buttons.

Another neat touch is the ability to swivel the shaft though 180° in order to get just the most comfortable position possible to wreak maximum havoc and revenge upon the aliens/ninjas/aircraft etc.

The button mode switch performs the same function as on the StarFire, except that the shaft button is always available for use.

THE TEST

We've already mentioned the "sweaty palm" test - no slip ups here. The "I didn't see it under the newspaper when I stepped on it" test - both units withstood the foot of a 14 stone Homo Sapien from a height of 30cms without any damage. Then there was the

"It's my turn - no it's not" test where the units were subjected to intense pulling by the cable and the shaft. The cable was the first to give up, but the shafts stood up to the trial. A similar test, the "it's stuck to the computer desk Mum" saw the shaft stand up to being

then used to play a few games to see if our "tests" had effected them in any way. We tried a few shoot 'em ups, then moved on to some flight simulators and car track games. The units proved to be none the worse for their ordeal and performed just as well as they



used as a lever to remove the unit from a really flat surface. The units were also subjected to the "Making the green man flash at the pedestrian crossing" test which involved hitting the fire buttons with much more than the average pressure over a long period of time. Finally, the "orbital sander" test, the ultimate in joystick destruction tests. This consists of arranging a jig with an orbital sander (without sandpaper) attached to the shaft of the joystick so that when the sander is turned on, the joystick is put through a violent shaking centred on the shaft. Naturally, this test has to be carried out in a place unlikely to upset neighbours sensitive to noise!

After all that, the joysticks were

did before the "test". Used on the desktop or hand-held, the Star twins performed with equal success.

THE FINAL ANALYSIS

Once again Multicoin have produced two joysticks of good quality and high durability. They passed our "tests" with flying colours with the exception of the cable which we believe should be clamped more securely inside the unit. The joysticks have been subjected to far more misuse than would normally be expected and we doubt whether anyone else would have gone to the trouble of "destruction testing" these or any other joysticks as we have. It only goes to prove that we did a thorough job... and so did Multicoin. ■

Discussing Disks - 1



The first in a series of articles showing CPC and PCW Discophiles how to use their disk drives to the best effect.

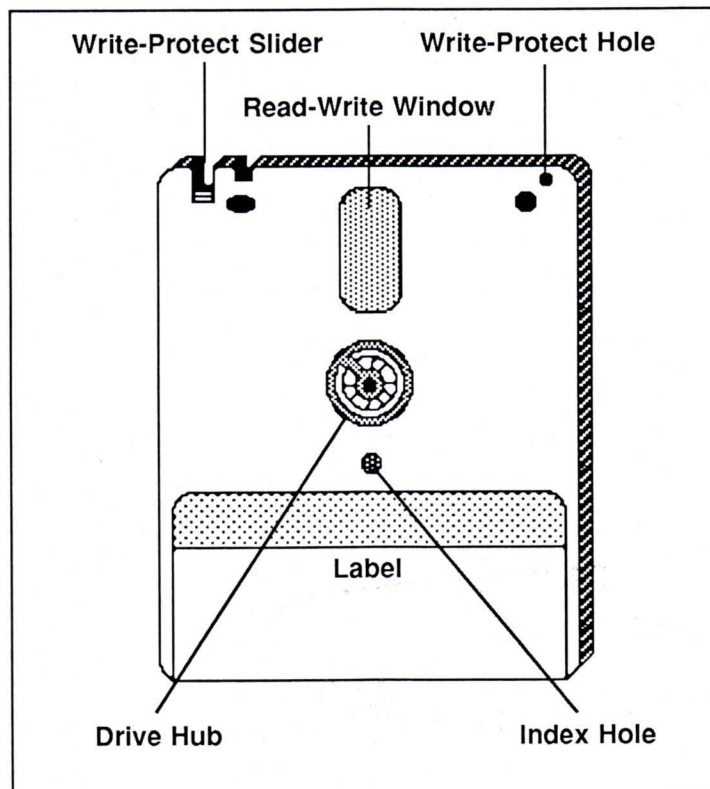
If you are new to computing, it probably isn't strange to think that the 3" disk you place in your Amstrad disk drive should be called a hard disk. After all, they call the larger 5.25" PC-type disks "floppy", and the 3" is certainly not that. On the contrary, it is quite rigid! Nevertheless, it is not a hard disk in general computer terms, it is still a floppy.

You see, apart from the physical size and capacity, both the 5.25" and the 3" (and the 3.5" while we are mentioning disk sizes) contain a thin plastic material coated on both sides with a magnetic layer, very similar to the coating you would find on a magnetic tape. This plate is in turn enclosed in a protective casing; the 5.25" variety in a rather flimsy material making it a true "floppy"; while the 3" (and 3.5") is encased in a much more robust housing. Naturally, the 3" and 3.5" casing affords quite a deal more protection to the thin magnetic disk inside than a standard 5.25". On the other hand they are more expensive, but that is another story.

Back to the 3" disks used in Amstrad CPCs and PCWs. All of them are double-sided with the second side accessed by turning the disk over, and each side is treated as separate entities. There

these computers and format the disk to the 720k size, don't turn it over later and format the other side - you'll wipe any data from the disk.

As there cannot be too many people who have a hard disk attached to their CPC or PCW, there is little point in going into much detail about these mega-disk drives. It is probably sufficient to say that they can hold much more data and are much faster than floppies. Hard disks are genuinely "hard", as the magnetic coating is put on to an aluminium platter rather than plastic. Thus the distinction between floppy disks and hard disks.



is an exception (as usual) relating to the PCW8000 "B" drive and the 9512 drive. The disk does not have to be turned over as the drive has the capability of reading both sides via the dual read/write heads. Hence, if you have one of

"A" drive disks consist of 40 tracks and are described as single density, while the PCW "B" drive disks have 80 tracks and are described as double density.

Regardless of the number of tracks a disk might have, each

track is divided into nine sectors, and in turn, each sector has an identifying 'marker' so that the computer knows exactly where the read/write head is positioned. It is easy to see, therefore, that using disks is a far quicker method of storing and retrieving data than using tapes. As each sector can store 512 bytes (or half a kilobyte) of information, a quick calculation will reveal that one side of a 40 track disk is capable of storing 180 kilobytes of data, or 180k for short. In practice though, you will find that the actual amount available for normal storage is slightly less as a small percentage of each disk is reserved for a particular purpose.

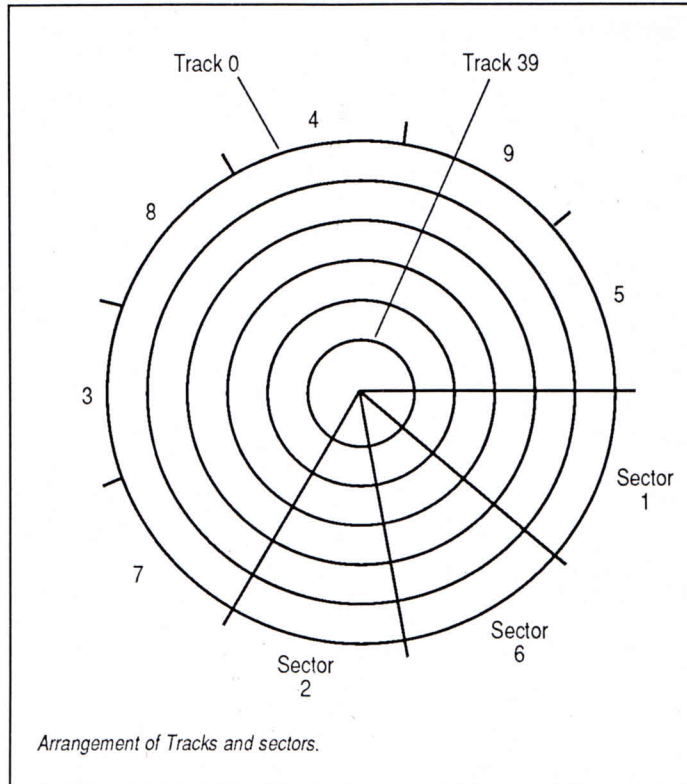
When you buy a new disk the tracks and sectors have not been recorded as yet so it is always necessary to "format" the disk first. This is generally done with a program called "Disckit" (or Disckit3) which is called in after loading CP/M. Disckit will set up the required number of tracks and sectors and also reserve an area to hold a "directory" of the files and their position on the disk. Without this directory, a program would have to do a sequential search through the disk to find a particular file slowing things down quite considerably. The information in the directory is also used to identify the free space available on the disk. Another useful feature is that when a file is deleted from a disk, it is only the entry in the directory that is "flagged" as being deleted and not the file itself. However, any subsequent "save" to the disk will overwrite both the directory entry and the file. It follows that if you delete a file by mistake and do not write to the disk in the meantime, the file can be retrieved by merely resetting

the deletion "flag" in the directory.

Most of us know that by typing CAT when in Basic or DIR when in CP/M, the contents of the directory will be displayed, but did you know that CPC users can also type !DIR at the "Ready" prompt? Try it!

LOOKING AFTER DISKS

Being a magnetic media, disks can be easily corrupted if placed near



magnetic fields. The computer, monitor and printer all generate magnetic fields so it is wise not to keep disks too close. Hi-fi speakers are another source of corruption and, would you believe, the telephone. Travellers have reported that data has been lost from disks after they were subjected to the obligatory X-ray machine or even after having travelled on a electric train.

Although the disks have a moving metal shutter covering the window through which a disk drive will read or write information, and will help to keep out most of the dust or dirt, it is also there to prevent sticky fingers from contact with the magnetic

surface. It is not a good idea to try to open the shutter. If disks are left lying around, inevitably accidents will happen, and even if your coffee doesn't get thrown over it, dust will eventually make its way onto the surface of the disk and get transferred to the disk drive mechanism or read/write heads. This may cause read or write failures. So, keep your disks in a disk box away from a magnetic source and, maybe once every six months, give the disk drive a clean with a "head cleaner".

Disks will not last forever and can get worn through extensive use. Where possible make a working copy and keep the original safely stored away. Unfortunately, most games cannot be copied for this purpose as they are too heavily pirate-protected, but business software is generally allowed to be copied. It's also a wise move to keep the "write-protect" slider open (if the program allows you to do so) and can prevent accidental erasure.

Finally, our warm Australian climate often does terrible things to disks. If the disk gets too hot, it may well distort and cause major damage to both the platter inside the disk and the disk drive in which you then try to insert the disk. The magnetic recording surface can weaken and fade due to excessive heat and along with it, your data. ■

Next month we will move on to the Operating Systems and touch on some commands used with disk based systems.

Let the Process begin...



*A simple yet very functional word processing system
for the CPC by Paul Gerard.*

This little word processor is not a fully fledged professional effort - but on the other hand it should prove perfectly adequate for most home users' purposes. In particular, it is cheap (you can type in the whole program from the Amstrad User for this and next month, or get a working version from next month's tape).

Unlike most word processors written in the Amstrad CPC's Locomotive BASIC it features full word wrap, "smart" right justification, insert and overwrite modes, and good "WYSIWYG" (what you see is what you get). It should also be immune to the problem of long pauses induced by "garbage collection", as we have been very careful to manage our memory use so that this can never occur.

The program works on all CPC's including unexpanded CPC464's and CPC664's. While it will not replace TASWORD or PROTEXT it will be just right for things like letters or school homework. If you have a thesis or a novel or something else of a major nature you will want to invest in one of the professional word processing packages available. In the meantime though, if you have not done any word processing as yet this program should give you some idea of just how useful this aspect of your computer can be.

When you first enter the program a menu with seven options appears on the starting screen. The highlighted option will be selected if the [RETURN] key is pressed - the highlighting may be moved with the up and down cursor keys or by pressing the option number. The options available on this menu are as follows:

1. CREATE NEW FILE

This clears all text currently held in memory (make sure you have saved it first if you don't want to lose it forever) and sets you up to enter text into a new "file" or document. You will be asked to name the file - it is not compulsory to do so at this stage but otherwise the document will need to be named when and if it is "saved" to the disc.

2. EDIT TEXT IN MEMORY

This simply puts you at the head of the document in memory - if there is no document in memory then it will start one for you, although it will not at this stage be named.

3. SAVE FILE

Saves the document in current memory to disc with the current name - if the file has not been named it will ask for a name that can be turned into a valid CPM/AMSDOS file name. All files produced by this word processor are automatically given the file extension ".DOC".

4. LOAD FILE

Loads a file from the disc into memory. Any text in memory will be cleared, and the "edit" mode will be entered automatically, with the cursor at the head of the text.

5. PRINT FILE

This will bring up the "PRINT FILE" menu - enabling you to set various "PRINT" parameters (see below) as well as actually print out a file on your printer.

6. RENAME FILE

Renames the file in memory - especially useful to save a new version of a file under another name.

7. EXIT PROGRAM

Self explanatory - sudden and drastic, so make sure you have saved any text you don't want to lose.

When the "edit" screen comes up you can type the text you want straight into the computer - you will notice that there is no need to press [RETURN] at the end of a line, unless you want to end the line early - a full line will be automatically "word wrapped" (if you are not sure what this means, just try and see! The little black blob that moves as you type is called the "cursor", apart from the normal way it moves as you type text in, you can also make it move about the screen with the four "arrow" keys on your keyboard. Experiment to see what happens if you hold down [shift] or [control] while you press the arrow

keys. You should find you can make the cursor jump a word or a page at a time, and send it to the top or bottom of your text.

From the edit screen you also have the following set of options - accessed by using the [control] key.

1. *Set the "ruler"*: This is the line at the top of the screen that shows where the margins and tabs are currently situated. If you hold down the [control] key and then press [R] options will be presented to change left and right margins, and any of the TAB settings. Just follow the on screen directions. You can change the ruler during the course of a document (for instance, to indent a quotation).

2. *Set "Overtyping" or "Insert" mode*: The "Insert" routine is actually rather ambitious for BASIC, with the result that it functions very slowly. This is fairly acceptable if you are simply inserting a word to a sentence or a letter into a mis-spelt word, but it will not do for normal typing - thus the "Overtyping" mode is what you will mostly use. Holding down the [control] key while pressing [I] will select "Insert" mode - similarly "control O" will get you back in "Overtyping". A little experimentation will show the difference between the two modes - watch particularly the way the [clr] and [del] keys work in each mode!

3. *Set "Auto format" off or on*: This works in overtype mode, and "right justifies" each line as it finishes by adding extra space between words. Note that lines may be re-formatted later. To set or unset this feature hold down the [control] key and press [A].

4. *Re-format text*: If you have been inserting (or deleting) words, sentences etc. then your text will soon start to look untidy, with many lines blank or only partially filled. You may also decide, even with text that does not suffer from this problem, that you want to change lines from "right-justified" to "ragged right margin" format (or vice-versa). Place the cursor anywhere on the line concerned, and press "control F". This may upset the formatting of the next line, as words are taken up to fill the line you are on - in this case just press "control F" again until everything is O.K. (probably at the end of the paragraph). Blank lines that you want omitted may be removed by pressing "control D". If you are formatting in "Auto format" mode then the last line of the paragraph will probably look better formatted with this feature OFF.

5. *Return to the main menu*: At any stage you may return to the main menu by pressing the [esc] key. The file in memory is not affected, and may be SAVED or PRINTed - or you can return to it by selecting the "EDIT TEXT IN MEMORY" option. Note, however, that LOADING a file, or CREATING a new file, will effectively wipe out any text in memory, so it is essential to SAVE any text before you do these things, unless you have finished with the text and are quite sure you will never want to refer to it again.

In next month's issue the word processing program will continue, with more text for CPC disk drive users, as well as some amendments to make allowances for CPC tape users. ■

```

1 'Mini Word Processor - 612E
2 'by Paul Gerard
3 'The Amstrad User Dec 90
10 CALL &BB48:GOSUB 3022
20 GOSUB 680:ON ch GOSUB 50,570,60,80,210,120,30:GOTO 2
0
30 a$="*.bak":PEN 0:IERA,@a$:CALL 0
40 LOCATE 1,1:PRINT TAB(12) CHR$(24)h$(mn)CHR$(24):RETU
RN
50 GOSUB 120:WHILE INKEY$<>":WEND:GOSUB 3780:GOSUB 570
:RETURN
60 IF INSTR(f$,"Unn")=1 THEN GOSUB 120:WHILE INKEY$<>":
:WEND:IF INSTR(f$,"Unn")=1 THEN RETURN
70 OPENOUT f$:WRITE#9,f,1m,rm:FOR i=1 TO f:WRITE#9,MID$
(t$(pt(i)),1m,rm-1m+1):NEXT:CLOSEOUT:RETURN
80 GOSUB 120:IF INSTR(f$,".DOC")=0 THEN RETURN
90 GOSUB 3780:PEN 0:IDIR,@f$:PEN 1:IF VPOS(#0)<17 THEN
RETURN
100 LOCATE (30-(INSTR(f$,".")))/2,10:PRINT CHR$(24)"LOA
DING "LEFT$(f$,INSTR(f$,".")-1)CHR$(24)
110 OPENIN f$:INPUT#9,f,1m,rm:f=MIN(f,(fr-1)):i=1:WHILE
(i<=f) AND (NOT EOF):LINE INPUT#9,t2$:MID$(t$(pt(i)),1
m)=MID$(t2$,2,rm-1m+1):i=i+1:WEND:CLOSEIN:GOSUB 570:RET
URN
120 WINDOW #1,1,40,2,24:PEN#1,1:PAPER#1,0:CLS#1:LOCATE
6,10:PRINT"Input file name > "CHR$(24)" "CHR$(24)CHR$(8
):MID$(b$,1)=CHR$(0):mx=1
130 WHILE mx<=8 AND INSTR(b$,CHR$(13))<>1 AND INSTR(b$,
".")<>1
140 WHILE NOT FNlined(ASC(b$)):MID$(b$,1)=UPPER$(INKEY
$):WEND
150 IF FNesc(ASC(b$)) THEN MID$(f$,1)="Unnamed file":R
ETURN
160 IF FNalph(ASC(b$)) THEN MID$(f$,mx,1)=b$:mx=mx+1 E
LSE IF FNdel(ASC(b$)) AND mx>1 THEN mx=mx-1:MID$(f$,mx)
=" "
170 LOCATE 22+mx,10:PRINT MID$(f$,MAX(1,mx-1),1)CHR$(2
4)" "CHR$(24)" ";IF (INSTR(b$,CHR$(13))<>1 AND INSTR(b
$, ".")<>1) THEN MID$(b$,1)=CHR$(0)
180 WEND
190 CLS#1:IF mx>1 THEN MID$(f$,mx)=".DOC"
200 RETURN
210 mn=2:GOSUB 680:prd=TRUE:ON ch GOSUB 220,330,230,560
:IF prd THEN 210 ELSE mn=1:RETURN
220 MODE 2:LOCATE 1,10:PRINT CHR$(24)spg$CHR$(24):MID$(
b$,1)="0":WHILE VAL(b$)<1 OR VAL(b$)>6:MID$(b$,1)=INKEY
$:WEND:spg=VAL(b$):RETURN
230 GOSUB 530:IF FNpron=FALSE THEN RETURN ELSE GOSUB 54
0
240 MODE 2:LOCATE 1,10:PRINT CHR$(24)prg$CHR$(24):LOCAT
E 29,24:PRINT"PRINTER READY ? (Y/N)":GOSUB 640:IF yes=F
ALSE THEN RETURN
250 spg=MAX(1,spg):pg=1:pln=14:line=1:FOR i=1 TO 4:PRINT
#8:NEXT

```

cpc type-in

```

260 FOR i=1 TO 4:PRINT#6:NEXT
270 WHILE lne<=f
280 pln=pln+spg-(FNdubhite):IF pln>=pg*66 THEN FOR i=1
  TO 3+(FNdubhite):PRINT#6:NEXT:PRINT#6,TAB(lm+((rm-lm)/
  2))pg:FOR i=1 TO 10:PRINT#6:NEXT:pg=pg+1:pln=pln+14
290 PRINT#6,LEFT$(t$(pt(lne)),rm):lne=lne+1:FOR i=1 TO
  spg-1:PRINT#6:NEXT
300 WEND
310 FOR i=1 TO ((66*pg)-pln)+spg+(pg=1)+(FNdubhite):PRI
  NT#6:NEXT:PRINT#6,TAB(lm+((rm-lm)/2))pg:FOR i=1 TO 6+(F
  Ndubhite):PRINT#6:NEXT
320 RETURN
330 GOSUB 530:IF FNpron=FALSE THEN RETURN ELSE GOSUB 54
  0
340 MODE 1:ch=1
350 mn=3:GOSUB 690:ON ch GOSUB 360,380,420,420,440,460,
  480,500,520:IF mn=2 THEN RETURN ELSE GOTO 350
360 IF INSTR(m$(12),"DRAFT") THEN PRINT#6,ptr$(1):MID$(
  m$(12),6)=" (NL0)" ELSE PRINT#6,ptr$(2):MID$(m$(12),
  6)="(DRAFT)"
370 RETURN
380 IF INSTR(m$(13),"ON") THEN PRINT#6,ptr$(4):MID$(m$(
  13),9)="(OFF)" ELSE PRINT#6,ptr$(3):MID$(m$(13),9)="
  (ON)"
390 RETURN
400 IF INSTR(m$(14),"PICA") THEN PRINT#6,ptr$(6):MID$(
  m$(14),6)="(ELITE)" ELSE PRINT#6,ptr$(5):MID$(m$(14),6
  )="(PICA)"
410 RETURN
420 IF INSTR(m$(15),"ON") THEN PRINT#6,ptr$(7):MID$(m$(
  15),8)="(OFF)" ELSE PRINT#6,ptr$(6):MID$(m$(15),8)="
  (ON)"
430 RETURN
440 IF INSTR(m$(16),"ON") THEN PRINT#6,ptr$(9):MID$(m$(
  16),12)="(OFF)" ELSE PRINT#6,ptr$(10):MID$(m$(16),12)
  ="(ON)"
450 RETURN
460 IF INSTR(m$(17),"ON") THEN PRINT#6,ptr$(11):MID$(m
  $(17),14)="(OFF)" ELSE PRINT#6,ptr$(12):MID$(m$(17),14
  )="(ON)"
470 RETURN
480 IF INSTR(m$(18),"ON") THEN PRINT#6,ptr$(13):MID$(m
  $(18),13)="(OFF)" ELSE PRINT#6,ptr$(14):MID$(m$(18),13
  )="(ON)"
490 RETURN
500 ff=TRUE:GOSUB 530:MID$(m$(12),6)=" (NL0)":MID$(m$(
  13),9)="(OFF)":MID$(m$(14),6)=" (PICA)":FOR i=15 TO 18:
  MID$(m$(i),LEN(m$(i))-4)="(OFF)":NEXT
510 RETURN
520 mn=2:RETURN
530 IF FNpron=FALSE THEN MODE 2:LOCATE 1,10:PRINT CHR$(
  24)pm$CHR$(24):LOCATE 32,24:PRINT"CONTINUE ? (Y/N)":GO
  SUB 640:prd=yes:RETURN
540 IF ff THEN PRINT#6,ptr$(0):ptr$(1):ff=FALSE

```

```

550 RETURN
560 prd=FALSE:RETURN
570 MODE 2:GOSUB 3710:GOSUB 3740:GOSUB 2020
580 IF sf>0 THEN mx=lm+(rm-sf):sf=0 ELSE mx=lm
590 GOSUB 820:my=MIN((fr-1),my+1)
600 IF f<my THEN f=my
610 sy=MIN(23,sy+1)
620 IF sf THEN LOCATE 1,sy:PRINT LEFT$(t$(pt(my)),79):
  LOCATE lm+(rm-sf),sy
630 IF b$<>CHR$(29) THEN 580 ELSE RETURN
640 WHILE INKEY$<>"":WEND:MID$(b$,1)=CHR$(0):yes=0
650 WHILE yes=0:MID$(b$,1)=UPPER$(INKEY$):yes=INSTR("NY
  ",b$):WEND
660 yes=yes-1:MID$(b$,1)=CHR$(0):WHILE INKEY$<>"":WEND
670 RETURN
680 MODE 1
690 head=mn:GOSUB 40:IF mn<>3 THEN ch=1
700 doit=FALSE
710 FOR i=1 TO ml(mn):LOCATE 7,4+(i*2):PRINT STR$(i)".
  "m$(i+start(mn)):NEXT
720 LOCATE 1,25+(mn<>3):PRINT " 1-"STR$(ml(mn))" to s
  elect - [RET] to execute"
730 WHILE NOT doit
740 LOCATE 7,4+(ch*2):PRINT CHR$(24)STR$(ch)". "m$(c
  h+start(mn))CHR$(24)
750 PEN 0:MID$(b$,1)=CHR$(0):WHILE NOT FNmenu(ASC(b$)
  ) AND NOT FNcurs(ASC(b$)) AND b$<>CHR$(13):MID$(b$,1)=I
  NKEY$:WEND:PEN 1
760 IF VAL(b$<>ch) THEN LOCATE 7,4+(ch*2):PRINT STR$(
  ch)". "m$(ch+start(mn))
770 IF INSTR(b$,CHR$(240))=1 THEN ch=ch-1 ELSE IF INS
  TR(b$,CHR$(241))=1 THEN ch=ch+1 ELSE IF VAL(b$)>2 THEN
  ch=VAL(b$)
780 IF ch<1 THEN ch=ml(mn) ELSE IF ch>ml(mn) THEN ch=
  1
790 IF INSTR(b$,CHR$(13))=1 THEN doit=TRUE
800 WEND
810 RETURN
820 MID$(b$,1)=CHR$(0)
830 WHILE b$<>CHR$(13) AND mx<rm+1 AND NOT FNesc(ASC(b$
  ))
840 MID$(b$,1)=CHR$(0)
850 WHILE INSTR(b$,CHR$(0))=1
860 IF mx<lm THEN mx=lm
870 IF sy>22 THEN sy=23 ELSE IF sy<1 THEN sy=1
880 IF f<my THEN f=my ELSE WHILE FNbink(f) AND f>1:
  f=f-1:WEND
890 LOCATE mx,sy
900 IF d<>my THEN d=my:CLS#3:PRINT#3,d
910 IF a<>mx THEN a=mx:CLS#4:PRINT#4,a-(lm-1)
920 MID$(b$,1)=INKEY$
930 PRINT CHR$(24):MID$(t$(pt(my)),mx,1):CHR$(24):C
  HR$(8)
940 IF FNcurs(ASC(b$)) THEN GOSUB 1680

```


Age-old Calculations

Here's a short program for the CPC that will calculate your age in days and tell you on which day you were born.

How many times have you woken suddenly in the middle of the night to ask yourself in a state of panic, "For how many days have I lived?" Probably never. Which makes this short but fun program pure trivia. Days Old not only answers that question precisely by telling you your age in days, but also tells you during which day of the week you were born. (It can't tell you at what time or how much you weighed, but that's what mothers are for.) For example, if you were born on the 30th of April in 1969, you were born on a Wednesday and as of the 1st of November, 1990, you are all of 7853 days old.

Based on fairly simple calculations, months have no limits and the dates you supply are not checked against a calendar; accuracy depends on user honesty. You can, for example, use the date of the 29th of February of a non-leap year and the days will still be calculated. Likewise you can use an outrageous date such as the 45th of June and it will work. Not bad if you wish to astound friends with your vast knowledge (?) or if you're a fan of personal trivia!

```

100 'DAYS OLD by Clive Blackmore
110 'The Amstrad User - Dec 90
120 MODE 0:BORDER 20:INK 0,20:INK 1,2
130 PRINT" DAY OF BIRTH"
140 PRINT" ====="
150 PRINT" AND DAYS OLD"
160 PRINT" ====="
170 PRINT
180 PRINT"This program tells"
190 PRINT"you what day you"
200 PRINT"were born on and how";
210 PRINT"old you are in days."
220 PRINT
230 PRINT"Enter the dates in"
240 PRINT"numbers only"
260 PRINT
270 PRINT"If you were born"
280 PRINT"before 1901, please"

```

```

290 PRINT"enter both years in"
300 PRINT"full."
310 PRINT
320 PRINT" PRESS ANY KEY"
330 IF INKEY$="" THEN 330
340 MODE 1
350 CLS:DIM mo(12):DIM d$(6)
360 d$(0)="Sunday"
370 d$(1)="Monday"
380 d$(2)="Tuesday"
390 d$(3)="Wednesday"
400 d$(4)="Thursday"
410 d$(5)="Friday"
420 d$(6)="Saturday"
430 '
440 FOR m=1 TO 12:READ mo(m):NEXT
450 DATA 0,31,59,90,120,151,181,212,243,273,304,334
460 '
470 PRINT" ENTER TODAY'S DATE..."
480 LOCATE 1,4:INPUT;"DAY";D1
490 LOCATE 16,4:INPUT;"MONTH";M1
500 LOCATE 30,4:INPUT;"YEAR";Y1
510 '
520 LOCATE 10,7:PRINT"ENTER YOUR BIRTHDAY..."
530 LOCATE 1,10:INPUT;"DAY";d2
540 LOCATE 16,10:INPUT;"MONTH";m2
550 LOCATE 30,10:INPUT;"YEAR";y2
560 '
570 t1=y1*365+INT(y1/4)+mo(m1)-1+d
580 IF INT(y1/4)=y1/4 AND mo(m1)+d1<60 THEN t1=t1-1
590 t2=y2*365+INT(y2/4)+mo(m2)-INT(y2/1900)+d2
600 i=t2-INT(t2/7)*7
610 IF y2<1901 AND y2>1800 THEN i=i-1:IF i=-1 THEN i=6
620 '
630 LOCATE 7,13:PRINT"You were born on a ";d$(i)
640 LOCATE 7,15:PRINT"and you are";t1-t2;"days old."
650 LOCATE 12,18:PRINT"PRESS ANY KEY..."
660 IF INKEY$=""THEN 660 ELSE CLS:GOTO 520

```


the answer 202 - or more correctly &0202 - and LD BC,&0202 means load B with 2 and load C with 2.

```

BORDER 2

In assembler

LD BC,&0202
CALL &BC38
  
```

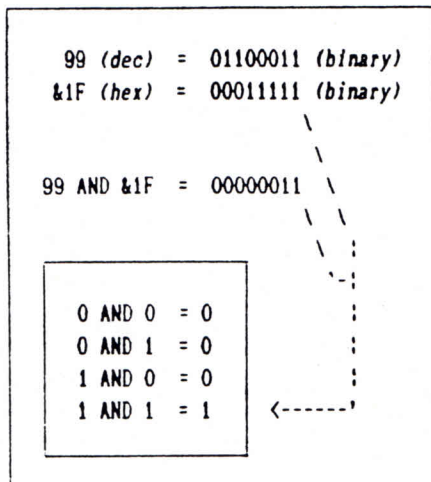
This, I think demonstrates the fact that decimal numbers have no place in computing because computers only understand binary. Hexadecimal numbers are a shorthand form of binary, and I would urge all those interested in machine code programming to forget all about decimals.

MASKING UNMASKED

Now, perhaps this is the time to mention "masking". If you were to type in Basic INK 1,99 (they're hard to forget these decimals), the computer will come back with 'improper argument' as there is no such colour number as 99.

But, when using machine code, errors like that are not reported. There is some error-checking, however, to make sure that incorrect colour numbers are not used. It is done by masking the colour number with &1F.

Masking is best explained by using binary numbers.



An easier way to understand it is, when ANDing a number with the binary number 00011111 (&1F hex), change the top (left) 3 bits of the second number to zero's and see what you have left. You can check it out for yourself in Basic like this:

```

10 a = &X01100011
20 b = &X00011111
30 PRINT BIN$(a AND b)
  
```

Try it out with several numbers and see if you can predict what the result will be.

I may not have covered much this month, just setting the border colour, but if I said write a machine code program to do the same as INK 1,26 and gave you this extract from the firmware manual:

```

SCR SET INK          &BC32

Set the colours in which to
display an ink

A contains an ink number
B contains the first colour
C contains the second colour
  
```

you could write such a program easily. Couldn't you? Perhaps between now and next month you could try it and find out. I will provide the answer for you in next month's issue.

Apart from the answer to the above question as promised, January's article will take you a couple of steps further in the use of Machine Code.



A Merry Christmas

TAU staff would like to wish readers, advertisers and contributors

A Look at Logic



A look at how computer programming is based on logic, in particular examining the application of Boolean expression.

"If it was not so, it might be; and if it were so, it would be: but as it isn't, it ain't. That's logic". So said Tweedledee in Lewis Carroll's *Through the Looking-Glass*, but, then again, Tweedledee never had a CPC.

For a newcomer to the game, Logic is without doubt the largest and most difficult concept of computer programming to grasp because it manifests itself in so many forms. In this article we are going to talk about the basic concept of logic, i.e. about TRUE and FALSE.

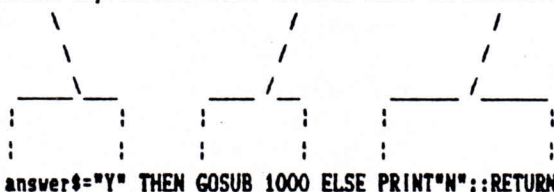
These two states are represented by computers as two different numbers. On the CPC they happen to be -1 for TRUE and 0 for FALSE. But the actual numbers are not very important. What IS important is whether the result of an expression is true or not.

Regular readers will have often seen this line used in example programs:

```
10 TRUE=(1=1):
   FALSE=(NOT TRUE)
```

figure 1.

IF <boolean expression> THEN <action> ELSE <alternative action>



What it says is: The variable TRUE becomes equal to the statement 1=1. Now, as intelligent human beings we know that the number 1 does indeed equal the number 1. They are the same. It is a true statement. Therefore the variable TRUE will be set to whatever value the computer chooses to represent a true statement with (in our case -1). The bit after the colon - which looks suspiciously like plain English - simply translates to, the variable FALSE becomes equal to NOT TRUE. So, the variable FALSE is set to whatever value the computer chooses to represent as being NOT TRUE.

Let's not get too heavy here by going into how NOT works - we'll look at that later - the important thing is that we've set up two Boolean constants, which were named after George Boole, the man who first invented them.

George Boole also invented the Boolean expression. Don't panic, it's nothing more than what you regularly see in an IF..THEN..ELSE statement. It works like

this: (see Figure 1)

Let's take a closer look at that Boolean expression. What the computer has to work out is, does

'answer\$' equal the letter Y. Yes? NO!

What you see is the accepted shorthand way of writing:

```
IF (answer$="Y")=TRUE.
```

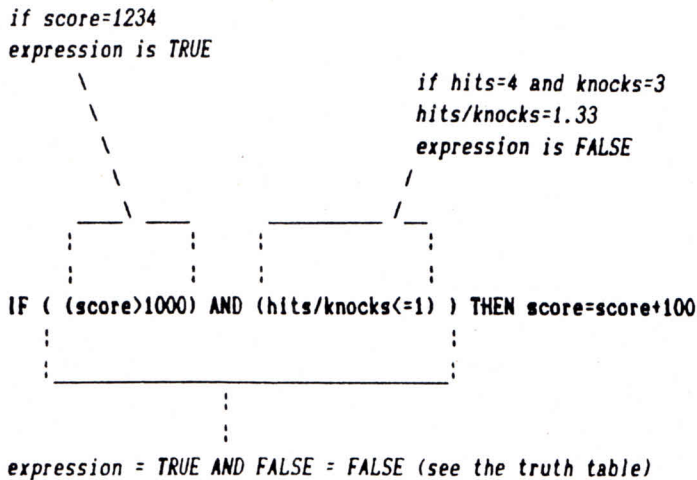
So what the computer has to work out is whether or not the result of the Boolean expression (answer\$="Y") evaluates to the number that the computer considers to be 'true'. Look, try this:

```
10 MODE 1
20 TRUE=(1=1): FALSE=(NOT TRUE)
30 PRINT"Enter a letter ";
40 INPUT answer$:PRINT
50 answer$=UPPER$(answer$)
60 x=(answer$="Y")
70 IF (x=TRUE)=TRUE THEN PRINT
   TRUE"
80 IF (x=FALSE)=TRUE THEN PRINT
   "FALSE"
```

Line 60 evaluates the Boolean expression, and assigns the result of it to the variable 'x'. Lines 70 and 80 then investigate 'x' to see whether it is set to the computer's idea of true or false. If you enter Y the printout will be "TRUE", any other letter and the printout will be "FALSE".

An important feature of Boolean expressions is the bracket. Mostly it is optional except when you want to force a certain expression to be evaluated before another in a multiple expression. However,

Figure 2.



even in short, simple Boolean expressions, brackets can make the program much more readable. Spaces can be used to good effect too. For example:

TRUE = 1 = 1

is acceptable Basic, but the two equals signs are more than a little bit confusing and the expression means much less than absolutely nothing to the novice programmer, whereas:

TRUE = (1 = 1)

is better. But:

TRUE = (1=1)

makes the programmer's intentions quite clear.

If you get into the habit of always enclosing all Boolean expressions between brackets, and use spaces where they are necessary, then with some intelligent variable names your programs will be just that much easier to debug. Yes I know it's more typing, and I know your programs will take longer to load, and I know they'll run slower, but you'll thank me for it later.

As we've seen in the FALSE= (NOT TRUE) statement Boolean

logic has its own operators, NOT being one of them. George Boole had two others, AND and OR. (Later some enterprising egg-head, whose name escapes me for the moment, added XOR).

How they work is really quite simple, although remembering what operator does what is difficult for beginners. That is why the truth table was invented:

TRUE AND TRUE = TRUE
 TRUE AND FALSE = FALSE
 FALSE AND TRUE = FALSE
 FALSE AND FALSE = FALSE

TRUE OR TRUE = TRUE
 TRUE OR FALSE = TRUE
 FALSE OR TRUE = TRUE
 FALSE OR FALSE = FALSE

NOT TRUE = FALSE
 NOT FALSE = TRUE

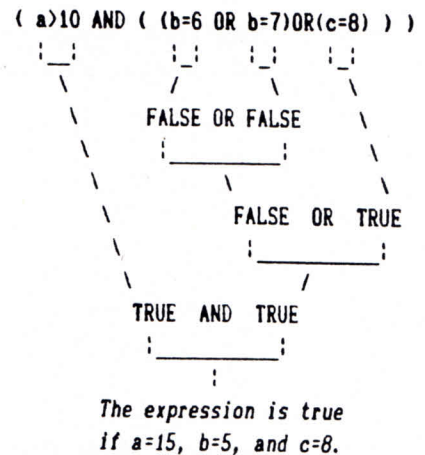
Armed with this table we can assign some dummy values to some variables and evaluate a longish Boolean expression: (see Figure 2).

In the above diagram, with the variables set at score=1234, hits=4 and knocks=3, the whole Boolean expression evaluates as FALSE, so the statement after the THEN will not execute. As an

exercise, change the variables to score=1234, hits=4, knocks=5 and evaluate the expression again. It should come out as TRUE.

Any large multiple Boolean expression can be broken down into what I call a 'truth tree' and evaluated by replacing the variables with dummy values. Evaluate the innermost terms first, and work your way out. One more example:

Dummy values: a=15, b=5, c=8



In the above example, the brackets are very important. If we leave the expressions and the dummy values the same but change the brackets around (opposite top right), and although the whole expression is still TRUE, you can see that the structure of the truth tree has changed, and the bottom level expression has become FALSE OR TRUE, whereas before it was TRUE OR TRUE. Lesson: If your logic isn't working, check your brackets first.

Closely associated with logic is the technique of using 'flags' in your programs. (see Figure 3).

Flags are easy to explain. Just imagine you've got lots of little men inside your computer. Each man is holding a flag on a stick (like a linesman in football or rugby), and each man has only one job - to check, each time you ask him, whether a certain thing

The Facts of Life

Joseph Elkhorne applies John Conway's Life program, testing it against SID routines as he goes.

Right then. Let's begin on the Life program. Like Indiana Jones, I'm making this up as I go along. What, no flow charts, Warnier-Orr diagrams or other structuring aids? Rather, an outline: a set of modules. Like - initialisation, user response, grid set-up, box tests, redraw grid, loop with exit option.

For each module, I'll make a few notes as I develop the required routines, more than likely testing bits and pieces with SID and documenting as I go.

Suppose you develop a routine with SID. The easiest way to save it is with the Write command:

```
W name ad1 ad2
```

where W is the Sid command, name is what you select to go to disc file, ad1 is where it starts and ad2 is where it ends. Let's do an example. We're going to work out a screen clear routine - sending a string to the console. After SID is run up, enter a100, then key in these instructions precisely:

```
mvi c,9
lxi d,109
call 5
ret
```

and then an extra enter to terminate assembly. Now enter s109 to set the bytes you want: (1B, 'E', 1B, 'H', '\$', .) with the full stop terminating the Set process.

Now - Wcls.com 100 10e will write this tiny file to disc. Note

that even though you only write a few bytes, the file size is still the minimum allocation block size when you check the directory afterward - 1K on a three-inch 6128 disc.

Suppose you do a bit more coding and want to append the previous example. It's possible but note that the absolute address reference will now invalidate your intentions. You have to plan your work and work your plan.

The reason for showing you this is twofold: first, the Write enables you to develop little bits of code that will run as true standalone programs. Secondly, you'd find it tedious to Set each of the bytes for a truly long message; therefore, to make life easier, you'd edit the text externally using ED, and then use the Read command in SID to import that text.

Let's try it. First, create a text file called LIFE.TXT. You might want to copy the Life instructions in the box. Don't forget the dollar sign at the end! (You obviously don't need it as ordinary text, but will require it when it becomes a message to be printed by the system call).

LIFE

(originated by John Conway)
Life is a simulation worked on a grid. If a box is filled, we call it a 'cell' Each box is tested according to the following rules:

1. A cell with two or three neighbours lives on.

2. A cell with one or no neighbours dies from isolation.

3. A cell with four or more neighbours dies from the pressures of overpopulation.

4. An empty box with exactly three neighbours is born as a cell in the next generation.

All boxes are tested and the results form the next generation.

Now, run up SID again, but calling up the program created at the beginning of the session:

```
SID CLS (it will default to the CLS.COM file)
```

and enter L100 to verify that it's there. Next, append new text over the old screen clearing command:

```
R LIFE.TXT 9
```

where the suffix is a displacement from the operating system default of 100 hex. If you forget the displacement, the new file reads in starting at 100 and overwriting the bit of code that prints the string! Your code started at 100 hex and ended at 108 - the index pointer indicated 109, so that is where you want the new message.

Incidentally, if someone has checked a CP/M Plus reference text, the 6128 (at least!) doesn't follow the so-called standard. This suggests the use of the I command to 'input' the filename into the File Control Block and then the R [displacement] to get the file. Having tried this, I categorically state: 'it ain't so!' This is the way CP/M 2.2 did it in DDT.

Notwithstanding typographical errors, everything I write in this column has been tested on the 6128. I've recently come across a reference to a CP/M emulator which runs on IBM style machines. I intend to chase this public domain proggy down and try it out. But I still wouldn't feel confident assuming something that worked on my PC20 would do so on the 6128. Save your modified file with something like:

```
W TELLME.COM 100 666 (or
however long it is)
```

Commas can be used as separators instead of spaces, but the latter is easy to read - and works.

The point of all this fiddling is simply to show you various ways of manipulating your programming tools. Actually, I would append a screen of text at 100 in the above example, retaining the clear screen codes. This gives you a neat stand alone program to append to any project, using the SUBMIT technique.

You'd have SUBMIT.COM on your working disc, of course. For purposes of this example, I created a file titled LIFE.SUB:

```
; a practise submit file
cls
; this clears the screen
type life.txt
; and display the game
instructions
; LIFE.COM to be developed
```

I could have as easily used the TELLME program we just cobbled up; once again, there are various ways and means to the same end. You might want to have a colourful title screen created with a paint program, a page of instructions, and other 'header' sort of data. By working these up independently, and using a .SUB file, it can make the actual machine code program easier.

You'll note the lines beginning with a semi-colon are comments and the CP/M Command Control Processor does not act on them. It only displays them on screen.

Obviously, they're superfluous in such a short example - but can be useful for complex applications. If writing something complicated for someone else to use, it's good if they understand what's going on.

But suppose you really want to display text from within a program. It can be done. Use system calls to open the file; read a CP/M record at a time; display; repeat till End of File. Piece o' cake.

The Open File function is OFh, accessed by the system call to addr. 0005. As always, we'd have the EQUates at the head of the program listing. The specific block to open the file looks like this:

```
;open file here
mvi c,openf ; open file
function
lxi d,fcbl ; of the
named file
call bdos
incr a ; bump A
register.
lf was
0ffh
jz nofile ; will be
zero
meaning
no file
```

You first have to poke the filename into the file control block, so CP/M knows which you want. In the RESTORE program, we poked the '?' character. CP/M returns a number (0-3) if a valid file exists, which is the position in the directory record currently open. The value 0FFh returns if a match is not found.

Assuming we find a match - we should, as we've created the initial text file and will hard code its name into our Life program - we then begin to read a 'record' at a time. Now, CP/M was developed in the hoary days of 8 inch discs with 128 bytes in a record. This was a compromise between reading a chunk of data into memory and too frequent disc access.

The 'good old days' - The IBM 3740 disc format became the CP/M standard. Single-density, single-sided, soft-sectored, and the 128 byte record was also the sector size; 76 tracks, with 26 of those

little sectors. Thus, CP/M's genesis was IBM hardware and itself became the basis of PC-DOS 1.0!

CP/M uses an area of memory to handle records; a DMA buffer. Defaulting to address 80h. Two points to note: the origin of a standard program is 100h, default CP/M stack points working down the DMA buffer. (The first stack storage address is, 0FFh).

In RESTORE, we set up a user stack, to keep record reads from corrupting the return addresses needed for operation. If you run the program, examining listings, you'll see the DMA buffer filled by a disc access. As you step through the display, you'll note the disc drive LED comes on only for every new 512-byte chunk. Eh?

CP/M seems to be playing a trick on you. It is reading a physical sector off the disc into its own buffer - which is in another RAM bank - then transferring the data from the physical read to the logical size of a record: 128 bytes. It happens four times; the system is ready for the next disc access.

Physical sectors can be different sizes. By not having to worry about fiddly hardware details, CP/M makes life easier, and makes programs transportable from one machine to another. The original 128-byte record is the key.

OK. Once the program file opens, the function to read a sequential record is 14h. The system call returns a code in A which is 0 if successful, and nonzero if end-of-file occurs. The true source listing looks like this:

```
mvi c,sread ; read se-
quential
record
function
lxi d,fcbl ; point to
filename
again
call 5 ; A=0 if
read OK
ora a ; logical
fiddle to
set flag
jnz done ; go off if
done
```


and at this point, the DMA buffer should have 128 bytes of text.

The problem is, you can't test this for yourself in SID without getting in more strife than Ned Kelly. Remember, I mentioned the stack moving downwards from OFFh? When you overwrite the DMA buffer with 128 bytes, you corrupt the stack that CP/M had set up for itself. It doesn't know where to turn next, and probably locks up the machine entirely.

Our answer is clear: move the DMA location. Yes, friends, it's another system call to the rescue. The magic number is 1Ah for the function. In formal parlance, we enter the system call with 1A in register C, and the File Control Block address in pair DE - and there's no return code. Here's the source:

```
mvi c, setdma ; set DMA
                address
                to
lxi d, udma    ; your
                choice
call 5
```

In point of fact, our final program will both set up a user stack and a user DMA buffer. For now, run up SID and assemble this list of instructions, starting at 100h as usual:

```
mvi c, 1a
lxi d, 200
call 5
nop
mvi c, f
lxi d, 5c
call 5
nop
mvi c, 14
lxi d, 5c
call 5
nop
```

and then insert the filename thusly:

```
ILIFE.TXT
```

and display via D5C to ensure you typed it correctly. You'll see the filename and the rest of the old DMA buffer area, plus a bit more. Then do a D200 to see what miscellany SID put there originally.

We're first establishing a user buffer, then opening the file and finally reading it. The NOPs are there simply to give you separators between the function groups. Cycle through this little lot with G,108 and use the X command to eXamine the registers. You'll see that DE has changed, which is why you have to reload it in the next bits. Next you do G,111 and lastly the G,11A before you can display your buffer. Don't forget the commas between the G and address! What you're doing is setting breakpoints for SID.

At last, you can go to D200 and see that you, your very own self, have accessed a disc for a read operation! Congratulations (barring typos and fumble fingers). Having succeeded with this little trial, hit a Control-C to exit SID before you get dangerous.

You may be wondering why we explicitly said this process was a sequential read. CP/M is rather clever and allows you to also do a Random Record read - something not available under AMSDOS. Random access allows more versatility in the user's applications, but we've saved that for somewhere in the distant future.

The next step, now that you've proved you can read from a disc, is to see how the application program will print this data. By the way, you need not concern yourself that the file was not closed on exiting SID. Since the directory entry was not disturbed, no harm will befall it.

Writing to the disc, however, does require a definite closure by the user. More functions to be studied. These aspects will be covered in the next instalment of tutorial information soon.

After the special report on BBSing in October's magazine, a bloke from Queensland rang Decadence. He got into chat mode with Sandy and said he'd once been very active on the boards and then dropped out; our article rekindled the interest. Hope it proved useful to others too.

In recent weeks, in other areas of interest, I've heard several people bemoan the problem of group publicity. Yet one message on a local bulletin board today could well be all over Australia in a couple of days. I've been reporting activities of the Children's Book Council, exhibitions at Books Illustrated, and doing book reviews in recent months.

As use of bulletin boards becomes more widespread, more and more people become aware of the advantages of using them. Recently, I noticed that there's even an on-line real estate BBS. Haven't called it yet - but when I win Tattsлото....

I had the opportunity to try a couple of alternate communications packages this month. Telemate documentation looks good - but I couldn't get the program to run on my PC20, probably because of the 'limited' memory. I've continued to use the Public Domain program, Telix which has many good features.

The program I was using had a lot of bells and whistles, but lacked (so far as I could tell) a couple of significant features: backscrolling and automatic line wrap. Without the latter, a five-way conversation on a chat board loses coherence, as the text vanishes off the right-hand edge of the screen. Backscrolling of the buffer is vital for on-line games like Yankee Trader - which, incidentally, is already in its third generation. When there's a high level of data transfer, if it scrolls off the screen before you can read it, things can quickly become frustrating.

Finally, Decadence BBS has switched to a new type of software called SuperBBS. This package originates in Finland - making it a wee bit difficult to get user support. It's very similar to Quick BBS, uses the same file structures, and only has evidenced one noticeable bug thus far.

Wishing all of you a Merry Christmas and Happy New Year, and hope 1991 is instructive, entertaining and profitable. ■

Complete Entertainment



Card games, darts, dominoes and word games, this new compilation for the PCW offers fun and variety all at once.

The Complete Home Entertainment Centre consists of games to suit more mature tastes, though they are not restricted to any particular age group minority. The compilation holds four games, each with their own sub games, on the one disk. Most of the games will be familiar to everyone, as they range from established favourites such as darts to dominoes, and even card games.

DARTS

Darts is first in the selection menu. Playing against the com-

puter, it is as fun as playing a workmate in the pub and doesn't smell of beer. You have a choice between the specific dart games of Five-O-One, Tour Board and Cricket. In Five-O-One both players begin the game with a sum total of 501 points, and the objective is to be the first player to reduce that number to zero exactly and according to scoring guidelines. Much easier said than done!

A little bit more difficult because your aim has to be even more specific, in Tour Board your darts must hit the board in a

numerical sequence. In the game of cricket each player alternates in turns of 'batting' and 'bowling', with specific rules to be followed pertaining to the ways in which runs can be scored and other such details that mimmick the sport of cricket.

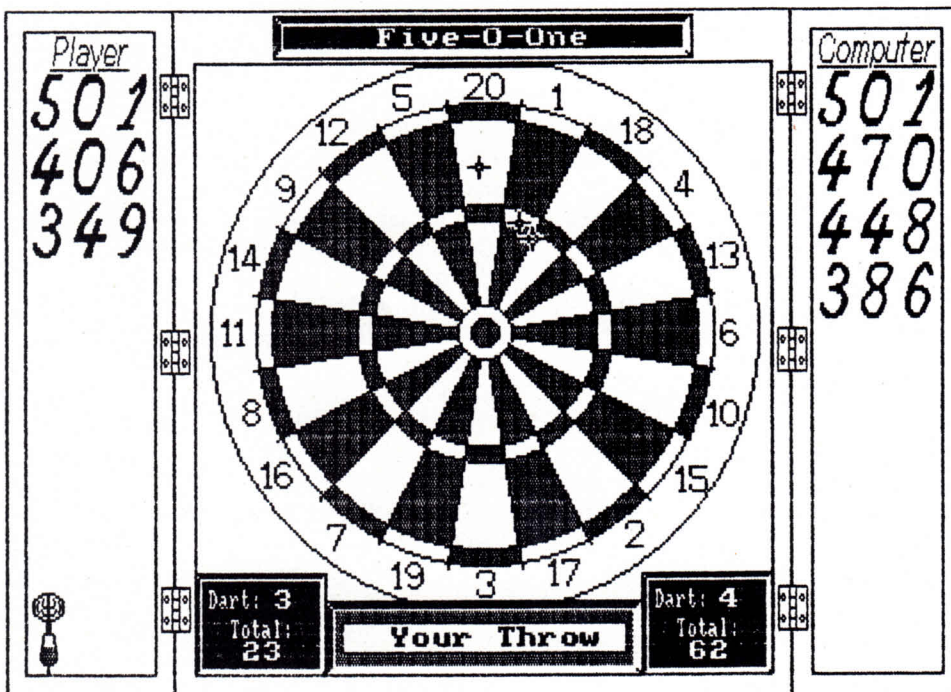
In all of the games you also have an option to set a level of skill that the computer will adhere to, and it apparently does not cheat.

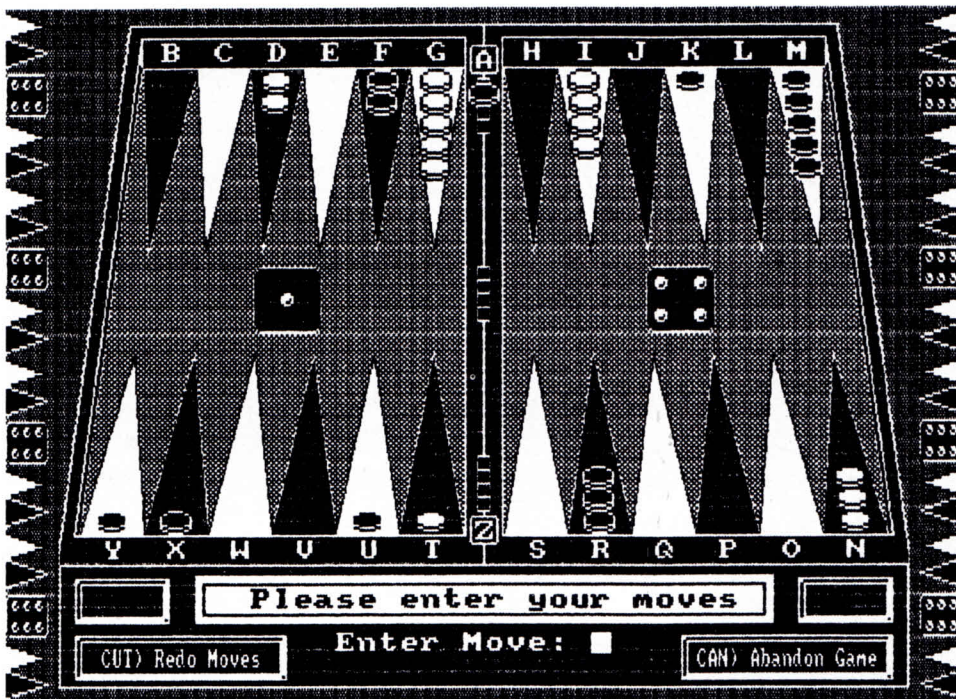
To play any of the games you must line a jiggling cursor - your hand is as steady as a rock? - up to the mark you want to hit and then fire your shot before it can move. It's a fun way to play darts and the computer makes an amusing opponent, with comments such as "Hard luck, I win". That's if you lose, obviously, so I hope you're not prone to violent disputes because a new computer screen is more expensive than a black eye.

BACKGAMMON

In Backgammon the computer is again your worthy opponent. You control the fifteen white counters and move clockwise whilst the computer controls the black, in this you have no choice - guess who's controlling this game! You do however have a choice of the level of competence that the game will be played at.

The board and the dice are displayed on the screen in their entirety, the layout itself practicle





in that it reflects the actual board game exactly. The graphics being so impressive you can actually watch the dice spin before your eyes and control the point at which they are thrown by pressing the space bar, (the dice are three dimensional, in other words). A little less suspicious than technological pot luck.

Your objective is to move all of your counters off the board before your opponent does, the first to succeed in this task being the overall winner. The rules of the game are as per the traditional backgammon and your computer opponent is every bit as satisfying as the traditional human opponent that you may have played in the past.

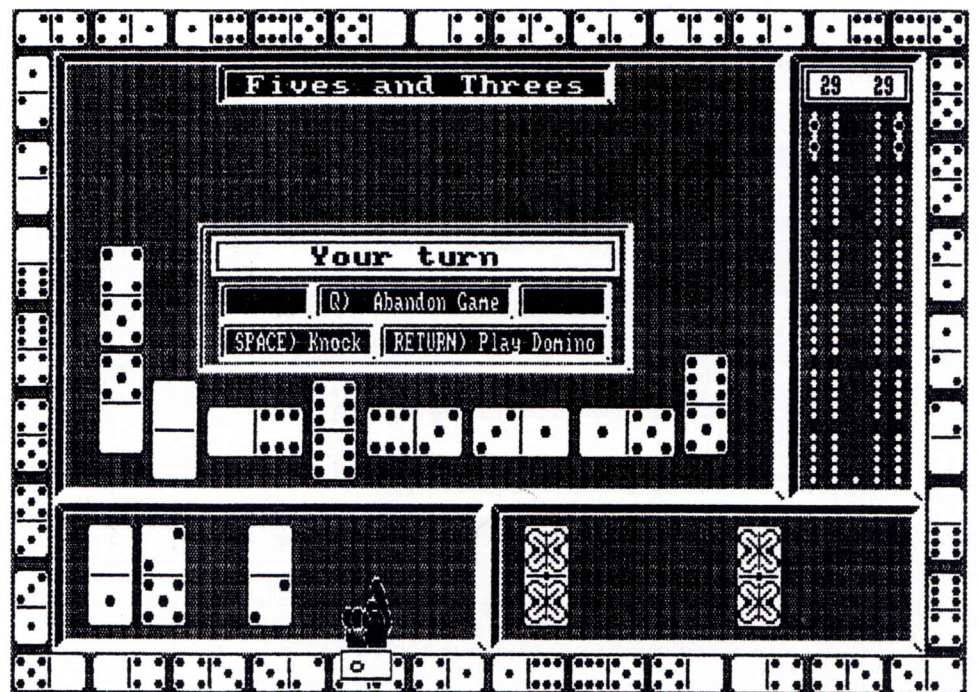
DOMINOES

Dominoes also offers a choice between two different types of Domino games, and within these games you can be even more specific in your choice of game parameters. You can play Fives and Threes, or Domino out.

There are two sets of dominoes in the game. The central objective in any of the variations of the games is to use all of your dominoes before your opponent/s can

use all of theirs. Scoring is done on a move-by-move basis, the combined value of the matching pieces contributing to your score and in many cases earning you bonus points.

Playing is as easy as selecting the domino and playing your hand... oh, and then there's the thinking bit.



VIDEO CARD ARCADE

Within the Video Card Arcade section there are three separate card games to play. For the heavy saloon card player there is the chance to match the wits against the computer in a game of Poker. There is good news and bad news here. You are advantaged because the computer can't read your not-very-poker face, but on the other hand it does not err as a human opponent would and therefore is more difficult to beat. Also the scoring is done point by point according to your hand, therefore you may not bluff or cheat. But as far as brushing up on your poker skills goes it is still a good game.

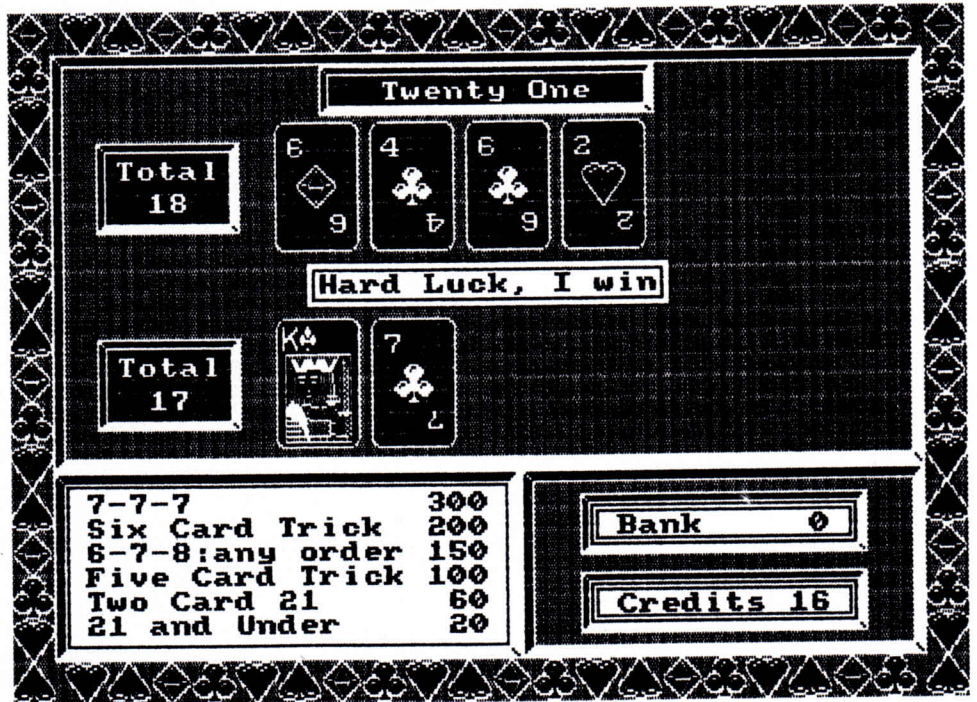
High Low is more a game of chance than anything. It involves what it says - playing with five cards the player must guess whether each card is higher or lower than its preceding one before being turned over. Again scoring is on a point basis, beginning with twenty credits and working your way up from there.

Pontoon, otherwise known as

twenty-one, is an all time favourite. Playing against the computer it is a game of luck which carries a decent amount of control over which direction that luck takes. The game is played exactly as it would be from a card deck, with each player being dealt two cards to begin with. If the cards do not equal twenty one exactly then the player may take the risk of receiving additional cards until the sum total reaches as close to twenty one as possible, or alternatively may play at a safe total and risk the opponent - in this case the computer - outdoing their score. Various combinations can win you a higher score, but anything over twenty one will send you bust. In all the game is friendly but competitive and always fun.

WORDSEARCH

Wordsearch is the only game besides Dominoes that offers the option of having more than one player without having to compete only against the computer. One to



four players, to be exact. (Perhaps this is a devious plot to reduce your rate of gambling at Poker and darts?)

The game is played to a time limit and isn't as easy as it would appear. It is played on the same format as any wordfind game that you would find in a weekly magazine, but because of the time limit

and the one by one presentation of the words (which are in categories), and because it becomes a race to scan the squares to find your word, it is actually quite challenging.

If you are playing against the computer your opponent will be fairly consistent, but an extra element of competition is added if you choose to play against a friend.

On top of that the better you get the tougher you can play, as there are levels of difficulty and speed to choose from.

All of the games are interesting, diverse and as challenging as you choose to make them. (It even has the option to screen dump which works well because the screens are so inclusive, as you can see in the diagrams provided in this article.) The graphics are clear and well designed and the computer is a friendly opponent with quite a personality behind it. The package as a whole, at a price of \$49.95, is well worth purchasing.



A Clean Exchange

LocoScript 2's options allow you to make your automatic textual exchanges more specific to the letter.

When preparing documents, it's useful to be able to pick out the places where you've used particular words or phrases and swap them for something else. For example, you might want to change the name of the heroine of your novel or adapt sales literature when the product name changes.

Instead of laboriously cursoring through the document looking for each instance of the text, deleting it and then replacing it with something different, LocoScript's Exchange feature can do the job automatically.

Exchange in LocoScript 2 is particularly powerful because of the range of options that you can use to refine the search for the text that you want to change. In this article we show you how to make the most of Exchange by using these options in different combinations.

In simple terms, exchanging text involves you indicating to LocoScript the piece of text that you want to replace - the 'Find' text - and the piece of text that you want to replace it by - the 'Exchange' text. LocoScript then searches through the entire document, matching the Find text against the text in the document. Where an exact match is found, LocoScript substitutes the Exchange text either automatically or, in manual code, after checking with you.

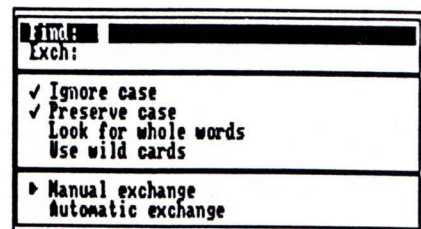
If you select Manual Exchange, LocoScript stops every time it finds a word or phrase for exchange and displays an alert message asking you to specify what is to happen, (ie: do you wish the word to be replaced). Unfortunately you can't always see where LocoScript is preparing to make the exchange until the message disappears, which slows you down somewhat. (Pressing number 2 on the numeric keypad will make it disappear instantly.)

If this were all that Exchange offered, as was the case with LocoScript 1, then you could end up feeling either wary of using Automatic exchange because LocoScript changed too much or frustrated that LocoScript was missing some of the instances you would have liked it to find.

The trouble was that LocoScript 1 took you too literally. It would find every example of the group of characters that you gave as the Find text when, more often than not, you'd want the search to be more selective. For example, if you wanted to replace the word other by alternative you wouldn't want to pick out words such as another. In such circumstances, the option in LocoScript 1 was to exchange text manually, confirming each exchange individually.

Alternatively, LocoScript 1 picked out other correctly but completely missed Other - forcing you to carry out another exchange purely to cope with this.

With LocoScript 2, Exchange has a range of options to help you tailor the search in such a way that you pick out exactly the words or phrases you want. These options can limit the search to whole words, tell LocoScript to ignore the difference between upper case and lower case, allow the use of 'wildcard' characters in your Find text, and preserve upper and lower case when exchanging.



We'll now look at different ways in which you might tailor the exchange and the options that will give you the results you require.

JUST THE WORD ITSELF

A very common need when exchanging text is to make sure that LocoScript only picks out the word that you want and not parts of all words that happens to match. When replacing select by choose, for example, you don't want LocoScript to change select where it appears in selective or selection.

The secret of getting LocoScript to pick out just the word itself is to select the option to Look for whole words. Which other options you select as well will depend on

your other requirements for the exchange - as we explain below.

When LocoScript looks for whole words, it limits itself to matching your Find text against complete words. LocoScript's idea of a complete word or a group of complete words is very much like yours or mine. It normally expects to find a space both before and after the letters but it will ignore commas, full stops and the like that come at the end of a group of words and it treats new lines and tabs as equivalent to spaces.

This means LocoScript can still identify complete words correctly when they come at the end of a phrase or sentence or at the start of a new line.

Something that is important to remember when using Look for whole words is that it will only find precisely the word or words you give - so it won't find simple plurals. However, a second Exchange, this time specifying the plural version, will soon ensure that these are correctly changed as well.

MIXTURES OF CAPITALS

The word you want LocoScript to find could be in the middle of a sentence or it could be at the start or it could be part of a special heading - all in the same document. In other words, it could be written all in lower case letters in one place in the document, all in upper case letters (capitals) in another and as a mixture of upper case and lower case letters in a third. You can tell that these are the same word but to LocoScript capital letters are not the same as lower case letters. So how do you tell LocoScript that you want it to pick out all of these?

The answer is simply that you select the option to Ignore case. With a tick beside this option, LocoScript treats both lower case and upper case versions of the same letter as identical and so will pick out Other, OTHER and indeed any combination of upper and lower case when you tell it to look for the specified word. Of course, the combination of upper

and lower case you use when you type the Find text doesn't make any difference.

If you just want to pick one particular combination of upper and lower case, you should ensure that Ignore case isn't selected! You'll also need to be careful about how you specify the Find text.

PRESERVING THE CAPITALS

Selecting Ignore case deals with the Find side of the operation, but there is another aspect to exchanging text that appears as a mixture of upper and lower case characters. You need to think whether you want the new text to follow the same pattern of upper and lower case as the piece of text you're replacing or to be an exact copy of the Exchange text that you set up.

The Exchange option that controls this is Preserve case. When this option is selected, LocoScript tries to retain the same combination of upper and lower case letters in the text that it inserts; if the option isn't selected then you simply get an exact copy of the Exchange text.

The combination of Ignore case and Preserve case picks out all versions of your Find text and retains the pattern of upper and lower case letters. This is often the combination that will suit your needs - and for that reason, it's automatically selected for you when you use the Exchange menu for the first time in a document.

However, Preserve case won't always be the right option to select because LocoScript can't mimic every combination of upper and lower case. If the word or phrase that is being replaced is all in upper or lower case, then the text that is inserted will also be all upper case or all lower case. So, for example, it would replace COLONEL by GENERAL for you.

But if LocoScript finds a mixture of both upper and lower case in the one phrase or group of chosen words, it will preserve the case for the first letter but the rest will be written in lower case. So

Colonel would become General but if you try to change Colonel Cathcart to General Dreedle, what you'll actually get is General dreedle. To get the result that you want, you need to clear the tick from the Preserve case option. Then LocoScript will replace Colonel Cathcart with what you type in the Exchange menu.

Of course if Ignore case is selected, LocoScript will replace Colonel Cathcart by General Dreedle - but that tends not to be a very common problem!

DIFFERENT SPELLINGS

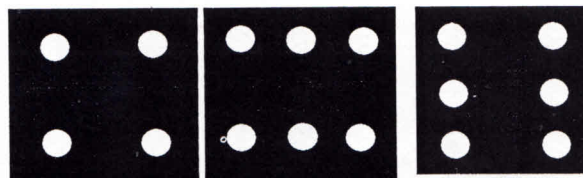
Another common requirement - particularly if more than one person has edited the document - is to cater for the same word being spelt in different ways. Words like realise and organise, for example, might be spelt with either an s or a z - and you might well want LocoScript to pick out both in the exchange.

The option that lets you pick out both spellings of the word is Use wild cards. When you select Use wild cards, you can use the character ? in your Find text to represent any character.

So if, for example, you did want LocoScript to pick out both organise and organize, you could ensure that it finds both by making sure that there's a tick beside the Use wild cards option and typing organi?e into your Find text. (You can't, by the way, use ? in the Exchange text to tell LocoScript to use the same character when inserting the replacement text. If you put a ? in the Exchange text, then LocoScript will only be able to insert a ?.)

In this particular example, you might use all four options together. For example, if you want to change the word where it occurs in both upper and lower case tick both Preserve case and Ignore case. If you want to change the text automatically, you'll also need to select Look for whole words so that LocoScript doesn't pick out the organise in organiser - but then again this might be what you want! ■

The Complete



HOME ENTERTAINMENT CENTRE

For the PCW, a compilation of five great games to suit family members of all ages and levels of ability.

BACKGAMMON

Competing against the computer in a battle of wits and strategy. The player is able to choose the level of difficulty.

DOMINOES

A traditional game that has now been translated for the computer. You have a choice between two versions of the game; Domino Out or Fives and Threes.

DARTS

Whether Five-O-One, Tour Board or Cricket, each game sees you playing a computer opponent that is only as skillful as you choose it to be.

VIDEO CARD ARCADE

A selection of three popular card games including High Low, Poker Royal and Pontoon (Twenty One).

Whatever your preference, the computer makes a great opponent.

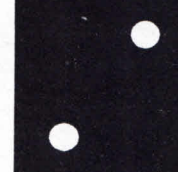
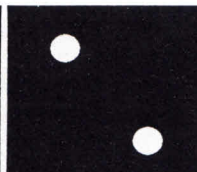
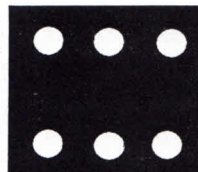
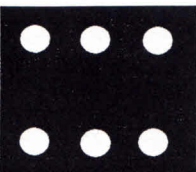
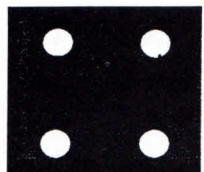
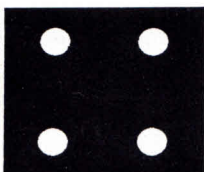
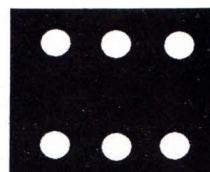
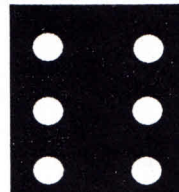
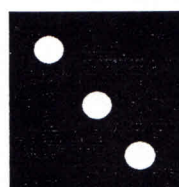
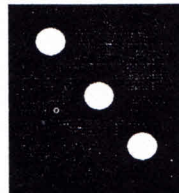
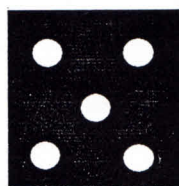
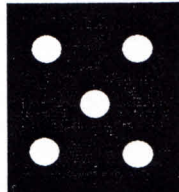
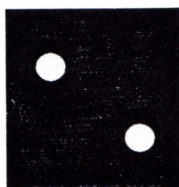
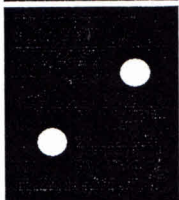
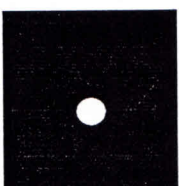
WORDSEARCH

A game for 1-4 players across three levels of fast, brain teasing fun. Wordsearch involves time limits that you set yourself, turning a magazine puzzle into a group challenge.

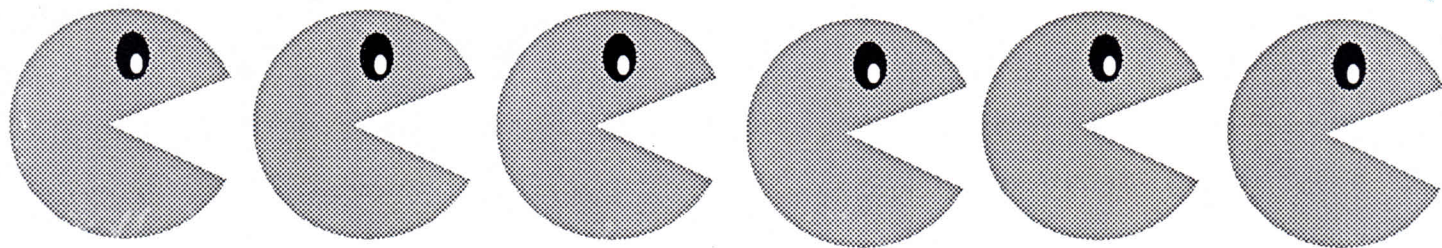
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ENTERTAIN



ALL TIME FAVOURITES Just what the name says, from Accolade

All Time Favourites is a compilation of games that you may already be familiar with, and if it happens that you're not you are lucky to have them selected for you and offered in the one package. No doubt they have been selected from amongst the most popular games on the market. The games include Test Drive, Hardball, Apollo 18 and Mini Putt.

APOLLO 18

This game is of rare character, as it sends you into space but does not send you into combat. There are no alien pow wows; your mission is more realistic, one might say "Down to Earth..."

Your ultimate objective is to retrieve portions of the surveyor III photographic probe, which softlanded on the moon in April, 1967. You must also capture and repair three damaged satellites in Earth orbit. As the lead project astronaut, you must successfully complete the entire sequence of sub-missions that comprise the Apollo 18 project.

You begin your mission on Earth, hence your first objective is to successfully launch your vessel, a Saturn IV-B rocket, into the Earth's orbit. Once launched your voyage is broken down into the sub-missions. You will need to go through the processes of Lunar Module detachment and re-docking in space; course correction manoeuvres; lunar landing; moonwalk mission to surveyor sight; lunar lift-off and re-docking with the command module; space-walk mission to repair satellites; then re-entry and splashdown.

Your flight computer uses Telemetry Screens and Status Screens to convey necessary information for rocket control. From these screens you can observe your progression,

as well as carry out tasks dealing with the inevitable problems that will arise.

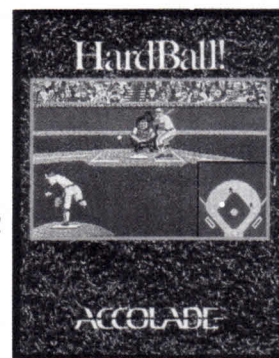
Your Apollo 18 mission is complete only after your vessel has splashed down successfully into the Atlantic. Let's hope it's on course!!

That, however is not the only way to end it. If you abort your mission upon facing minor difficulties you may return to Earth with assistance from your flight computer and find your way back through the appropriate sequences unharmed. Then of course you could always panic in the face of major difficulties and become just another piece of cosmic debris. This can only happen at one of four places in your mission sequence; during lunar landing, during the moonwalk, during the LM re-docking with the CM, or during re-entry. A good feature of the game is offered here; if you do not succeed during any of these processes the computer offers you one opportunity to practise the particular manoeuvre in the simulator before restarting a new mission. What aspirations can befall the ambitious!

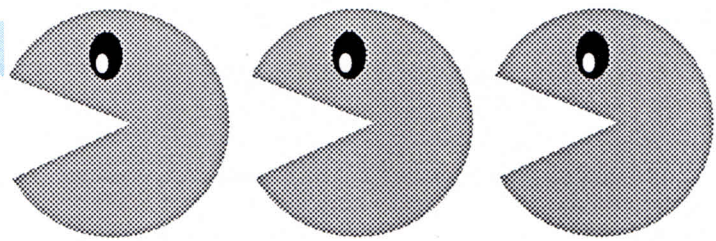
Perfect for pacifists wanting non-violent missions, or for would-be-astronaut dreams that never happen.

HARDBALL

BATTER UP! The Hardball claim to fame is its realism. Sports games programmers go the whole hog when designing the graphics to make them seem as realistic as possible. Whilst not exactly 3D, the players, the crowd and the stadium are portrayed to the smallest detail. Well, maybe not the smallest, you're not likely to see hotdog sauce smudged on a crowd member's shirt, but the personality is there.



MENT CENTRE



PC 5.25" - \$59.95
PC 3.50" - \$59.95

You have a choice between one player or two; in One player mode you compete with the computer. You also have a choice between home or visiting team, which are fictional teams not representative of any real league teams. You are able to control both the batter and the fielders.

The game is played over four screens altogether. The opening screen is the Manager's Decision Screen, and may be returned to during the course of the game. This shows player status and gives you playing options.

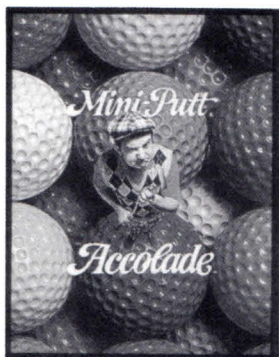
Pressing the space bar from this screen will send you into "Play Ball". You may then use one of three screens at a time; Pitcher/Batter screen, Left Field View or Right Field View.

There are other options to cover the technical aspects of your game, such as Player Substitution, Exchange positions, Outfield, Infield and Intentional walk. These are fairly self explanatory.

Play begins with the Pitcher's Screen. Each action has various options for delivery, such as the different types of pitches and batting techniques. The entire game will involve selections such as these, so practise will see you gaining the necessary expertise on baseball skills that will eventually lead you to astute and strategic decisions. This game format demands involvement from the player making it all the more challenging.

(When they say 'realistic' they mean it. Included among game hazards are player fatigue and individual player strength.)

(This review is continued on page 37....)



ON REVIEW

- *All Time Favourites*.....30
- *The Dark Heart of Uurkrul*..32
- *Second Front*33
- *Bloodwych*34
- *Oriental Games*....35
- *Arcade Bonanza Pak II*36
- *The Thrill Of Winning II*38

THE DARK HEART OF UURKRUL

A fantasy role-playing game, from Broderbund

PC Dual - \$39.95

Uurkrul is literally heartless. His heart and soul are hidden in the depths of the city's maze-like passages and is invincible for as long as it is protected.

In *The Dark Heart Of Uurkrul* you are up against the usual incarnate of evil, but your storyline is original. You control a party that has been chosen by Elaris, the Western Council leader, to defeat the same evil threat upon the Western Lands that befell the once auspicious city of Eriosthe'.

The evil is generated by one man - Uurkrul. Once himself an ancient of Eriosthe', the taste of power led him to destroy the city and begin a siege on all lands to lead evil into supremacy.

An older and more experienced party were earlier dispersed to try to conquer him but did not return. Their party was intercepted and captured, many killed. Their quest unsuccessful, evil growing even more foreboding because of it. The only cause for hope lies in the secret knowledge of Uurkrul's weakness - the weakness that renders even the most powerful of evils vulnerable - his heart. Dark heart to be precise. Thus your quest will centre around its destruction. You are fortunate in that your enemy believes himself to be infallible, an even bigger weakness than any physical feature.

Your party consists of four of the most powerful Aspirants from the Council Training Guilds, each talented in a different craft. A fighter who will prove invaluable for strength and skill in weaponry; a Paladin who is skilled in the laying on of hands is useful for both healing the wounded and harming your enemies; a Priest who can summon the immortals and the elementals when the party is in need of assistance; and finally a magician, who is in possession of skills without which your party would inevitably meet defeat.

Because you are fresh from training it would appear that you have been chosen to spare more significant Guild members from death. However, the fact of your status is essential to the plan in overthrowing Uurkrul. To fool him into a false sense of security by making the threat of defeat as inconspicuous as possible you have been chosen more for your potential than for your proven skills. Aspirants without notable reputations are less likely to attract attention or to caution their enemy by their presence, and therefore your entry into Eriosthe' will not raise

so much as an eyebrow, let alone any suspicion.

Naturally if your quest becomes known Uurkrul will stop at nothing to destroy you. In your wake are cunning traps that need to be negotiated, the hostility of evil and as to be expected the dangers that are associated with any powerful opponent.

Not entirely defenceless, you have on top of your potential a soul amulet for each member of your party. The amulet will allow your souls to be protected and eventually resurrected should any member be killed.

If you are lucky and use initiative you will find the captive party that preceded you and use the hints that are hidden in Mara's diary to find your way through the town. Hopefully you will come across the few uncorrupted characters that suppress their secret wish for peace but will assist you in the downfall of evil.

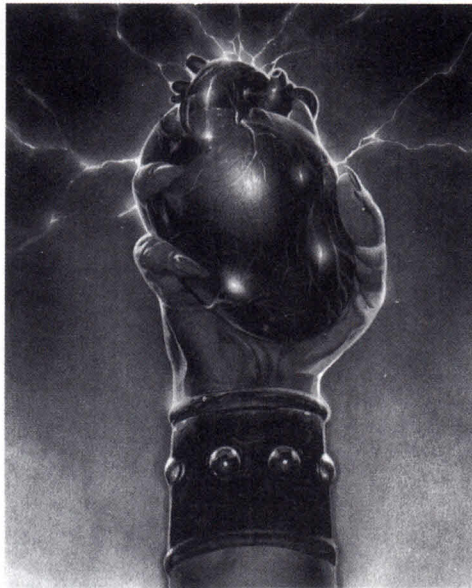
The Dark Heart Of Uurkrul emphasises the power of brain over brawn more so than your average adventure game. Though your enemy's force is weaker in some cases, he is cunning and to defeat him you must be also, in order to anticipate his actions and to outwit him besides.

The graphics are quite impressive and as far as adventure games go the game is easy to follow, so the player who is unfamiliar with such games will have

no trouble learning and the experienced player will be pleased with the difference. The screen layout is a little different and you are addressed with concise dialogue, so you know what you are doing and where you are going at all times and can concentrate on your quest rather than feel lost when first exploring. Often you are given direct instructions or requested to act from a multiple choice menu, either way not left in the dark in any situation.

The instructional dialogue can be construed as both good and bad. Good because it leads you in with direction even in the execution of minor tasks; bad because it could make it too simple by limiting actions to choices offered. You face a specific mission, and having direction makes exploring more relevant and less of a chore.

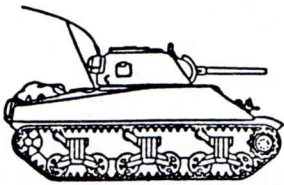
Because you seem to be getting somewhere from the moment you begin it holds your interest longer and keeps defeatist attitudes at bay, success seeming possible no matter how difficult the situation. That makes it worth the appraisal of all game players.



SECOND FRONT

Germany Turns East, by Strategic Simulations

PC 5.25" - \$59.95



M4/75 (Sherman)
Lend Lease

On June 22, 1941, Hitler launched Operation Barbarossa. The invasion of the Soviet Union was one of the greatest military campaigns of modern history. In six months German troops had engulfed most of western

Russia, but they were finally halted at the gates of Moscow and the following three years saw a titanic struggle as the elite German armies were slowly pushed back by the never ending manpower of the Soviets. Now you have a chance to rewrite history as you take control of one of the greatest military challenges ever!

Second Front gives you the chance to replay one of the most important historical campaigns of this century on your PC screen. It is a game of truly amazing proportions; the map extends all the way from Berlin to Stalingrad (taking up several screens) and covers the entire eastern front. The level of military detail is also astounding, as players command over 350 divisions with asset information available as to the individual tank, plan and infantry squad level.

It allows you to conduct every aspect of military tactics that were in operation during the war including air strikes against air-fields and enemy units, strategic bombing and supply drops and the production of war material. Combat information can be as complex as you wish. It can be de-



The German army prepared to attack.

tailed and realistic giving reports of the numbers and types of units involved and the extent of casualties that resulted from your battles, or on the other hand it can simply tell you who won or lost. It displays a level of playability rarely seen on military simulators of this size. It is clear and to the point. The game mechanics are very easy to get used to, a few simple key strokes will tell you all you ever wanted to know (or didn't) about the units under your command and about your war effort in general. It allows you to take full control of the entire war, allowing you to indetermine what happens on the other war

fronts, also giving you the ability to sack commanders and to alter any form of war production at your will.

The game works on the basis of weekly turns where you give orders to the corps or armies under your command. This simply consists of plotting the direction of desired movement and the unit will then attack any hostile force that it comes across. You always have the choice of using air support, but if you can not be bothered to get into the heavy details then the computer can do the rest for you. The strategic aspect of the game is entirely up to you, if

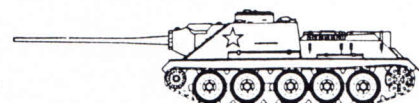
you want to you can do the whole lot or you can just sit back, relax, and send in the panzers. The outcome, however, will be determined by your strategy and how effectively you conduct your battles.



Facing defeat, the Russians apply new tactics.

SSI have managed to produce a very good package, with some very sound planning and thorough work behind it. This game will give even the most dedicated strategist a heart attack! Finally there is a game on the market that will do all a wargame should - it is simple to use and puts up not only a realistic, but also a historically accurate fight. The game requires 640K and EGA or 512K and CGA. It uses pop up menus to display information and it is easily controllable from the keyboard. It runs very well on an AT but expect it to be slightly slow on the XT, however it is still very playable.

If you are a veteran gamer then this is the game that you have been waiting for; if you are just beginning to play then don't be discouraged, there is a help/cheat mode that allows the balance of play to be tipped in either the German or Russians favour but still leaves you with an excellent battle on your hands. Here is a warning though, this game is not the sort that you can finish in only one evening, it will have you hooked for hours (manufacturers specifications clearly state 10-100). This is not the sort of thing to buy if you have any urgent work to do or if you have any exams coming up!



SU-100

BLOODWYCH

A destined-to-become-a-classic adventure for the CPC

CPC Disk - \$39.95

CPC Tape - \$29.95

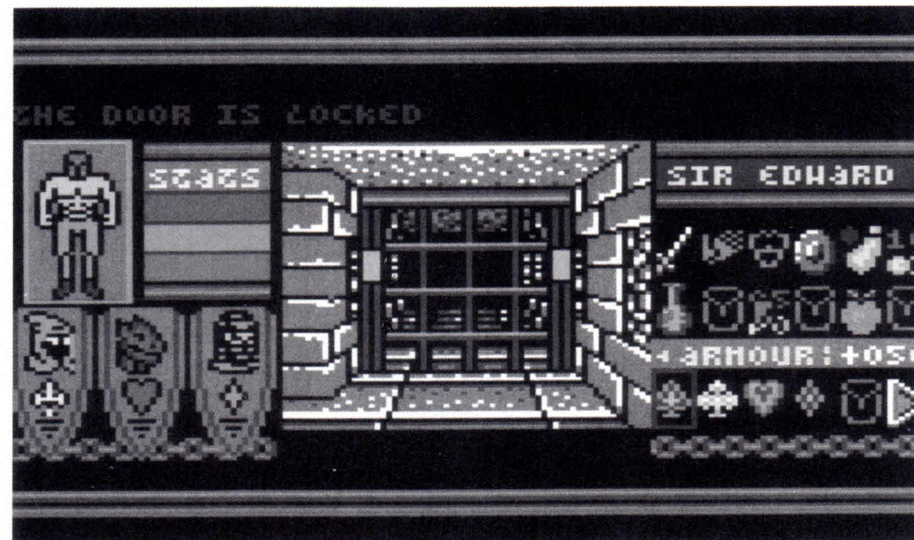
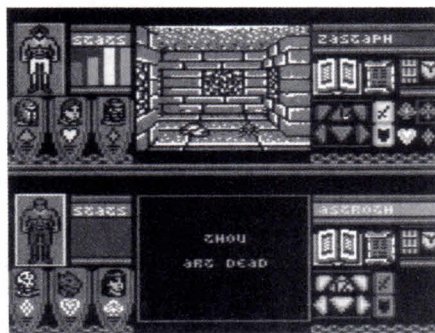
It's hard to know what category to place Bloodwych in, but being a social-niche society you know we'll try. It's an adventure game, yeah, but it's different. A visual adventure, if you like.

Instead of operating through text and dialogue, your characters perform in front of you... you can see your surroundings as you traverse them, can touch objects without keying in commands, and can fight with your fists rather than through words. (Sticks and stones...) Your view is three dimensional in the appropriate direction. Your party members can walk forward, turn, sidestep, and most importantly run like mad.

It is still an adventure, though, at best described as a compromise designed for those who never quite got interested in flicking through screen after screen of dialogue. There is no exciting pace to keep you on your toes or loads of non-stop action, but there is still a lot of mental calculating, exploring and mystery solving.

They have always said that drinking is dangerous, now you might believe them. In the middle of a social drink with a mate or two you suddenly find yourself in one of those 'how did I get here?' situations in which you inevitably end up trying to save the world. It seemed harmless when somebody suggested a quick romp around the dread castle Zendrick, you know, just for a laugh. As one of eight (inebriated?) warriors you volunteered, not realising that your leaders had been possessed by Bloodwych, the legendary white mages of Trazere.

Zendrick himself deserted the Bloodwych to use his vast powers for evil. He summons lords of Entropy to destroy all living things, and a few dead ones into the bargain, and naturally you are to lead you heroic party into the remote corners of the fortress in an attempt to steal the four Crystals of Holding. These four crystals are your only hope in averting Armageddon.



Screen shot, displaying your viewpoint and the icon selection menu.

You have the world at your feet - just which world will depend on your success. If you fail you die in a horribly painful fashion. But if you succeed you may

become inconceivably rich and famous. This is a proposal that's known in the adventuring trade as an offer you can't refuse. Greed is an effective influence towards the right decision, is it not? For the good of the people, of course.

Inside the fortress you will find... basically whatever is there. There are keys to be found, doors to be unlocked, secret panels, weapons to collect. There are heroes and bards and helpful people (or things) all over the place, each having felt frustration in the lack of real power they had over their adventures in times past. The Bloodwych crew have no such problems, as the game operates on an icon system in which all information is displayed on screen or alternatively accessible by a single click on the appropriate icon. Every function is controlled by a small arrow icon. Easy as pie, once you get the hang of it.

The Two Player option is an exceptional asset to the game. Both players are independent and free to roam wherever they choose. When the opposing players meet the choice to help or fight each other depends on both of you... and should be heavily influenced by your reserve of strength and your supplies, I might add.

Overall the game is puzzling and interesting, with strong graphic quality and an absorbing plot. Though the mysterious icon system may be a little intimidating to begin with, patience and effort will succeed it and find you hooked well and truly.

ORIENTAL GAMES

Fast and blood-thirsty combat sports from Firebird

CPC Disk - \$39.95 Tape - \$ 29.95

PC 5.25" - \$59.95

The popularity of Oriental sports has seen the impending release of Oriental Games for the CPC. The game is based on four different combat sports that have originated in the Far East. Kung Fu and Freestyle are martial arts based, as is Kendo. The differ-

The final event is none other than Sumo Wrestling. Gain a few pounds and you are in the thick of it - literally. The objective of this sport is for the strongest person to push the opponent out of the ring.

Unfortunately there is no practise round offered, and even in the first round your challengers are difficult to beat. But then, there's nothing like learning on the job. After some practise you will be up there amongst the best of them. As you progress so do your adversaries, getting tougher and more challenging. Even when you are finally defeated, full stop, dead to the world, your opponents will keep playing without you.

The highest award is the Gold Medal, with silver and bronze coming in behind it. Naturally it will take a great deal of skill and courage to win any of them.

Whilst up to four players can take part in the competition, they cannot play against each other at the first stage. Each is pitted against the

computer separately until they have both won a few rounds and come across each other's path in the natural course of the tournament.

The gameplay is fast and demands full attention, as wandering minds or eyes will leave your player wounded. In fact, don't even blink. The graphics are clear and effective, with close attention paid to detail, such as the features of the background and crowd and the actual players' expressions as they land a hard hitting blow. Each game is in itself centred around a different battle philosophy, so whilst the tournament structure is similar for each there is enough variety to keep players interested and challenged. A little difficult to handle at first, the skill will come with practise and will reward all but sports-haters with a decent game.

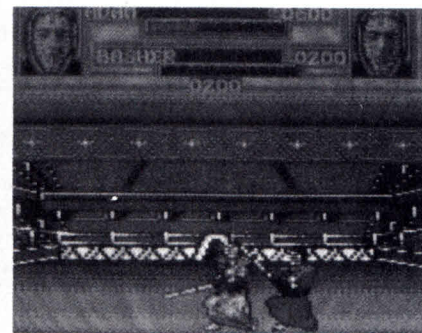
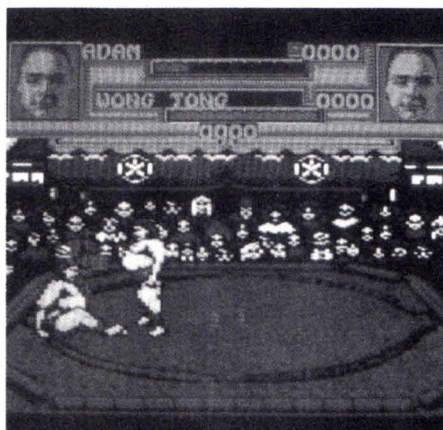
ence between the first two and Kendo is that Kendo involves a certain amount of skill in weaponry, whereas Kung Fu and Freestyle require the skill and agility of feet and fists. In addition to these is the inclusion of Sumo Wrestling.

However, though four different sports are offered in this game, they do not have to be played exclusively. The player must master the art of each combat form in order to prove prowess enough to defeat seven skillful opponents in full competition. Full contact competition, often do or die!

The competition begins with the Kung Fu tournament. You'll expend a great deal of energy here, because Kung Fu is all about speed and the ability to manoeuvre smoothly. Anticipating your opponent's blows is one thing, delivering your own will takes fast thinking and fancy footwork. A good, hard kick wouldn't be sneezed at, either.

If you succeed in Kung Fu then you will progress to the Kendo arena. Armed with a Bo, (otherwise known as a big wooden stick), you must apply the right combination of attack and defence to bring about the fall of your opponent before your opponent brings about yours.

Freestyle is more or less Karate based, a street-wise version of Kung Fu. With less rigid rules, mean and dirty is the way to fight. Even head butts are acceptable.



ARCADE BONANZA PAK - VOL. II

Nineteen game compilation, from Electronic Arts

If you are looking for a game collection with enough variety to last you forever then you can hardly walk past a "pak" containing no less than nineteen different games. (Especially with Christmas coming up and, in some cases, long holidays.) The question is, will a package containing nineteen games necessarily be worth the supposedly bargain price?

Depends what you are looking for. You can compare it to the traditional game compendiums. Obviously the games in the Arcade Bonanza Pak, Vol. II will not be of the same standard of quality as singular packs, but they are not cheap nasties either.

If you have a family of diverse ages and interests then a collection like this could be perfect for you. It has within its box walls everything from space battles to word games to backgammon and chess to bowling... etc.

There are no instructions in the package but don't let this alarm you as the games will offer instructions to you before proceeding. Those that don't give advice are quite simple to work out.

MUNCHMAN: Munchman has the potential to be a high-speed, racy challenge if you don't mind the game finishing before you have even started. (Trust me to begin with the one game that has a flaw in it!) Your objective is to make it through a maze-type design area consuming all of the white dots before the three purple ghosts consume you. You have three lives. The problem is that the three purple ghosts move at least three times faster than you and therefore your chances of winning equal diddly. The graphics are quite simple, but then they are all they need to be for a total of three seconds per game playing time!!

DEPTH CHARGE: In this game you must drop depth charges from a destroyer that travels above water, trying to hit as many submarines as possible as you pass. The deeper the submarine the higher your score, the higher your score the more passes you are rewarded with. The graphics are simpler than simple but the game is quite good. It's not easy and it's not boring, and I have to admit that the "BOOM" of an exploding submarine is cute.

BOWLING: Bowling offers you 60 levels of difficulty. It operates much like the laughing clowns you find at carnivals, with the ball (as heavy as it is) racing up and down the screen at the speed of light, subject to variation according to the game level. You must fire the ball when you think it is lined up with the pins, or anticipate its correct positioning, in order to make a strike or the closest thing to it. Again the graphics are quite simple, but the game itself is entertaining enough to outweigh the need for them.

CHESS: The graphics are improving now. Chess can be played over 24 levels of difficulty. Chess is

chess, so no heavy descriptions are needed. If you need them the game offers full instructions and chess rules, so help is at hand for the player at all times.

BACKGAMMON: Backgammon requires two players as the computer is not offered as an opponent, although you may play against yourself if you wish. Each player has fifteen stones and generally follows the same game pattern and rules as the traditional Backgammon set up. If in doubt, full instructions are provided. It's not inferior to the board version, so it fits in well in the collection. Of course, the level of challenge depends entirely on your own skill and on the skill of your opponent.

FLIP IT: This is a particularly friendly game. All of the games so far ask you your name and address you personally, but this one smiles, too. It's name is Percy and has one up on you until you work out what out-flanking means. After that it's a lot of fun and lasts for a decent length of time.

YAHT-ZEE: Just like the real thing. If you've played Yaht-zee before you won't be let down by this computer version, the only difference being that tossing the dice is as simple as pressing a key and you don't have the effort of writing in scores or calculating them thereafter. You can play with a few players or compete with the computer.

RULER: If you aspire to royalty then, Your Majesty, this is your game. Except you're in the hot spot. You have peasants to feed, bushels to plant, harvests to reap, and basically require good management skills to run your land. Ruler is played entirely through dialogue and demands calculations to stop your people dying from starvation. Not bad once you get the hang of it, certainly the plot of the game is original.

KILLER BEES: Not the most delightful subject for a game, but if they can make a movie on it then why not. Another game that is played through dialogue; it encourages strategic thought and anticipation of danger. Playing over various sections and applying various tactical phases to defeat your enemy, it can be engrossing and is quite challenging.

SABOTAGE: Sabotage is one of those nice, relaxing games where the fate of humankind rests in your hands. But stay cool... it's also played via dialogue with your computer and is nothing if it's not dull. Maybe you'll be interested enough to take it further than I did, but if not don't let one bad egg spoil the batch.

VAMPIRE QUEST: The last of the dialogue games and more interesting than Sabotage. If you like that sort of thing; at least in this one we see more than "nothing interesting here" and seem to progress somewhat with each step.

PC Dual - \$39.95

ROCKETS: The graphics keep getting better and better. Rockets is your typical space battle game; colourful, energetic and fun.

ROUND 42: As above, but even more colourful.

MINDSCAN: this is for the budding con artist, or the compulsively dishonest. It's not a game as such, but is a deliberate plot to fool your friends. The idea is to ask your friend to select a card ("pick a card, any card...") and tell you what it is. In the old spirit of 'the hand is quicker than the eye' and any other magician's cliché that you can think of, you then key in that card and fool your friend into believing that the computer has guessed it. How is this done? The trick is to keep your friend's eyes on the computer screen and not on your keyboard, as the all-conspiring computer will appear to be accepting a command of "MIND RETURN" regardless of what your fingers are really keying in. It even pretends to calculate

with a lovely and colourful calculation display. Ha ha, wasn't that a good one.

CONCENTRATION: Concentration is basically the old card game of Memory. The difference is that you play against the computer. It involves a deck of cards laid face down on a board, and the players having to select two at a time to look at and hopefully score a pair which is then removed from the board. It's a good game, but the fact that the computer scores so many matches is more than a little bit suspect.

The Arcade Bonanza Pak contains more than the above mentioned games, but by now you should have got the picture. It covers a wide age range and a variety of interests and isn't the sort of package that holds the interest of a family for only one week before being thrown onto a shelf and forgotten. Ideal as an easy boredom beater, if you don't mind the sometimes simple graphics you will declare it 'fun'.

ALL TIME FAVOURITES

Continued from Page 29.....

PC 5.25" - \$59.95

PC 3.25" - \$59.95

MINI PUTT

Mini-Putt is the golfing game with a difference. I shouldn't say golf really, as it is played on a mini golf green. You won't need to be a golf fanatic to play this one, nor just a sports simulation fan. The game will have universal appeal, as it adds an element of humour to a serious sport.

As well as developing putting skills, you will need to anticipate the unexpected results of your drives. Your golf balls will ricochet off walls, obstacles on the course will sometimes spring to life and harmless looking greens have a healthy appetite for golf balls. It is challenging, amusing and frustrating all at once.

Your screen is divided into sections. The larger portion displays the green allowing you to aim your shot by pointing the cursor to the desired destination. Your golfer stands in a box in the left-hand corner, ready to play the shot. To swing you must press the fire button twice, so good timing will be the driving force behind your success. The further back you swing your club, the stronger your drive will be. Simple calculations about the distance of your desired landing position and the required strength of the shot will be necessary, but don't let common sense scare you. If you make your shot as soon as the indicator reaches the accuracy bar (situated on screen) your shot should be well lined up.

The terrain is smooth in some areas, sloped in others, and riddled with obstacles in yet others. Obstacles include walls, bridges, and as to be expected, water traps.

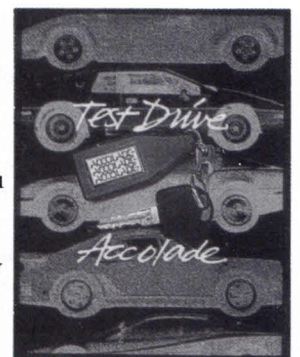
TEST DRIVE

I'm glad I don't own the car yard that owns these vehicles. In Test Drive you take the wheel of any one of five exotic sports cars. Not just any sports cars, mind you, but very fast, and very valuable cars. Exceptional cars. In fact; Lamborghini, Lotus, Porsche, Ferrari and Chevrolet type cars.

Putting your skills to the test and pushing the cars to the max is what Test Drive is all about. Its popularity earned it the title of a classic. Simulate your way through this; don your sunnies and don't forget your seat belt, because you'll be hooning along a mountainous road. You will have to dodge potholes, Sunday drivers, water slicks and speed limits. Just because you're cool doesn't mean you're above the law!

It must be a weekend blitz because the cops are everywhere, armed with radar guns and trigger happy. Somehow you have gotten hold of a radar detector - are they legal? - so you do get prior warning. If you break the limit in a speed trap you will end up with a Police car on your tail, and only fast thinking and fast action will see you able to outrun it.

You're not just cruising though, you do have an objective. Ultimately you must make it to the top of the mountain before your five chances have run out - any which way.



THE THRILL OF WINNING, VOL.II

A spectacular compilation from Electronic Arts

Game compilations are coming out of hibernation at the moment to rush head on into the Christmas season. The reason being that they offer a variety of games that either satisfy the interests of all members of the nuclear family or keep even the most restless individual occupied with their diverse content.

The Thrill Of Winning, Volume II. is no exception to this rule, including four different games in all, each with their own disks and instruction booklets. The games must be installed to a hard drive, however, as the disk content is condensed.

POWERDROME

Powerdrome is a futuristic flight simulation that involves racing the most determined pilots in the galaxy in order to win the prestigious Cyberneuse Trophy. You are flying against them in a quad boosted Typhoon racer.

The graphics are excellent and the pace of the game exciting. It is extremely difficult and frustrating when learning to manoeuvre, but it is a great deal of fun and very addictive. The animation is fast and exciting, and as you become more experienced the race course becomes more complicated, adding features such as closing walls and sudden dips here and there.

Race details are attended to thoroughly. From the introduction screen you are taken to your Race Control Panel where you are given a menu which opens to race information. Because of the different atmospheres of each course you must tune your Typhoon before each race to make the necessary adjustments. For example, Track One's atmosphere consists of oxygen whereas Track Two's is of methane.

There are five successive tracks in all, beginning with a test oval. It will take practise to adapt your skills and eventually keep up with your speedy opponents. The game in its entirety is fast and absorbing and if you are alert you might just stand a chance.

688 ATTACK SUB

The first comment in your instruction manual reads "There are only two kinds of ships; submarines and targets..."

By the sounds of it the player must possess ruthless killer instincts. You are given command of a nuclear-powered attack submarine. A versatile ocean going 'defence' weapon? Apparently more like 'attack'. "You are now a hunter/killer, a predator of the deep." Not a game for pacifists, I assure you.

You are American and pitted against the Soviets? Not necessarily! For once you have the option to choose your patriotic position. The technical charac-

teristics of the opposing subs are completely different.

The game is played by using control screens to set the options needed for each function of your sub. Before playing you configure your game parameters and choose your mission. There are at least twelve different missions to be followed, each independent of the others and even then different according to whether you play from the Soviet or American perspective. Some missions also have a predetermined time limit to make the demand on your skills even more stringent.

The games are realistic and playable, and because of the variety of viewpoints and mission objectives will not leave you short of interest. (If you would like to see a full review of 688 Attack Sub, then refer to page 12 of TAU August, 1989.)

POPULOUS

Here's a game with a difference, designed for anyone who's ever wanted to play God. But remember before you begin, religion was never an easy thing to control, and gods don't always have it easy.

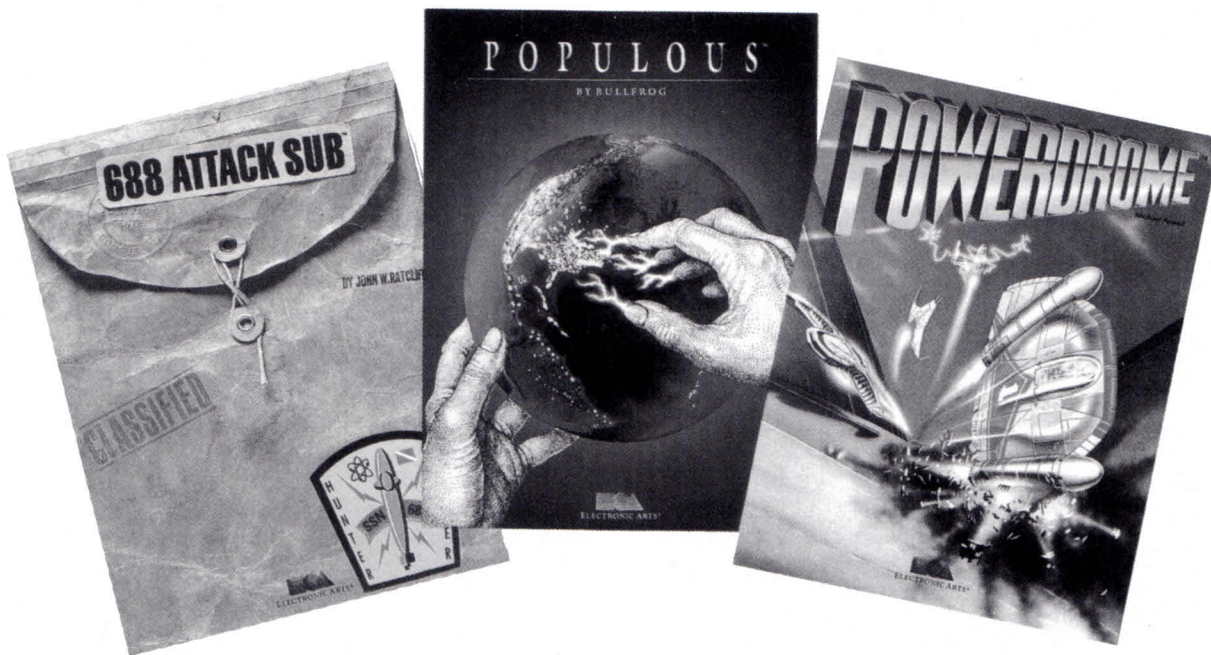
In Populous you are a divine being - your power is determined totally by the amount of followers you have and also by their achievements. It is therefore in your best interests to keep them happy and assure their prosperity.

The problem is that you have competition. Some misguided people have created yet another deity, so you and your loyal followers must crush the non-believers and become a more powerful race. Let's face it, two gods just won't fit in the one world, "There's barely enough room in this world for your own magnificence".

The screen layout is fantastic. At the top of your screen you have before you a bountiful book of maps, containing endless regions for you to enter and build upon. Surrounding your activity area are tile-like squares that hold icons that are readily exposed for you to enter options at a click of the mouse, replacing the usual pull-down menu system. The playing area itself is a large square on the screen which brings your chosen region to its three dimensions for you to work on. It's like running a universe from the top of a bright and organised desk!

Your region will be swarming with little followers and you work in conjunction with them to build your empires. To do this you position your cursor and use the mouse to strategically balance land enough for castles to be built and for your people to become stronger with the growing amount of territory they control. You play with land depressions and geographical features to do this, and your blue walkers will defend your existence by fighting religious wars

PC Dual - \$64.95



against opposing red walkers in your honour - how's that for realism?!

After you have practised on your tutorial game, you begin to follow your objective with the first of 500 worlds, each world getting progressively harder. The world you are given with each success will depend on the score that you achieved during the previous game and will match your proven abilities.

The gameplay and the graphics of Populous are exciting and will give you endless fun - one might say eternal, even.

WORLD TOUR GOLF

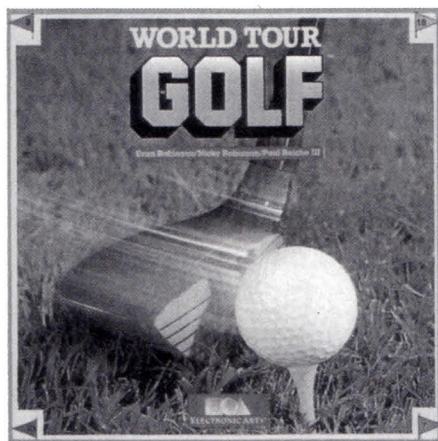
World Tour Golf stands at a fair on its own but doesn't compare to other golf simulations. But then again, you won't find such games conveniently packed into compilations, will you?

It's good in that it puts variety into the package, although the graphics are quite crude compared to the other games-in this particular pack.

You can choose your course from a selection of ones provided or you can construct your own course if you choose. To play you simply need to practise achieving the right combination of strength and

accuracy. Once this is done you can concentrate on your strokes and on the particular course you are following.

To play your stroke you press enter to go to tee. The left half of your screen shows a birds-eye view of



the hole, while the right hand screen displays the golfer's point of view as well as important game information. The golfer is on tee; you have already selected your club and are lined up over the ball. From there you press enter again when your swing is at the right position, which is determined by the indicator on the panel - and off you go! There may be a few hazards in your way, and if you play a bad stroke your player will say something to the effect of "@#%\$&^*~". But then, what's a sportsperson without a temper?!?!

As far as game compilations go, The Thrill Of Winning is of an impressive standard of quality. Not only does it provide variety, but the actual selection of games offered is good, not chosen from the pool of your average plain wrap bargains so common in such packages.

Commanding Graphics 2



A continuation of Part Two of the GW Basic series by Gary Koh, covering graphics features such as CIRCLE and PAINT.

In the November issue of TAU, Gary Koh began Part Two of the GW Basic series, concentrating in particular on the commands of CIRCLE and PAINT whilst also dealing with other related graphics features. This month, Part Two continues, with more programs for you to utilise and information on how to make the most of GW Basic's graphics capabilities.

To dive in head first and begin the article where it left off last month, the following program shows how CIRCLE and PAINT can be used. It works in all screens.

TUNCIRC

```

100 ' Tuncirc - Tunnel circle demonstration
110 ' Gary Koh
120 ' The Amstrad User Nov '90
130 '
140 SCRMODE=9
150 SCREEN SCRMODE
160 CLS
170 WINDOW (0,0)-(639,349)
180 KEY OFF
190 CLS
200 CCOUNT=1
210 ANGLE=1
220 PICONST=3.141593/180
230 XASPECT=1:YASPECT=.75
240 FOR RADIUS=160 TO 10 STEP -1
250 ANGLE=ANGLE+10
260 IF ANGLE>361 THEN ANGLE=1
270 CCOUNT=CCOUNT+1
280 IF SCRMODE=9 THEN IF CCOUNT>15 THEN CCOUNT=1
290 IF SCRMODE=1 THEN IF CCOUNT>3 THEN CCOUNT=1
300 IF SCRMODE=2 THEN CCOUNT=1
310 X=320+(COS(ANGLE*PICONST)*RADIUS*XASPECT):Y=170+(
SIN(ANGLE*PICONST)*RADIUS*YASPECT)
320 CIRCLE (X,Y),50,CCOUNT
330 PAINT (X,Y),CCOUNT
340 NEXT
    
```

The only reason why the filling works here is because of PAINT's quirk. Otherwise, with circles being placed on a background of different coloured circles, strange things might have happened. It looks good on EGA, but CGA leaves something to be desired. Try changing line 170 to WINDOW (0,0)-(1279,699) and run the program again. See what happened? The circular object should have been halved in size. Try changing it to WINDOW (0,0)-(2559,1399). It should have shrunk in size by half again. As you see, this command can be useful for scaling objects.

OK, now we can get back to EFFECT. The tiling pattern has to be eight pixels wide, but can be any length from one pixel to sixty-four pixels down. You might think that each pixel takes up the same space in the tiling pattern, but this is not the case. The tiling pattern also includes the colour number for the pixel to be plotted. In screen 2 one bit is only needed for each pixel, making things simple. In screen 1 two bits are needed and in all the EGA screens four bits are needed. This is not too hard, but the way they are arranged is in such a scrambled manner that it is almost impossible to follow.

The following diagram shows the bit arrangement for a tiling pattern in screen 2. It is shown in binary and hex because that is the easiest way for it to be displayed.

FIGURE 1

		Bits across								Bytes
		1	2	3	4	5	6	7	8	
Lines down	1	x		x		x		x		&HAA
	2		x		x		x		x	&H55
	3		x		x		x		x	&H55
	4	x		x		x		x		&HAA
	5		x		x		x		x	&H55
	6	x		x		x		x		&HAA
	7	x		x		x		x		&HAA
	8		x		x		x		x	&H55

Since there are only two colours only one bit is needed for each pixel. The above is an 8 by 8 bit pattern, 8

bytes long. The following is a simple example program that only works in screen 2.

```
SCR2TILE
100 ' Screen 2 Pattern Tile demo
110 '
120 SCREEN 2:CLS
130 KEY OFF
140 WINDOW (0,0)-(639,199)
150 FOR COUNT=1 TO 8:READ BYTE$:PAT$=PAT$+CHR$(VAL("&
H"+BYTE$)):NEXT
160 DATA AA,55,55,AA,55,AA,AA,55
170 LINE (50,10)-(600,150),1,B
180 PAINT(60,100),PAT$
```

In screen 1 there are four colours, needing two bits to encode them. Only four pixels can fit in one byte, unlike screen 2, so the width of the tiling pattern is two bytes. The bits are encoded in groups of two, from left to the right. The following diagram may help.

FIGURE 2

Pixels	—	1	2	3	4	5	6	7	8
		01	10	10	10	01	10	10	10
Bits	—	76	54	32	10	76	54	32	10

If you want to fill in using a pattern of little x's. The following diagram shows how to construct the pattern. This is in colour number two, but you can change it.

FIGURE 3

	1	2	3	4	Bytes
1	10	00	10	00	8888
2	00	10	00	00	2020
3	10	00	10	00	8888
4	00	00	00	00	0000
5	10	00	10	00	8888
6	00	00	00	10	0202
7	10	00	10	00	8888
8	00	00	00	00	0000

	5	6	7	8	Bytes
1	10	00	10	00	8888
2	00	10	00	00	2020
3	10	00	10	00	8888
4	00	00	00	00	0000
5	10	00	10	00	8888
6	00	00	00	10	0202
7	10	00	10	00	8888
8	00	00	00	00	0000

The following program shows the pattern in screen 1. It will only work in this screen. That is one of the major problems with tile patterns, they will only work in one set of screen resolutions. Making a slight change to the pattern can also change the description bytes so that they may end up being almost totally different.

```
SCR1TILE
100 ' Screen 1 Pattern Tile demo
110 '
120 SCREEN 1:CLS
130 KEY OFF
140 WINDOW (0,0)-(319,199)
150 FOR COUNT=1 TO 16:READ BYTE$:PAT$=PAT$+CHR$(VAL("&
H"+BYTE$)):NEXT
160 DATA 88,88,20,20,88,88,00,00
170 DATA 88,88,02,02,88,88,00,00
180 LINE (50,10)-(300,150),1,B
190 PAINT(60,100),PAT$,1
```

That leaves us with the EGA screens, which are the hardest screens to produce tile patterns for. With 16 colours you will need four bits to encode them. That means that the width of one eight pixel line is four bytes. To do the equivalent of a screen 2 tile pattern on an EGA screen takes four times as much space. On the bonus side, you do have a lot of colours to play with. The following diagram shows a very simple stipple pattern using colours 4 and 5, only two lines long.

FIGURE 4

	Pixels								Bytes	
Line 1	1	2	3	4	5	6	7	8		
	0	0	1	0	1	0	1	0	1	55
bits	1	0	0	0	0	0	0	0	0	00
	2	1	1	1	1	1	1	1	1	FF
	3	0	0	0	0	0	0	0	0	00

	Pixels								Bytes	
Line 2	1	2	3	4	5	6	7	8		
	0	1	0	1	0	1	0	1	0	AA
bits	1	0	0	0	0	0	0	0	0	00
	2	1	1	1	1	1	1	1	1	FF
	3	0	0	0	0	0	0	0	0	00

As you can see, each set of four bytes encodes only one line. Each of the bytes in that four byte line do not contain two pixels. Rather, they contain a little bit of all the eight pixels in the line. The following program which works in screen 9 will demonstrate how this pattern works.

SCR9TILE

```

100 ' Screen 9 Pattern Tile demo
110 '
120 SCREEN 9:CLS
130 KEY OFF
140 WINDOW (0,0)-(639,349)
150 FOR COUNT=1 TO 8:READ BYTE$:PAT$=PAT$+CHR$(VAL("%&
H"+BYTE$)):NEXT
160 DATA 55,00,FF,00,AA,00,FF,00
170 LINE (50,10)-(600,260),1,B
180 PAINT(60,100),PAT$,1
    
```

The last parameter, BACKGROUND, is used when there is a clash of colours with the chosen colour in the area being filled and the colour in the tile pattern. Say for example you wanted to fill a red area with a pattern of both green and red. Normally PAINT will stop if it comes across two consecutive bytes of the same colour being set. Using this you are able to specify the background colour regardless of this rule, although it still chooses to cop out if two or more lines in that pattern are the same colour as the background.

I will be having a look at stippling and cross hatching now. Both of these basically mean the same thing, combining pixels of different colours or combining pixels in different patterns. Stippling refers more towards the mixtures of colours and cross hatching to the various combinations of patterns. The following program is one that was written quite by accident. The end result was not one I had anticipated, but it was pretty good anyway.

BOXCROSS

```

100 ' Box cross hatching display
120 ' by Gary Koh
130 ' For The Amstrad User Nov '90
140 '
150 SCRMODE=1
160 SCREEN SCRMODE
170 CLS
180 KEY OFF
190 WINDOW (0,0)-(639,349)
200 COL1=6:COL2=1:COL3=2:COL4=3:PIXSKIP=2
210 IF SCRMODE=1 THEN COL1=1:COL2=2:COL3=1:COL4=3:PIX
SKIP=4
220 FOR BOXCOUNT=2 TO 650 STEP PIXSKIP
230 PSET(1+BOXCOUNT,348-BOXCOUNT),COL1
240 LINE STEP(0,0)-STEP(638-BOXCOUNT*2,0),COL1
250 LINE STEP(0,0)-STEP(0,-348+BOXCOUNT*2),COL2
260 LINE STEP(0,0)-STEP(-638+BOXCOUNT*2,0),COL3
270 LINE STEP(0,0)-STEP(0,348-BOXCOUNT*2),COL4
280 NEXT
290 FOR DELAY=1 TO 5000:NEXT
    
```

It produces quite an interesting combination of stippling and cross hatching, working in screen 1 and screen 9 but not in screen 2. The most effective is screen 9 because the pixels are small enough to almost blend in with each other, making a very good impression of producing new colours. It will actually work very effectively in screens 7 and 8 as well, if you want to try it that way.

By changing the values of the colours in lines 190 or 200, you can create entirely different effects and patterns. This program produces several different cross hatch patterns, as you can see in the final result. By blending in colour you also produce a stippling effect. Many varied affects can be produced this way. In fact, by combining both effects it is possible to produce literally hundreds of intermediate colours.

One of the ways in which this can be put to good use is by way of shading, to produce objects that have a real three dimensional affect to them in EGA by employing a stippling shadow effect. With VGA you do not really have to worry about this since you have 256 colours to play with. It is almost impossible for me to show you any shading effects on objects here because of the limited commands of GW Basic in the area of drawing. ■

In Next Month's Issue...

Gary Koh's series on GW Basic will continue with the last of the graphics commands; DRAW, PUT, GET, PMAP, and VIEW. Part Three will be the final GW Basic Graphics instalment as such.

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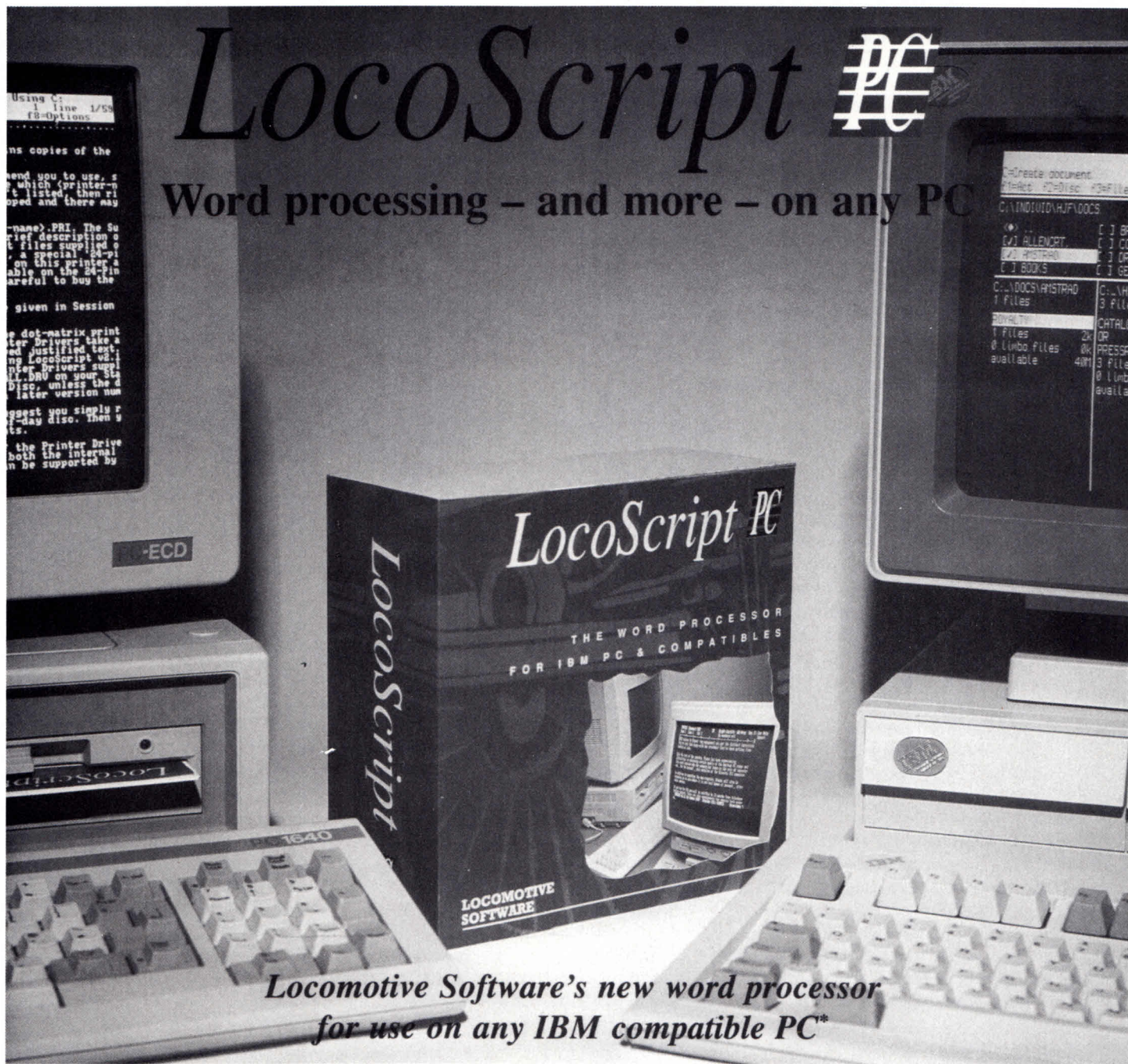
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It all Adds up



Joseph Elkhorne takes a look at accounting software to suit both home budgeting and business requirements.

Joseph Elkhorne takes two accounting programs created for different purposes and puts them under scrutiny. If you find numbers fiddly and are looking for accounting software to help you organize your personal accounts, then Home Accounts could be the answer to your budgeting problems. On the business front DG Calc is a spreadsheet program that will keep your figures fool-proof.

HOME ACCOUNTS

Digitia International, a U.K. based software house, have released this complete home accounting package, which might be even able to help you budget to support your computer hobby.

The goodies come in a VHS style plastic case, handsomely presented. Inside, we find one 5.25" disc, a Pacronics warranty card, and a thorough user manual. The PC version is menu-driven and some of the specifications are: 60 expenditure accounts; 10 income accounts (they must be optimists!); over 300 transactions per account per year; transaction sorts; searches by date, reference, account and month; 100 standing orders; various reporting options to screen or printer; and it runs in either monochrome or colour.

Although the program is initially set up for an Epson compatible printer, it can be configured

for other PC compatible printers. Additionally, there is a SETUP option, so the user can customise screen colours. Good!

With the latter, you can set header background and foreground. Likewise for bottom line and screen. The SETUP standalone program incorporates both the screen and printer configuration options.

Standard to their philosophy is the expectation that the user will backup the master disc. A bow is even made in the direction of hard disc users. Advice for data security is also included in the manual.

Although there is a comprehensive Tutorial Section in the book, the authors point out: "If you are reasonably experienced, and patience is not one of your virtues, then it is possible to get going quickly by reading the Reference Section".

Their theory of operation encompasses four steps: define the accounts, items of expenditure, enter the budgeted figures, and the details of regular transactions.

One begins using the program by setting the current date, if necessary; in practise, it reads the date from DOS. Then it will automatically enter Regular Transactions.

The Tutorial Section works through setting up two simple accounts and a budget in one file. This will take about half an hour.

Actually, one wonders why a sample file is not included on the program disc, for the edification of the new user. Maybe they work on the theory of 'when all else fails, read the book'.

There are eight choices in the Main Menu. Each is clear and straightforward. The first option for a new user, of course, is to choose Set Up. This is for file creation or modification, and not to be confused with the standalone SETUP program.

Home Accounts runs in 12 month cycles, from the month the user selects. Thus, its operation can correspond to either the calendar year or the financial year.

Once a file is set up, the 'template' can be copied, so that the user need not re-invent the wheel in the second year of use.

Expenditure accounts have a Warning Limit option, for all you big spenders.

A Memo Pad facility for each account is available, which can be used for telephone numbers, names, PIN numbers and the like.

Overall, Home Accounts is easy to use and will be a boon to organising your finances. At a price of \$89.95, you can replace that shoebox full of bits of paper.

The only quibble I found in using the program is the obscurity of the F1 and F10 keys. Granted, they are mentioned slightly in the manual, but a novice could be trapped in a sub-menu with no

clear understanding of what is happening. There's no on-screen warning.

F10 chooses a Delete Line option, and does prompt the user for a confirmation, however F1 selects the Edit mode and changes the cursor style but could cause problems. F9 is used for sorting transactions. I'd say a little re-write of the Reference Section would be an improvement here. I might be overly picky about user manuals, but I think one should always consider the problem from the beginner user's point of view.

Still, those are minor cosmetic factors, and the information is buried in the manual. All in all, I'll give this a 'thumbs up' and look forward to seeing more products from Digita International.

DG CALC

Welcome to the world of spreadsheet calculations. Digita International have released a more than adequate application for the modest sum of \$89.95.

Inside the sturdy plastic box, similar to a VHS type, we find one user manual, a quick reference card and a 5.25" disc. The manual is well presented, with a thorough table of contents and an index. There's also a warranty card from Packtronics (NSW).

If you're not familiar with spreadsheet workings, it will take some slow and methodical study to learn how to drive DG Calc. Fortunately, there is a Tutorial section in the manual. You'll probably need it!

Less fortunately for the unwary, it is possible to follow the instructions and still be marginally wrong. There is, you see, a demonstration spreadsheet file already on the disc, obviously an after-thought. If you laboriously follow the advice, you can zap the readymade disc file.

Still, lack of attention to detail is not unknown in the computer field. All the information you'll need is in the manual - getting it out may take a lot of page flipping, however.

Maybe I'm cranky, but it seems

that if a user specifies the filetype in an entry, the program ought to be smart enough to accept it. The busy reviewer discovering a DEMO.SPR file and trying to load it in that fashion is told DG Calc doesn't know anything about it. Page 23 tells you that the program appends the suffixes .SPR to a spreadsheet file and .TXT to the ASCII variation of one.

Anyway - what is a spreadsheet? Essentially, it's a 'number-cruncher' in a matrix format, row and column.

Suppose you were running a business and needed a clear presentation of your stock investment. You might set up a specific spreadsheet with the unit cost of an item, include columns to show shipping costs, duty, tax, markup, and so forth.

Not only can you enter specific numerical information, you can manipulate each row/column junction, called a 'cell', in various ways. These include arithmetic, mathematical, trigonometric and statistical calculations.

DG Calc is menu-driven and includes nine user-definable Function keys. The program and the data file reside in memory, making it very fast in operation.

Learning the various key commands is a little tricky for a beginner, but it's all there in the manual. I had more than one occasion to check it, I assure you. For instance, I would not have assumed Control-W as the command to delete line from current position. But when they explain this as 'wipe', it makes sense.

Lest some high-level professionals assume that DG Calc is a toy, here are a few of the specifications: 512 rows, 52 columns, 26624 cells available; cell locking, justification, and zero suppression; adjustable column widths; integration with other programs (ASCII export option); window scrolling; 52 user defined variables; password facility; GOTO cell feature; accurate to seven decimal

places; line editor; and various print options.

You can use the printer initialisation codes from within DG Calc to configure your printer. Nice!

The Export feature means that not only can you use your prepared data from DG Calc, but can also manipulate it for other purposes, with a word processor, for example.

Anyone who's been exposed to Super Calc will recognise similar-

The screenshot shows the DG Calc interface. At the top is a menu bar with options: Attr, Copy, Del, Edit, File, Goto, Ins, Os, Title, Undo, Width, Quit. Below the menu bar is a table with columns labeled B: Oct, C: Nov, D: Dec, E: Jan, F: Feb, G: Mar. The table contains 13 rows of data under the heading 'REVENUE EXPENDITURE'.

A:	B: Oct	C: Nov	D: Dec	E: Jan	F: Feb	G: Mar
0: REVENUE EXPENDITURE						
1: Purchases	500	500	1000	1000	2250	2250
2: Advertising	500	1000	1000	1000	1000	3500
3: Director's salary	1596	1596	1596	1596	1596	1596
4: Salaries	2216	2216	2216	2216	2216	2216
5: Rent			375			
6: Telephone		300			300	
7: Insurance		200				
8: Printing, stationery		400		200		
9: Repairs & renewals				250		
10: Hire of equipment	60	60	60	60	60	60
11: Motor & travel	500	500	500	500	500	500
12: Sundry	200	200	100			
13: Accountancy	250	425				

A spreadsheet from the DG Calc program.

ties with this program. And, with its modest cost, you'll be laughing.

DG Calc also has mouse support, though I did not try this out. By following the tutorial, I was able to generate a sample file in a very few minutes.

The grey-on-black 'standard' display is boring, I could find no setup procedure to take advantage of a colour monitor. Perhaps a TASR utility could help here.

One of the more pleasant surprises from this package was the expectation that you will back it up. No paranoid protection schemes here. Indeed, I needed to transfer it from 5.25" to 3.5" just so that I could use it.

The manual includes sensible advice about backing up data files, and a procedure for doing the same. One little bonus you'll find on the program disc is a menu-driven demo of other products from Digita International. This even allows you to 'try before you buy'. Impressive!

Both DG Calc and Home Accounts are distributed in Australia by Packtronics.

Gumboots Oz



Educational and fun, Gumboots Australia is the perfect learning aid/game for children at the age of 8 years and up

Gumboots Australia is an Australian version of the popular programs in the Carmen Sandiego series, designed to educate in much the same way but in a more concentrated area. The box cover could be misleading, as it shows little of 'history' history but much of modern history, with a skyscraper, a tram, the Opera House, and a very '90's looking young man in sunglasses and gumboots. What happened to visions of aborigines, ships, swag-gies and bushrangers?

Gumboots Australia is a fun way for children aged eight and up to learn about Australian places and history. We never had it so good! Based on historical fact, you will find the county's features situated in towns all over the continent. More than that, you will find the program geographically informative as the player is continually travelling from place to place to place....

When you first enter the game it will ask you your name and from that point on address you personally, a nice feature in any game. Though the graphics are similar between most cities, and again between most country towns, you may mix and match

the colour combinations of both the pictures and the background so that the screen is never monotonous to watch.

Gumboots is also a good introduction to research skills, as the player takes an active role in his-



torical awareness by signing up as a detective with an Australian enquiry agency.

The Gumboots Enquiry agency provides some helpful information to start you on your investigation, and the rest requires the players own initiative. It will be almost like backpacking across the country, for whilst the player is pro-

vided with the information database and the Big Map, she or he will be required to take on a casual job here and there when funds get too low.

The investigation is not general, as specific cases are issued and involve the recording of discovered information into a personal on-disk notebook (this is done automatically) and occasional consultation of case instructions, which are always at your disposal. Your case could be one which requires you to find the missing sales rep called Blisterin' Bill, or it could be to find Grandma's socks, or any other from the long list available. Your first case will be a simple one to let you get the hang of it. In each case you are given a scenario and a general direction to follow; from there your clues will lead you to the answers.

Though each town has only four different locations to visit within itself, there are dozens of towns to choose from so the overall list of locations is quite impressive, and in each of these towns you will find three jobs to

apply for to provide a source of emergency income when funds are low. If you need to follow a certain direction and are not sure of which location to travel to next, you may refer to the Big Map to see before you every place in Australia, and specifically every place that is in your intended direction.

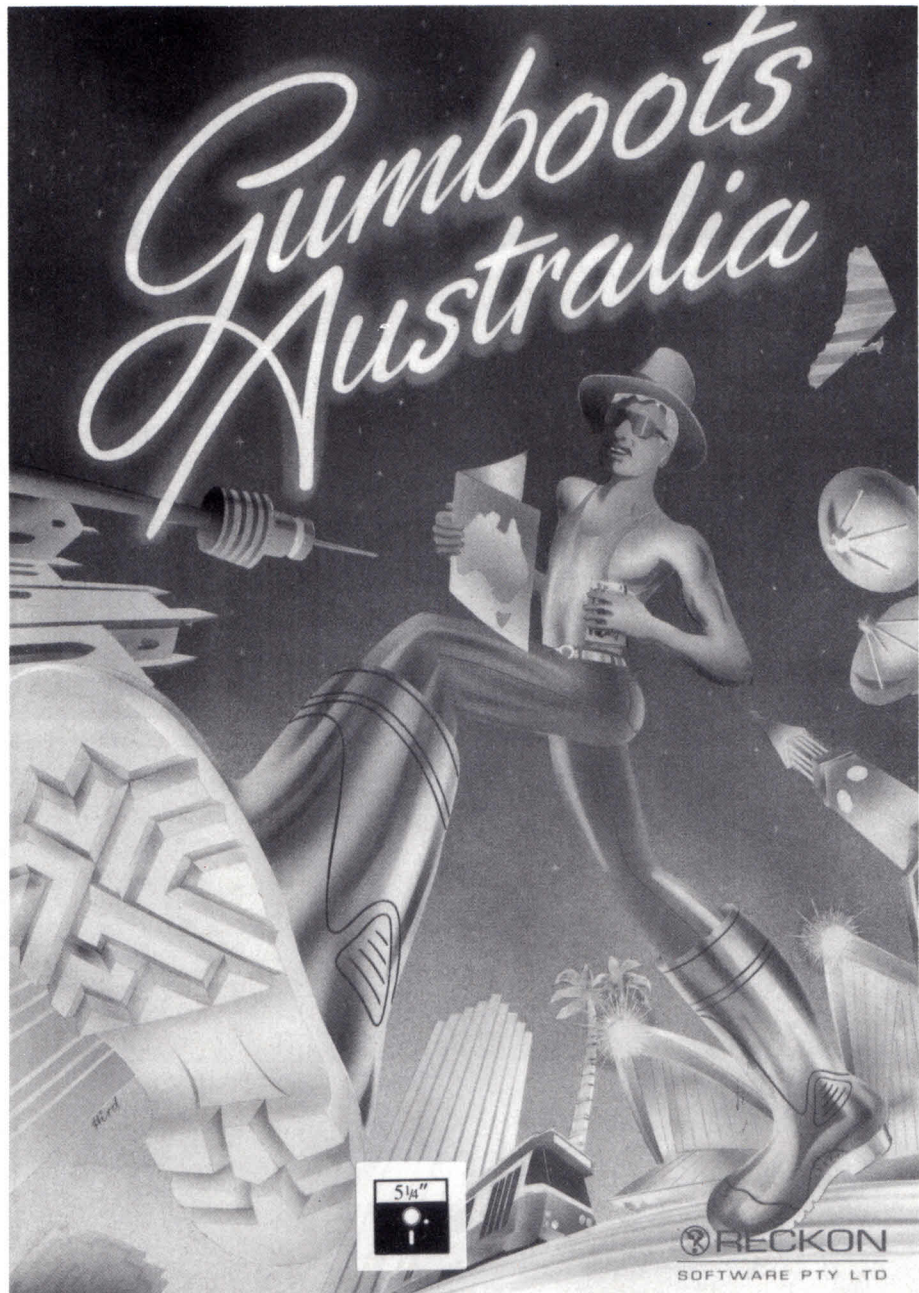
When you select a place to go to, the screen displays interesting information about that place - its position, features and tourist attractions. For example, if Byron Bay is selected the information explains that Byron Bay is the most Easterly point of the Australian mainland, and has amongst its features great surf beaches and a lighthouse.

All of the dialogue boxes are interesting and occasionally entertain with funny comments and a touch of sarcasm. Additional warnings are given when random events are about to occur, some of which threaten danger to your life and some which threaten danger to your financial situation. One example is of the "pathetic, flea-bitten mutt" whose life you chose to save, which in turn earned you a reward of \$26.00 from a grateful old lady.

You have a choice between various methods of travel between towns, and in keeping with realism the time of day will affect prices and the regularity and availability of transport. When you are asked to travel you are asked to select a mode of transport from a window that includes details on the price of each and the time it would take to use it. All of these criteria are important to consider, because not only will you be keeping an eye on your funds, but often you are investigating against a time limit, and it is necessary to choose between an economical price and a convenient amount of travelling

time. Even sleep is compulsory - endurance will only go so far, and the time out isn't unfair when you consider that an investigative mind needs to remain alert at all times.

trating on history, actual history is the one feature in which I found it to be lacking. There are no Captain Cooks or any such popular folk history, so its value rests mostly in the geographical field;



You'll notice that I have used the word 'informative' quite often, which is most probably because that is one aspect of the program that makes it so attractive. It is also fun in the process. Whilst it claims to be a program concen-

fortunately this is of a high standard. On the whole it is likely to be as popular as its international counterpart - The Carmen Sandiego series - and will encourage the happy education of children all over Australia. ■

Managing AddtoDOS



When DOS manager AddtoDOS comes under review, the results fall in favour of the novice user.

When I finished the review of Elkay Software's nice Menu-Lite, I was reasonably impressed - so much so that I immediately started to check out AddtoDOS.

Someone once said that a pessimist is never disappointed in life; I should have heeded that advice. A perfunctory glance at the manual indicated this was similar in philosophy, so I put it aside. A check of the directory showed me seven files with one for installation. This should be easy!

I ran the program and followed the on-screen instructions, which asked for the drive to install on, suggested a sub-directory name for itself, and then requested information on where one's text editor resides. When I let it know that, it proceeded to copy the PCW files to the newly created ATD subdirectory in C: drive.

Then it told me to remove the program diskette, and the computer rebooted. I ESCaped from Menu-Lite and verified that the ATD directory was on-board, that it indeed contained copies of the PCW files - no AddtoDOS ones.

Somewhat bemused, I tried the procedure again. Same result. Now it was time to read the book ... only I could not see that I had done anything wrong.

That afternoon, I gave it away as a bad joke and the next morning, starting fresh, tried it again. This time, it decided to copy seven files from the root directory.

Wait! Had I logged onto the A: drive as the book said? Dunno, I'll try it again. This time, it seemed to go OK, and I patiently (once more) waited for the re-boot.

Into it, I started testing various functions. I found certain things actually handled a bit awkwardly, but this is a program designed for keyboard klutzes. If your typing is skillful, and you're DOS fluent, you don't need it.

So - what exactly is AddtoDOS? The opening screen calls it "A powerful DOS Manager". The manual's introduction simply describes it as the "user-friendly" front end that disc operating systems forgot.

"AddtoDOS" eliminates the need to memorise DOS commands, making it easy to move, locate, retrieve and view files. Files have now become readily available for copying, deleting and executing".

So says the book. Straight away, I noted an inconsistency between this program and Menu-Lite, in the area of cursor movement. A minor detail.

Once (when/if) you get it installed and run it, you find a screen with ten F key selections. In order, they are Help, Cdir, Drv, Dir, Run, Copy, Del, View, Edit, and Other. The latter calls up a window with five miscellaneous functions.

These additional options are Add Directory, Find a file, Hdisk info, Rename a file, and System info.

All these facilities certainly seem useful. I began testing some. Quickly, I learned to adapt myself to the program's philosophy. There's a prompt line at the bottom which advises about cursor movement.

If the style doesn't match the other familiar utilities, bad luck. Just like learning different word processors, software authors like to do things their own way.

Keeping one eye on the bottom line, and moving around the keyboard, I proved that I could indeed check the Help file; change subdirectories; log a new drive; show a directory and even execute a program from within AddtoDOS.

Being used to hot keys on bulletin boards and direct commands in DOS, I felt slowed up by the 'F key, cursor moves, enter, another F key' process to get a simple task accomplished.

Still, to this point, it did what it purported to. I viewed the text file, and tried to view a non-text file (easily done in many other utilities - to find text in a .COM or .EXE file, for example). AddtoDOS wouldn't allow this. The print (hard copy) option here did function on a normal file, however.

Next, I tried to edit a text file. The edit sub-menu scrolled up a line, then returned me to the main menu. Perhaps I'd done something wrong. I tried again. Same result, bozo.

Perhaps there was something about PC-Write it didn't like? I re-

installed, using RPED from DOS. No go. I tried various methods, starting from different sub-directories (grumbling at each re-boot) without success.

My conclusion is that the Edit function does not work - not worth a brass razoo. Maybe this is one of those dread 'incompatibility' lurks that is the bane of the computer field.

A certain PD catalogue remarks on a number of listings that 'this program is not for the Amstrad'. Which Amstrad?

[Question: what's the difference between ignorance and apathy? Answer: I don't know and I don't care!]

There's another option in AddtoDOS, called a DOS window. That means that you can still type in a direct command line, just as though you were not using this program at all. Handy for reviewers, methinks.

I proved that I could still access my word processor or text editor in the normal fashion - thus eliminating an external problem. And concluding the outside application returned me to AddtoDOS. I could even use the F5 key to do the same thing with no problem.

Incidentally, when you select a function, it highlights on the menu bar at the top.

Your selection puts a window in the middle of the screen, in a different colour scheme; the cursor position is highlighted. The appearance on a colour monitor is pleasant, and presumably works well on a monochrome one.

Most times, you must use the ESCape key to return to the main menu. (But not always). A prompt at the bottom of the window tells you this, but I would have preferred it to be more visible. Someone might suggest that it be flashing - well, the authors use a flashing message in the Find A File option. It would drive you up the wall!

To complete the bench tests, I Copied a file; Moved a file; did an Add Directory; used Hdisk Info to check all hard drives and report

its findings; Renamed a file; and inspected the System Info.

AddtoDOS does have lots of useful features. Using them can be annoying. The function window has slots for 15 entries - the cursor movement is singular. In some cases, PgUp performs a Home; it all depends on the size of the filename list.

If there are 17 entries, for example, a PgDn will move the highlight two spaces, scrolling up two positions. Then it is inoperative, (the bottom line changes, to tell you so).

Overall, the inconsistency in program operation is a fatal flaw. In the case of the Help screen, you're not told how to exit. Of course, you use the ESCape key - even though the bottom line still says Press ESC to Quit, just as it normally does.

If you do press ESC from the main menu, you are queried before it dumps you to grey on black.

Unlike some utilities, AddtoDOS does not read the tree structure into memory and manipulate that. Instead, it loves to access the drive at every opportunity. If you want to exercise your hard drive, you can use this program in Cdir (change directory) mode a lot. Or try finding files, as well.

The one function I did NOT try was F7 - Delete a file. I selected this, and noticed two flashing highlights on the list. As one was a 'hidden' system file, I didn't want to muck up the hard disc, possibly - so I took a deep breath and hit ESCape.

Well, the book assures us that the hidden or system file cannot be deleted - and that the flashing is a warning of a dangerous command. This pessimist was taking no chances.

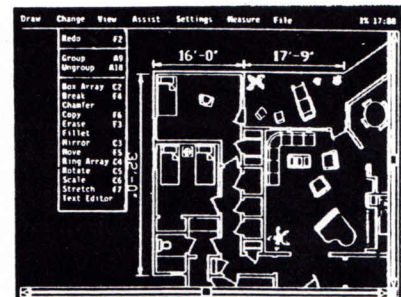
Clint Eastwood said in one movie, "On a scale of ten, I'd have to call her a two...." AddtoDOS isn't that bad. And, probably, a novice DOS user would think it was the greatest thing since sliced bread. This writer has scrubbed it off the Menu-Lite list, however - permanently. ■

INTRODUCING AUTOSKETCH VERSION 3.0

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Christmas Compatibles



Chris Collins gives you a full review of some of the month's highlights on the Shareware/Public Domain scene.

Hello out there, and welcome once again to Compatible's Corner. December is upon us, Christmas is only a couple of weeks away, and this will be the last Compatible's corner for 1990. (BIG SIGH!) This month we have some VGA games for the Series 2000 people, another mention of the Sound Blaster Card for Christmas gifts, a picture viewing program and a collection of tools to compress your executable files.

GRAPHICS WORKSHOP

Let's get things underway now with Graphics Workshop. Graphics Workshop is a menu driven environment designed to make your life easier for dealing with all of the various picture formats that are around. Graphic Workshop allows you to do the following; view a wide variety of picture formats on the screen, save one format to another format, convert colour pictures to dithered grey scale pictures and more besides.

It supports a wide array of picture formats, including MAC (MacPaint), PCX (PC Paintbrush), GEM/IMG (Venture Publisher), GIF, TIFF, EPS (Encapsulated Postscript), WPG (WordPerfect Graphic) MSP (MS Windows Paint), IFF/LBM/CE (all from Deluxe Paint) and BMP (Windows v3 bitmap). Graphic Workshop will allow you to view all of the above, convert between most of them, print any of them to either HP

Laserjets, Postscript laser printers and some dot matrix printers, scale and rotate most of them, and more.

It supports most video systems automatically, including CGA, EGA, VGA, Paradise chipsets, Hercules, Trident chipsets and many more. It will attempt to autodetect the video card that you are using, without you having to tell it which one you have. However, if you wish to specify one of the included SuperVGA drivers, you can do this also.

Registration of the program is US\$35.00, or alternatively they ask you to buy a copy of a book called Coven: A Novel. Send them a photocopy of the cover and you are classified as a registered user. Why? I don't know, but I will be looking for a copy to read.

Graphic Workshop is a good program. It meets all of its stated aims quite well, although there is still a bit of cleaning up to do. Also, a few features have yet to be fully implemented. But, all in all, I think it is better than having a collection of small Shareware utilities to view all of these different picture formats.

LZ-EXE TOOLS

LZ-EXE is a small program from a Frenchman named Frabrice Bellard. What it does is quite simple. It will take your .EXE files and compresses them. What is so unusual about this you ask? PKZIP or LHARC can do exactly

the same thing. (Well, did you ask?) The compressed files will still run exactly as if they had never been compressed. Excellent!

LZ-EXE is currently up to revision 0.91, and has now grown to accept a couple of other tools as well. This diskette, called LZEXE TOOLS, combines LZ-EXE and a small collection of other tools. These tools when combined with LZ-EXE make it so much easier to use.

So what, you say. Most of my files are .COM files. That doesn't matter I say. LZ-EXE has a small program to convert .COM files to .EXE files, so that you may compress them with LZ-EXE.

Also included on the diskette are LZETAG, LZALL, LZESHELL, and UNLZEXE. These utilities have various features, but they all work to make it easier for you to use LZEXE. Oh! Something I forgot to mention. All of LZEXE's prompts are in French, so the above utilities are necessary if you can't speak French. LZETAG shows you all of the EXE files in the current directory automatically, but I couldn't get it to work. LZESHELL is a shell program to run all of the utilities that comprise LZEXE without any operator intervention. If you invoke a COM file, LZESHELL will first call up COMTOEXE to convert the program, and then automatically run LZEXE afterwards. It will also translate all of the prompts into English. UNLZEXE is quite simple

to understand. It takes a compressed EXE file, and converts it back again.

Make sure that you test the results of your compression, BEFORE you delete the original EXE file. Some programs will compress but will not then work. So you must try each program and check them before you delete the original file. I will not be held responsible for any problems.

Some of these utilities are true Public Domain, such as LZEXE itself, and others are Shareware. Please read all of the documentation before you play with these programs. They are dangerous!

VGA GAMES DISKS 1&2

This month we also have two diskettes of VGA games suitable for the 2000 Series and Generation 3 machines. All of these games are Shareware, and I will only give you a very quick run-down on both diskettes. The majority of the games use the 320*200**256 colour mode, so they are really excellent graphically. Onto the first diskette, and we find the following games;

BANANOID:- A simple bat, ball and brick game like breakout.

CLONINIV:- A simple galaxian type game with kill the aliens.

MJVGA:- Another Mahjongg game with totally excellent VGA.

SHOOTG20:- An excellent shooting gallery style game. It includes 7 levels of play, practise, high score tables and much more.

Diskette 2 contains the following games:-

ARMY:- A weird tactical game similar to Art Of War. I couldn't really get into this one.

CATCHEM:- The idea is to catch all of the falling goodies, except for the stoppers.

EATIT20:- In this one, the idea is to eat all of the candy, including the super candy in the corners, before the monsters get you.

HURKLE:- A weird game with robots and humans. They are after us.

ROBOTVGA:- Robots from Hell. Another game where the robots are chasing us. I never get very far on this one before dying.

None of these games, apart from MJVGA and SHOOTG20 are particularly new. They basically take old ideas and add the facilities of VGA graphics. This is not to say that they are bad games, but simply old ideas in new wrappings. However, they are all very well done. I am now working on VGA Games Disk 3, so keep your eyes open.

PCX CLIP ART

A great collection of clip art has come my way. All of it is in PCX format, but that is not a great problem as there are many utilities available to change the files to suit either Venture Publisher, PageMaker, First publisher, WordPerfect or Word et al. This collection of diskettes runs to 29 diskettes of 300 dpi artwork. But I have broken it down to diskettes holding artwork relating to the following categories:-

MEN:- 3 diskettes.

WOMEN:- 2 diskettes.

OFFICE:- 2 diskettes.

SCHOOL:- 2 diskettes.

SYMBOLS:- 2 diskettes.

SEA:- 1 diskette.

OLD:- 5 diskettes.

MIXED:- 6 diskettes.

PEOPLE:- 1 diskette.

XMAS:- 1 diskette.

SPACE/HOLIDAY:- 1 diskette with 2 collections on it.

SPORTS/TRANSPORT:- 1 diskette.

MONSTER:- 1 diskette.

SAMPLE:- 1 diskette.

This Sample diskette and the six Mixed diskettes would be a good start for someone who uses 300 dpi artwork in their documents. The artwork on these diskettes is all PCX format, which most DTP programs support. If yours doesn't, get a copy of Graphics Workshop as well. It will do the conversions for you. Ventura likes PCX, PageMaker prefers program, these are the only three

that I know. Anybody that buys five of the artwork diskettes may specify another one at no extra cost.

SOUND BLASTERS

The response to the Sound Blaster cards has been good. Hopefully, those people who have ordered them will now be having a ball finding out what they can do. If you want to find an excellent game that shows off some of the sound capabilities of the Sound Blaster, get Prince of Persia. Totally excellent sound! At the moment I am looking at a program that will allow you to play Amiga Mod sound files on your Sound Blaster. The sound is very good, and the files appear to take up a lot less space than the normal Sound Blaster VOC files. The program is in German, so it is a bit hard to read on the screen, but it is so easy to use that this doesn't matter. The only two things to do are to run Transkit to set your interrupt and your Base Address, and then run Trak with the name of a MOD file (including extension) on the command line. I have a couple of sample MOD files on the diskette called Trakblaster, and it is available now. I hope to be able to supply some more Amiga Mod files on diskette as they become available.

Don't forget. the Sound Blasters are available for only \$419.00 including CMS chips. Next month we'll have some VOC files available on diskette. Look for these.

Well, that's about all for this year. Please remember that if you want any of the diskettes mentioned this month, or at any other time, simply send a cheque or money order with your PRINTED order to the following;

Macrodisk

Unit 2, 47 Vernon Street
South Kingsville
Vic 30115

Enjoy your Christmas, and I will see you all in the new year with some more new software for you to check out. ■

CLASSIES

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Beginners' Guide to the IBM PC: The book that gives new users a flying start and saves money. \$12 Post to Bruce Collins, 234 Tor Street, Toowoomba, QLD 4350 (Ph 076 344828)

KDS Modem - to suit Amstrad 464 or 6128. Auto answer, auto dial, 300/1200 bps. \$280. Phone Chris (089) 530051.

FOR SALE

Amstrad 6128 Computer - with colour monitor, original software, manuals, plus heaps of games and blank disks. All in as new condition. \$650, ONO. Ph: (02) 8251413, Holsworthy, Sydney.

CPC 6128 with colour monitor, recorder, over 60 orig. software, including W/star & Mini Office & other utilities. \$800 ONO. Ph: (03) 6039401, George.

PCW 8256 Keyboard, Monitor and Printer - Never used. Unwanted gift still in box but warranty missing. \$400. Ph: (02) 750 0128 AH, Lakemba NSW.

PC 1640 HD30 - EGA Monitor, DMP Printer, Supercalc and Wordstar. \$1750. Ph: (03) 543 5842 After 6pm. Wednesdays or Thursdays only.

Amstrad PC1512 IBM Compatible - Printer DMP3160 w/spare ribbons, vertical computer desk, lots of S/ware (games & utility) plus accessories. 13 months old, hardly used, perfect condition. Sell \$1200. Ph: (03) 364 2425 AH.

NOTE: Classifieds are reserved for readers' use only. Commercial companies or traders are excluded.

CONTRIBUTIONS

We accept unsolicited articles or program contributions from readers with a view to possible publication, but in the case of programs we must insist that the coding is submitted on either tape or disc. We just do not have the time to key them all in. The tape or disc will be returned if originally accompanied with a stamped and return addressed padded bag.

DISPLAY ADVERTISING DEADLINES

Issue	Booking by	Copy by
FEB '91	03/12/90	10/12/90
MAR '91	22/01/91	01/02/91
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Classified ads should be phoned or sent directly to The Amstrad User.

USER GROUPS

Sydney Amstrad User Club for CPC only, meets first Saturday of the month in Inner Suburbs. For details phone (02) 560 9487 or (02) 661 7573. 6-9pm.

Amstrad PCW Australia Group - Dedicated to the PCW, meet second Thursday every month, RSL Club Burwood NSW, at 7.30 pm. Contact Clyde Gittins, Pres. (02) 588 3176 or David York, Sec. (02) 604 7171.



Classified Ads Order Form

This section of the magazine offers you the chance to speak directly to the huge waiting world of Amstrad owners - or would-be owners.

You can place an ad of up to 30 words for just \$7.50. So you could use it to sell a printer, launch a user group or publicize a piece of software you have written.

One thing you can't advertise is the sale or swap of software you've purchased. Such ads can be misused by software pirates.

Just fill in the application form and send it to us together with payment. We'll then place the ad in the next available issue (published 3 to 7 weeks after we receive your order.)

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Write your advertisement here, one word per box. If you want your phone number printed, it must be included in one of the boxes.

Amstrad PCs

The following collection of disks contain compilations of public domain programs suitable for Amstrad PCs (and possibly other IBM clones). With the exception of PC-SOFT #1, all items are available on both 5.25" or 3.5" disk format. PC-SOFT #1 requires Basic2 (supplied with Amstrad 1512 or 1640s), whilst all others require MS-DOS version 2.1 or above.

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

PC-SOFT #1

19 Basic2 utilities or games on one 5.25" disk, with:

3DGRID.BAS

Add an extra dimension to your maths formulae. You can enter your own functions or watch the 9 demonstrations plot.

3D-VIEW.BAS

This Basic2 program takes a series of x, y and z co-ordinates and constructs a picture from them. The three dimensional image can then be manipulated for a view at any angle, size and rotation.

ANAGRAM.BAS

Presents a jumbled word from a store of around 600 for you to unscramble as quickly as possible

ANGLES.BAS

This program provides both instruction and testing of the basics of angles. Acute, right, obtuse and reflex angles are drawn and described, then followed by a tests where angles have to be named or where you try to match a given angle by positioning a point with the mouse.

BASIC2.APP

Along with BASIC2.RSC the files provide an upgrade to version 1.23 with three extra commands - Alert, Inkey and Selector. You can use this version only if you have a licence to do so. If you have bought an Amstrad PC1512 or 1640 then you already have the licence, and this copy is supplied on the same terms as the original.

BAS-INIT.BAT

This batch file prepares a single floppy with enough of MS-DOS, GEM and BASIC2 to run the language from one disk.

BRAHMA.BAS

A version of the old favourite 'Towers of Hanoi' in which discs must be transferred from one pole to another without ever placing a disc on top of a smaller one.

BRAHMA2.BAS

The same as BRAHMA.BAS but with a recursive solution and demonstration.

BUSES.BAS

An educational program teaching number recognition and counting to pre-school children.

ENIGMA.BAS

A game which involves moving and interchanging two blocks of shaped tiles, with the object of transposing two blocks from opposite corners of the playing area.

EUROQUIZ.BAS

A graphic, multiple-choice quiz based around the countries of Europe and your knowledge of its major cities.

MANDEL.BAS

Draws extremely attractive multi-coloured Mandelbrot sets of your choice. Be warned - it takes a long time!

MATHS.BAS

This program offers you five types of test, covering addition, multiplication, subtraction and division and a random mixture of all four.

OXO.BAS

The thinking machine's noughts and crosses, and an example of one of the programs which can be found in Peter MacBride's book "Advanced Basic2 programs on the Amstrad PC".

ROBOPOST.BAS

A compulsive, simple yet frustrating sliding tile game with a difference - you have to create a pathway for a robot postman.

STYLISER.BAS

Downloads any of three fonts into an Epson-compatible printer, and they may be used with other programs (including non-GEM ones) to add sparkle to your correspondence.

SUNDIAL.BAS

A program for generating sundials on your PC. It takes into consideration your latitude and then calculates the appropriate hour angles and the 'style height'.

TENPIN.BAS

A ten-pin bowling game in which your PC keeps score and resets the pins after each go.

TURTLE.BAS

Based loosely on 'turtle' drawing found in Logo programs, this program allows you to draw and colour squares, circles, pies and ellipses.

PC-SOFT #2

Eight games on one 5.25" or 3.5" disk with:

3DOXO.EXE

A three dimensional version of Noughts and Crosses played on four planes against your computer. Each plane, one above the other, contains a grid of sixteen squares. To win, you must get four of your counters in a row - vertically, horizontally or diagonally. It's not as easy as it sounds and the computer plays a strong game.

BOUNCY.COM

A giant nuclear-power station that orbits the planet Abraxii has gone terminal. You have been raced to the scene, encased in your Ultra-Ball, to stabilise the reactor by colliding with the uridium cooling rods and driving them home one at a time. Your score 10 points for each rod successfully replaced. The only problem with the Ultra-Ball is that it is unsteerable and always travels in a straight line, horizontally or vertically. What you must do is activate the deflector shields that are built into the reactor so that the ball will bounce off them and hit the cooling rods. Within the reactor are anti-matter death stars which will destroy you on contact and inter-spatial gateways which will take you from one side to the other.

DRAGONFLY.EXE

A full colour action arcade game originally designed for the PC1512, but also works on EGA if you don't mind a messy title screen. The games centres on a tract of water patrolled by a helicopter. Your mission is to blast enemy hydrofoils out of the water before they blast you. The helicopter can be controlled with the numeric keypad (or a nine-pin joystick fitted into the keyboard of a PC1512/1640).

JOIN4.COM

This strategy game is based on the 'board' game Connect4 and involves two players dropping counters alternately onto one of the seven to try and produce a line of four in any direction - but be warned, it plays a mean game! It is self-contained and displays its own instructions. The game can be played against your computer, against another player with the computer keeping score, or the computer can play itself.

MMEXE

This is the infamous Mastermind game of logic but with some additional features. You can play against a clock and have to keep a watchful eye on an ever dropping thermometer style scale on the right of the display. There's also a digital clock to remind you how long you have been playing. There are four levels - Amateur, Average,

Expert or Master and the range of numbers for any sequence can vary from six to ten using any digit between 0 and 9. It also features sound effects and you can alter your guess as many times as you like within a time limit. You get a progress report after every ten moves.

MOLECULE.EXE

A jazzy version of Black Box in which you fire beams into a lattice of squares and determine where the molecules are hidden by analysing the reflections and absorptions. It's a bit like a 3D version of Mastermind but with more information provided.

A ray is absorbed by a direct hit and reflects from any of the corners of a molecule. You mark where you think each molecule is and check your guesses at the end of the game. There is a variable time limit to add tension to the game with sound, level of play and number of molecules also optional. There's also a demonstration mode to show you how it all works.

RACE.COM

Race simulates a six-race meeting at any of four courses. Each race is of a different length and you have to study the form to select the horse most likely to win. You start off with £50 (pretend they are dollars) and can bet up to £99 for a win or place to a maximum of four place bets in any meeting. The race is shown in colour (you must at least have CGA) as the horses come to the last fence, and although form plays a major part, your horse can still fall at the last fence.

REVERSI.COM

A very good version of Othello (for CGA graphics screens) with menu options offering instructions, programming details and a high score table. The object of the game is to have more squares covered with counters of your own colour than your opponent's when the board is full. You must place each counter to trap at least one counter of the opposite colour between your new one and another of yours already on the board. All trapped counters are then flipped over to your colour.

PC-SOFT #3

Twenty-four utilities on one 5.25" or 3.5" disk with:

BEEP.COM

If you compile large Cobol programs or simply want to irritate your neighbours, this is just the utility for you. It produces an attention-seeking alarm and tells you to press 'any key to continue'.

CAL.COM

A perpetual calendar which will display any month from the year 1753 to 3000 - instantly.

CALENDAR.COM

Lets you display and print a calendar for any year between 1900 and 2099.

CGA2.COM

Offers something like a 60% success rate in allowing owners of monochrome monitors to run programs that use CGA graphics in different shades of grey.

CHOICE.COM

A short command file providing a handy way of using multiple-choice menus in your batch files.

CLEANUP.COM

If you use WordStar (not WS1512) or NewWord you may know they do funny things to the last letter in each word making them hard to read or load into another file. Run them through CLEANUP and most of your troubles are over.

CLICK.COM

A simple program to make your PC 'click' every time you press a key on the keyboard.

CLR.COM

Simply clears the screen to a specified colour.

CURSOR.COM

A utility, most useful for PPC owners, which changes the shape of the cursor to a block or turns it off all together.

DELB.BAT

A batch file which deletes all the files in the current directory which don't conform to a series of specified wildcards.

DOSEdit.COM

A very handy routine to keep on your MS-DOS work disc. It takes a lot of the pain out of MS-DOS when you are trying to copy a lot of files or work with hierarchical directories on a hard disc. It lets you edit the command line.

DOSMAP.EXE

This program provides complete information about the contents of your PC's memory - which programs are in there, how much of memory they occupy and what interrupts they have taken over.

DRIVE.COM

Mainly for use in batch files, DRIVE checks whether a specified drive is ready for access.

ETIMER.EXE

Can be used to check or measure the time taken to run another program or an MS-DOS command.

FILEDATA.COM

Reads the system clock of your PC and produces a short text file (with the filename DATE) containing the full date in the form 'Monday 25th December'.

FSORT.BAT

This useful batch file takes two ASCII files, adds the second to the end of the first and sorts the result.

FULLDIR.EXE

This displays the directory tree structure of any drive.

GDEL.EXE

A global deletion program (so be careful!). It deletes all specified files or those with wildcards.

HDFLASH.COM

A useful utility for owners of Hard Disk Cards who can't see when the disk is being accessed. It puts a smiley face in the corner of the screen which is solid when the drive is reading and hollow when it's writing.

KD.COM

A dangerous but useful utility which kills a directory simultaneously removing all files within it.

LOSTFILE.EXE

This searches out files you know are somewhere on your disc.

LYNE.EXE

A great utility which lets you type a short letter or document line by line and saves having to go through a word processor. It sends your text to the printer at the end of each line. It also contains built-in codes for all the normal Epson printer effects.

MEDIT.COM

A neat and fast memory editor which can show you bytes of memory in real time.

NVRSAVE.COM

Enables you to save/store the contents of your NVR area to disk before removing and replacing your batteries. Once the new batteries are in place you can use NVRREST.COM to restore the non-volatile RAM (NVR) area of your Amstrad PC.

PC-SOFT #4

Six games on one 5.25" or 3.5" disk with:

CRIB6.EXE

This is a full version of the popular card game for two players complete with cribbage board and score card. You can use the keyboard or the mouse to play the cards by simply pointing at them. For the uninitiated, each player takes a turn in playing a card to score points as they are laid. When all the cards have been played, they are scored individually and added to each player's accumulating score on the pegboard. The first player to 121 is the winner. There is a cheat mode whereby you can use the reveal option to show you your opponents cards.

GALACTIX.COM

Your crippled spacecraft, the USS Galactix, has crash landed on a planet after colliding with a meteorite. You were trying to get back to Earth at the time and unless you find five specific items to repair your ship, you are doomed. Naturally the planet is hostile being patrolled by robots and guards. You can 'get' objects, 'use', 'drop' or 'examine' them by using icons displayed on the right of the screen. Energy will be lost quickly if you come into contact with the inhabitants. Food and drink will replace lost energy. There are many puzzles and they must be completed in order to complete the game.

JASON.EXE

Trapped on an alien planet and surrounded by mutated plants and animals, you have to guide Jason around numerous obstacles to gather up the heart shaped crystals. Part of the screen gives way

under his feet if he dawdles, so planning is essential. Four lives are provided and you lose one if you touch a flower or a hollow head.

RIMTRIX.COM

A real brain teaser, RIMTRIX involves a series of slideable tiles each bearing a pattern of tracks. Coloured balls are collected from the left of the screen and directed to their relevant coloured cups on the right of the screen by moving the tiles and creating a path for the ball. If the ball falls into an area without a tile, the ball is lost. Tiles can only be moved if in a position to be moved (ie. next to a black space) and can be moved left, right, up or down and even rotated. Keys can be redefined if required, but the game defaults are the arrow keys and the space bar to rotate. You cannot rotate a tile with a ball in it.

SNAKE.COM

There are lots of 'Snake-style' games around, but this one is different. The aim is to gobble up all the yellow apples, which are replaced elsewhere on the screen with red apples. Eat the red apples and they are replaced with poisonous mushrooms which must not be touched or you're dead. They can, however, be destroyed by spitting venom at them. Steering is different in that the snake will always turn left or right in relation to the direction in which it is travelling. There are many levels.

WEASEL.COM

A demonstration of the power of natural selection with a given alphabetical phrase. The program takes a completely random set of letters and with each generation uses a pre-set probability to decide whether a given letter will mutate to a random one. If this is the case, and the new letter is in the target phrase, it is deemed to more closely suit its environment.

PC-SOFT #5

Twenty-three utilities on one 5.25" or 3.5" disk with:

PEEK.COM

If you need to search through a file containing readable sections of text, this small utility will do the job for you.

POINTER.ACC

A GEM accessory which displays the pixel co-ordinates of the pointer. It is called from the application name menu by clicking on the 'Pointer-Pos' option.

POPTIME.EXE

A compact (only 1k) resident clock display program which not only pops up but also pops back on its own accord. It is loaded into RAM by typing POPTIME.

PRCODES.COM

This utility allows you to send any code through the serial or parallel port of your PC to your printer. Most of the codes are escape characters (beginning with the ASCII character 27). Other can be found in your printer manual. The codes are sent in decimal (1 to 255) or, for some, using the relevant keyboard character.

PRMODE.COM

A very friendly printer mode selector allowing you to select special effects on your printer (like bold, italic and underline) outside an application program (eg. when you use COPY filename PRN.). It can be used in a batch file or from the A> prompt.

PRINTC.COM

Another utility for getting codes to your printer which can be sent in hexadecimal or as the ASCII character.

PSTASH.COM

A useful utility for redirecting any output sent to the parallel printer ports to a named disk file.

RENDIR.COM

Here's a utility which enables you to easily rename a sub-directory. It's particularly useful if you have just created a sub-directory and copied a heap of files into it then decide you have the wrong name.

SCRDMP.EXE

This is a memory resident screen dump utility. It saves a text screen to a named file using the [PrtSc] key from your choice of application.

SEE.EXE

A utility for spotting ASCII strings in machine code files and then

display them on the screen.

SET UTILITIES

Five useful utilities to set up an Epson printer from the A> prompt. They can also be included in your AUTOEXEC. BAT file for an automatic set up.

SET10.COM

- sets PICA type with ten characters per inch

SET12.COM

- sets ELITE type with twelve characters per inch

SET12M12.COM

- sets ELITE type and a 12 character margin

SETNORM.COM

- cancels any SET commands and resets the printer

SETPOUND.COM

- sets pound and hash signs so that they print as displayed on the screen.

SGR.COM

A utility for setting particular screen attributes. You can change colours, bold characters, reverse video etc.

SIZE.EXE

A fast utility which counts the number of characters, words, lines and pages of a named text file or files.

TSTDATE.COM

This utility, when incorporated in a batch file, provides a simple 'on date goto' function and a 'day of the week' function, a useful feature for automatic backups.

TIMEFIX.COM

A bug-fix exclusively for PC1512 owners who have problems when their internal clock gets to midnight. Apparently (in some cases) the clock continues to 31.00 instead of changing to 00.00 then hangs the machine.

TIMEPARK.COM

A utility for nervous hard disk users worried about disk head crashes. It 'parks' the heads after a pre-determined period of disk inactivity. They are 'un-parked' the moment an access is necessary.

TV.COM

A text view program with many features to display text files. You can scroll through a file in either direction at a line a time, move back or forwards a page or straight to the start or end of a file. Unreadable symbols in Wordstar files can be converted to alphabetic form. Strings can be searched for with moves to the first or subsequent occurrences. TV also comes with an index facility for up to 16 separate text files accessed through an index screen.

WORDS.COM

A useful word counter which will give you a pretty accurate word count for any ASCII text file.

WYH.EXE

This utility looks at the system parameters and reports on the screen. It shows the number of floppy drives, whether or not a games card or maths co-processor are fitted, the number of parallel and serial ports, the size of RAM available and the number of hard disk drives on board.

NEW

PC-SOFT #6

FORD DRIVING SIMULATOR: version 2

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

PC-SOFT #7

FUNNELS & BUCKETS and WP for KIDS

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

PC-SOFT #8

JUNIOR WORD GAMES

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

PC-SOFT #9

EDUCATIONAL GAMES FOR KIDS - 1

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

HOW TO ORDER YOUR DISCS

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

All software for PCs or compatibles have a reference PC-SOFT followed by a number.

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

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

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

The cost of each disk is as follows:

PC-SOFT 5.25" disks	10.00
PC-SOFT 3.5" disks	12.50
CPC 3" disks	17.50
PCW 3" disks	17.50

(Please add relevant postage as shown on Pages 56 to 64)

THE AMSTRAD USER
641 High Street Road
Mount Waverley, 3149
(03) 803 9661

PCW GRAPHICS (PCW only)

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

CPC and PCW

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

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

CP/M 2.2 COLLECTION

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

FULL SCREEN TEXT EDITOR

This machine code editor offers full screen editing, full block operations, windowing, automatic horizontal scroll (line length up to 255 characters), macro functions, word-wrap and formatting, pagination, find/replace, undelete and many user options. The editor, which is less than 10k in size, is fast because it edits a file entirely in memory. It produces ASCII text files and has enough features to be used as a word processor. A comprehensive on-disc manual is included together with keyboard configuration files for the CPC and PCW. **CPC Ref: #601 PCW Ref: #801**

DATABASE

A small relational database suitable for storing simple data and producing reports and forms letters from the data. Offers free format query language with macros and commands plus on-line help. The disc also contains an Inventory Database. Whilst these databases provide a useful introduction and you can use them to set up a full operational database system they are not meant to replace commercial packages for professional or business use. **CPC Ref: #602 PCW Ref: #802**

COMMUNICATIONS

Programs to allow data transfer between computers (local and remote), access databases and bulletinboards. UKModem7, New Kermit, MEX and various communications utilities. The disc also contains software for Prestel (Viatel) emulation (PCW only). **CPC Ref: #603 PCW Ref: #803**

VIDEO CLERK

Keep track of your video collection. With four Sort options and Forms Management system for printing out the data in order of title number, video number, global alphabetic or unique. Includes extensive on-disc documentation. **CPC Ref: #604 PCW Ref: #804**

FIXED ASSETS LOG

Allows you to keep a record of all your assets and their value. For example, at home, you may wish to keep a record of how much money you are spending on your computer or the value of a stamp collection etc. In business you can use it to keep a record of how much money you have tied up in land, buildings, office equipment, cars etc. It can also be used as a stock-taking program. **CPC Ref: #605 PCW Ref: #805**

COMPLETE UTILITIES

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

Directory check

CPC Ref: #606 PCW Ref: #806

TEXT PROCESSING UTILITIES

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

DISC ORGANISATION

Catalogue your disc collection and produce a printed index. Useful for speedy location of files and for keeping your discs in order. Library utilities for archiving and saving disc space. File dating system. Squeeze and unsqueeze for saving up to 40% disc space. Menu system - allows menu-driven access to programs on a disc. Completely and easily user-definable. **CPC Ref: #608 PCW Ref: #808**

Z80 PROGRAMMER

A complete Z80 Assembler which is capable of converting an ASCII assembler file into a fully executable machine code .COM program. Plus Z80 Disassembler, Z80 Debugger, Z80 Library, 8080 Disassembler, Z80 to 8080 Translator and associated utilities. **CPC Ref: #609 PCW Ref: #809**

'C' PROGRAMMER

The Small 'C' Compiler by Mike Bernson. Includes source code and 25k of documentation. Produces executable .COM programs. **CPC Ref: #610 PCW Ref: #810**

'C' TOOLBOX

A disc full of 'C' source code examples together with the corresponding executable .COM programs. Useful to those wishing to see some practical examples of 'C'. As a bonus, the programs are quite useful too. The 'C' source was written for a variety of compilers and may need modifying to compile on MIX or Small 'C'. **CPC Ref: #611 PCW Ref: #811**

FORTH, STOIC AND 'C' INTERPRETER

For experimenters interested in using these languages. Documentation is included on disc. **CPC Ref: #612 PCW Ref: #812**

GAMES COMPENDIUM

A varied selection of the best machine code programs available for CP/M. Includes Pacman, Snake (PCW only), Chess, Othello, Mastermind, Spellit, Awari, Life, Golf, Polish Pong, Maze, Biorhythms, Word Search puzzle maker, TicTacTo. **CPC Ref: #613 PCW Ref: #813**

ADVENTURES

• *Colossal Cave Adventure* which originated on main frame computers. With game save and re-load • *Bestiary* (written in Mallard Basic for either PCW or 6128 Mallard users. Standard CPC users see *Adventurer's Attic March 1989*) - you play the part of a young prince, your greatest love being to read the ancient bestiaries about strange and often legendary animals. Your task is to find a solution to the terrible blight which, one year, destroys both crops and animals in the kingdom. Includes game save and re-load • *Return from Arg* - a short but interesting new adventure written in 'C'. **CPC Ref: #614 PCW Ref: #814**

THE AMSTRAD USER

Comprehensive catalogue of Entertainment and Business Software, Books, Add-ons and Consumables for all Amstrad computers.

— CPC —
464 - 664 - 6128

CPC GAMES

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Fairlight	49.95	-

Fighter Bomber	44.95	29.95
Fighting Soccer	39.95	29.95
Flippit	29.95	24.95
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Fury, The	-	34.95
Galaxy Force	44.95	29.95
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Gazza's Soccer	39.95	29.95
Gemini Wing	49.95	34.95
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Hot Rod	39.95	29.95
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Impossamole	49.95	39.95
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Klax	39.95	29.95
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By Mail: Send a cheque, money order or quote your credit card number and expiry date (Mastercard, Bankcard or Visa) with your order to the address shown below.

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The Amstrad User,
641 High Street Road,
Mount Waverley, Victoria 3149

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(No Mail Order enquiries at Shop please)

Please Note:

1. Add up the total value of the items you are ordering, then add the postage and packing charge from the table shown at the bottom of each page. Don't forget that some hardware items carry a special freight charge.
2. When ordering by mail, if possible, always quote one or two alternatives. Otherwise call us first to check availability.
3. Most orders can be reserved for up to 7 days pending payment after which they will be released for others to buy.
4. This list is prepared over 4 weeks before publication and reflects the stock holding at that time and anticipated releases advised by producers. The latter are often optimistic.

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Order value over \$50	\$5.50	\$10.00

CPC continued

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with Afterburner, Last Ninja 2, WEC Le Mans and Double Dragon	-	39.95

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Cyberoid 1 and 2, Exolon & Stormlord	49.95	39.95

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with Ghost & Goblins, Bombjack, Turbo Esprit, Paper Boy and Batty	-	39.95

CPC continued

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with Airwolf, Scooby Doo, Battleships, Saboteur 1 and Frank Bruno's Boxing	-	39.95

TAU GAMES + (6128s only)		
Dominoes, Snakes and Ladders, Mah-Jong, 3-D Noughts & Crosses, Trucking, Tycoon plus Graphic Designer and Sprite Designer	-	32.95

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Year Disc 1 - Issues 1 to 12	50.00	-	
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Year Disc 5 - Issues 25 to 28	25.00	-	
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Year Disc 13 - Issues 57 to 60	25.00	-	
Year Disc 14 - Issues 61 to 64	25.00	-	
Year Disc 15 - Issues 65 to 70 (six months)	25.00	-	

Monthly magazine tapes: each - 5.00

CPC SERIOUS SOFTWARE

ADVANCED ART STUDIO (Rainbird)		
Graphics package (128k only)	69.95	-

BRAINSTORM - ideas and reporting system (6128s only)	79.00	-
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CARDBOX - card filing style database (6128s only)	99.00	-
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EXTRA EXTRA - a disc of ready made graphics, fonts and clip art compatible with Stop Press	69.95	-
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MASTERFILE III - the best relational database system (128k only)	129.00	-
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MASTERCALC 128 - spreadsheet program for 6128s (or 464 with disc drive and expansion)	119.00	-
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MINI OFFICE II - a comprehensive value package which includes six different modules enabling you to write letters, prepare reports, create computerised files, compile mailing lists, set up financial records, carry out complicated calculations, draw graphs, print out labels and communicate directly with other computers over the phone	59.00	-
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CPC continued

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PROTEXT - high speed w/p	79.95	-
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PROTEXT FILER - pop-up database for Protext. (Requires Promerge & Protext)	59.95	-
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PROTEXT OFFICE - pop-up add-ons for Protext including mailmerge and invoice generator. (Needs Promerge & Protext)	o/s	-
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PROSPELL - spell checker	69.95	-
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PROMERGE - mail merger	69.95	-
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STOCKMARKET - monitors shares etc.	49.95	-
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STOP PRESS

The ultimate Desktop Publishing package for CPC owners. Combine text and graphics with 'what you see is what you get' facilities. The ideal publishing software solution for home enthusiasts, schools, societies and small businesses. (Stop Press needs 128k)

Stop Press (disc only)	129.00
With AMX MkII Mouse	259.00
Extra Extra clip art	69.95
Mouse only	169.00

Tasword 464	-	59.95
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Tasword 464/D	69.95	-
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Tasword 6128	69.95	-
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Tas-spell	49.00	-
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Tasprint	39.00	39.00
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Tascopy	39.00	39.00
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Tas-sign	69.95	-
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Touch 'n' Go - Typing tutor (6128s only)	59.00	-
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Ultrabase - easy database	69.95	-
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CPC EDUCATIONAL

From SCHOOL SOFTWARE

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Magic Maths (Ages 4-8)	29.95	22.95
Maths Mania (Ages 8-12)	29.95	22.95
Better Maths (Ages 12-16)	29.95	22.95
Maxi Maths (Ages 12-16)	29.95	-
Physics (Ages 12-16)	29.95	22.95
Better Spelling (Ages 9-99)	29.95	-
Chemistry (Ages 12-16)	29.95	22.95
Biology (Ages 12-16)	29.95	22.95
Weather/Climate (Ages 12-16)	29.95	22.95

From Satchel Software (Education Dept. of SA)

For 6128s only		
Abscoded Convicts	50.00	-
African Farming Game	50.00	-
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Disasters	50.00	-
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mail order

CPC continued

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Where's Baby Bear?	50.00	-
Which way Words	40.00	-
Word Hunt	40.00	-
Word Hunt Companions		
Volume 1, 2 or 3 ... each	40.00	-
Word Processing Pack	60.00	-
World Wide	50.00	-

From LCL SOFTWARE

Micro Maths (Grades 9-11)	49.95	-
Mega Maths (Grades 9-11)	49.95	-
Micro English (Grades 9-11)	49.95	-
Primary Maths (Ages 7-11)	69.95	44.95

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2. Fletcher's Castle/Raider(8-12)	49.95	39.95
3. Thorn Sea/Ferry Captain (9-13)	49.95	-

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Vol 1 - ages 2 to 5	29.95	-
Vol 2 - ages 5 to 8	29.95	-
Vol 3 - ages 8 to 12	29.95	-

(All reviewed Issue 48 - Jan '89).

From DATABASE EDUCATIONAL SOFTWARE:

A Fun School 2 series of three discs or tapes each containing 8 educational programs (Rev'd Jul 89).

Fun School 2 - Under 6	34.95	24.95
Fun School 2 - 6 to 8	34.95	24.95
Fun School 2 - Over 8	34.95	24.95

THE MAGIC SWORD - Full colour reading book and complementary child's adventure 39.95 -

THREE BEARS - graphic adventure to improve logic, deduction and reasoning 34.95 -

CPC PERIPHERALS

AMX MOUSE Mk III - with superior ball technology and high resolution movement this updated mouse from Database gives total control and flexibility, and compatibility with Stop Press. Comes with an interface for CPC owners 169.00

CPC CENTRONIX PRINTER CABLE (PL/1)
Suitable for linking a CPC to most printer with centronix ports, eg. DMP2000, 3000, 3160 etc.
(Note: Pin 14 may need removing) 22.95

JOYSTICK SPLITTER
Allows you to use two joysticks at the same time and take advantage of games which have two player options (eg. Gauntlet) 17.50

MOUSE MATS - keeps Mouse clean 19.95

64k MEMORY EXPANSION (464/664)

CPC continued

Converts the 464 into a 6128 (except for the ROMs) and gives 128k of memory. Is supplied with bank switching software in the form of RSXs to use the second 64k RAM as storage for screens, windows, arrays and variables. Allows the use of CP/M Plus as supplied on the 6128. 179.00

256k MEMORY EXPANSION (464/664)
Converts the 464 into a 6128 (except for ROMs) and gives a total memory of 320k. Supplied with bank switching software in the form of RSXs. The 256k can store 16 full 16k screens or four extra banks of 64k. Allows the use of CP/M Plus as supplied on the 6128. 309.00

256k SILICON DISC SYSTEM (464/664)
Provides 256k of RAM disc accessible many times faster than the conventional drive and with a greater disc capacity. It can be logged on as drive B or in a two drive system as drive C. Data can be transferred onto the silicon disc from a normal disc or from RAM, application programs can then work on the data at vastly increased speed. Will accept all normal disc commands such as LOAD, SAVE, CAT etc. 329.00

256k MEMORY EXPANSION (6128) 309.00

256k SILICON DISC SYSTEM (6128) 329.00

JOYSTICKS

CHAMPZON ECP200 - arcade quality joystick with metal shaft, micro-switches, two base fire buttons and two shaft fire buttons and suction cups. 39.95

NEW KONIX NAVIGATOR - hand-held joystick with microswitch precision control, steel shaft. 39.95

STARFIRE - robust Australian designed and built joystick, fully microswitched with 2 base fire buttons 39.95

STARBLAZER - sturdy Australian built joystick with twistable shaft for more comfort. 3 Fire buttons, fully microswitched, guaranteed for 12 months 44.95

STAR CURSOR - very tough, all Australian designed and manufactured joystick with three year guarantee. Fully micro-switched, fire buttons on base and handle. Adjustable 4- or 8-way action. 54.95

WINNER 220 - a really robust joystick with built-in precision control. Fully micro-switched with two fire buttons on the base and two on the stem for fast and furious action 34.95

ZIPSTICK SUPERPRO - 90% British made quality moulded high impact plastic with self-centring actuator & eight-way micro switches. 1.4m of cable. Left and right hand fire buttons, steel shaft. 39.95

ZIPSTICK ELITE - a smaller, specially designed hand-held model with similar specifications to the Superpro, but with just one forward centrally located fire button. Has rubber pads on base for flat surface use. 29.95

CPC MISCELLANEOUS

SCREEN FILTER 29.95

DUST COVERS - Australian made vinyl fabric dust covers in light grey colour for:

464 monitor and keyboard	35.00
6128 monitor and keyboard	35.00
DMP2000/2160/3160 Printer	17.00

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Black Nylon for DMP 2000/3000/3160	19.95
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6128 'SEAL 'N' TYPE' KEYBOARD PROTECTOR
Stops damaging spills etc. 34.95

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PCW continued

PCW

8256 - 8512 - 9512

(The games marked with a \$ symbol are known to work only on the 8256/8512)

PCW GAMES

Bridge Player 2150	69.95
Classic Collection 1 - compilation with Hop-it, Munch-it and Shoot-it	49.95
Classic collection 2 - compilation with Caverns, Skiing and Climb-it	49.95
Complete Home Entertainment Compilation - with Backgammon, Dominoes, Darts, Poker, High-Low, Pontoon and Wordsearch game - great graphics!	49.95
CP Compilation - with 3-D Clock Chess, Backgammon, 3-D Draughts and Bridge 2000 - all on one disc	59.95
Fairlight (graphic arcade adventure)	39.95
Graham Gooch Cricket (Ltd. Overs & Test Match featuring full animation of bowler, batsman and fielders) \$	49.95
Heathrow ATC (Air Traffic Control Simulator) Southern Belle (Steam Train Simulator) - both on same disc	57.95
Knight Orc	59.95
Lancelot	39.95
Scapeghost (Level 9 adventure)	49.95
PUBLIC DOMAIN DISCS (see Page 55)	17.50

PCW YEAR DISC

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Year Disc 1 - Issues 25 to 40 27.50

PCW EDUCATIONAL

Better Maths (12-16 yrs)	29.95
Better Spelling (12-16 yrs)	29.95
Biology (12-16 yrs)	29.95
Chemistry (12-16 yrs)	29.95
Giant Killer - maths adventure 10 to adult	54.95
Magic Maths (4-8 yrs)	29.95
Maths Mania (8-12 yrs)	29.95

PCW PUBLISHING

Desk Top Publisher	59.95
MicroDesign 2 - new superb integrated Page Processor compatible with AMX or Kempston mouse	175.00
Newsdesk International	89.00
Stop Press (program only)	149.00
Stop Press (program + mouse and interface)	299.00

PCW DATABASES

Cardbox Plus	99.00
Condor One	149.00
Masterfile 8000	139.00
TAIT Database and Labeller	29.95

PCW MISCELLANEOUS

BRAINSTORM - tool for structuring raw ideas in a logical manner	79.00
DATSTORE II - menu-driven customised report generator, mailing list and label printer. Can be used with type styler Supertype II.	89.95
FLIPPER 2 Plus - splits your PCW (8256, 8512 or 9512) memory into two environments and lets you flip between them eg. between CP/M and Loco2. Not suitable for LocoScript 1.	99.00

GRAPHICS, THE UNIVERSE AND EVERYTHING...
This latest version (2.0) provides the means to create professional graphics output and more. Source code included (All PCWs) 85.00

LIGHTNING BASIC PLUS - turbo charge your Mallard Basic (All PCWs) 85.00

PCW continued

MASTER PAINT - deluxe graphics program, for use with either mouse or keys (not for 9512)	49.95
MINI OFFICE PROFESSIONAL - the PCW version of the highly successful Mini Office II with Spreadsheet, Wordprocessor, database, graphics and communications	149.00
MONEY MANAGER PLUS - cashbook/personal accounting	99.00
NEWWORD2 - PCW WordStar equivalent	100.00
PCW TOOLKIT - allows you to examine and alter data on any PCW disc as well as copy part or all of a damaged or corrupted disc for repair. Full instructions provided.	79.95
PRINT MASTER PLUS - create your own Banners, Letterheads, Signs, Calendars or Greeting Cards with graphics or borders supplied. (Runs under CPM Plus only)	59.95
PROTEXT FILER - pop-up database for Protex	59.95
PROTEXT OFFICE - as Protex Filer but with mail-merge and invoice generator module	79.95
PROTEXT PCW	149.00
PROSPELL PCW - spellchecker for most word processors incl. WordStar and LocoScript	79.95
SCRATCHPAD PLUS spreadsheet	99.00
STARTRACK - tracks you through 88 constellations and more than 600 stars	54.95
SYSTEM 3 - an integrated accounting system with Stock Control, Invoicing, and Cashflow controller	129.00
SUPERTYPE II - 8 new different types for use with all CPM, LocoScript 1/2, LocoMail and Mini Office Professional files	39.95
TAIT ACCOUNTING SYSTEM - small business Debtors, Creditors and Invoicing	99.00
TEMPDISC - a disc full of instant templates exploiting LocoScript to the full. Provides a wide range of heading styles, agendas, invoices, borders and documents:	
Tempdisc 1 (needs Loco1)	59.95
Tempdisc 2 (needs Loco2)	59.95
Tempdisc 8.2 (needs Loco2, Locomail and 8512)	67.95
Tempdisc 9 (for 9512)	67.95
TOUCH 'n' GO - typing tutor	69.00
WORDDISC - a disc full of approximately 35000 synonyms divided among 5930 main words. Used with LocoFile on B drive of 8512 or A drive of 9512	49.95

PCW PERIPHERALS

8256/512 'Seal 'n' Type' KEYBOARD PROTECTOR Stops damaging spills etc.	34.95
9512 'Seal 'n' Type' KEYBOARD PROTECTOR Stops damaging spills etc.	34.95
CPS8256 SERIAL INTERFACE for PCWs for communications or adding extra printers	165.00
AMX MOUSE plus interface - the most popular and sought after peripherals for your PCW, especially with Stop Press	199.00
KEMPSTON MOUSE plus interface - new style two-button mouse supplied with Jeeves (memory resident desktop accessories) and Daatafax personal organiser program. Mouse can be used with Stop Press, Desktop Publisher or the new MicroDesign 2 package.	199.00
PCW JOYSTICK INTERFACE from Kempston	49.95
PROSCAN - hand-held scanner with software	499.00
SCANNER - Master Pack - a scanning device which attaches to a PCW printer head to copy photos or other art work, Master Scan software and MasterPaint, a powerful graphics package. Compatible with Desktop Publisher, FSE and Newsdesk International (8256 and 8512s only)	279.00
SCA RAMPAC 512k EXPANSION UNIT - simply plugs into the expansion port of any PCW. Adds an extra 512k to the 'M' drive allowing LocoScript2, Locomail, Locospell and more to be loaded at the same time. Through-connector allows other peripherals (eg. a mouse interface or serial/parallel interface) to be used at the same time.	329.00
SCREEN FILTER	29.95

PCW DUST COVERS

Australian made vinyl fabric dust covers complete for the following PCWs:

PCW continued

8256/8512 monitor, keyboard and printer	55.00
9512 monitor, keyboard and printer	60.00

PCW TASMAN RANGE

Tasword 8000	69.95
Tas-spell 8000	49.00
Tasprint 8000	39.00
Tas-sign 8000	69.95

PCW CONSUMABLES

PCW 8000s PRINTER RIBBONS	
Black Carbon/Multistrike or Nylon	19.95
Coloured Nylon - Blue, Red or Green	24.95

PCW 9000s PRINTER RIBBONS	
Black Carbon/Multistrike	15.95
Black Nylon	19.95

DAISY WHEELS FOR 9000s	
Prestige Pica 10; Prestige Elite 12; Courier 10;	
Cubic Pica 10; Mini Gothic 15/Micro; Orator 90%/10;	
Letter Gothic 10/12; Script 12	19.95

3" DISC DRIVE CLEANING KIT	19.95
CF2 3" DISCS	each 7.25

PCW LOCOMOTIVE PRODUCTS

LOCOSCRIPT 2 (latest) with manual	97.00
LOCOSCRIPT2 (latest) Disk only	59.95
LOCOSCRIPT 2 + LOCOSPELL2 pack	155.00
LOCOMAIL2	115.00
LOCOLINK - cable and software to transfer Locoscript files from a PCW to a PC Locoscript environment	79.95
LOCOSPELL2	85.00

The following are for PCW 8000s using LocoScript 2.12 and above (Please state 8000s):

24 PIN PRINTER DRIVER - suitable for most 24 pin printhead printers attached to 8000s	74.95
--	-------

PRINTER CHARACTER SET DISC for defining new character sets	69.95
EXTRA PRINTER DRIVERS DISC containing a Printer File for every LocoScript2 compatible printer	69.95

KEYBOARDS DISC to configure LocoScript2 to use American, Canadian, Danish, English, French, German, Italian, Norwegian, Spanish or Swedish keyboard layouts with any nationality of LocoScript2.
 69.95 |

LOCOFILE/8000 - the resident 'pop-up' database for LocoScript2	125.00
LOCOFILE/LOCOMAIL 8000 - the 'pop-up' database with mailmerging program in one pack	205.00
LOCOFONT SET 1 nine extra fonts for your printer	85.00
LOCOFONT SET 2 further five fonts for your printer	75.00
LOCOKEY to customise your keyboard	69.95
LOCOMAIL SORTING PROGRAM	39.95
LOCOMAIL2 EXAMPLES DISC	17.50
LOCOMAIL2 NEW USER GUIDE	64.95

The following are for PCW 9512s (Please state 9512 when ordering):

24 PIN PRINTER DRIVER - suitable for most 24 pin printhead printers attached to the 9512	74.95
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PRINTWHEELS DISC allows the correct printing of the characters from any printwheel supplied for the built-in printer.
 69.95 |

LOCOFILE/9000 - the resident 'pop-up' database for LocoScript2 on the 9512	125.00
LOCOFONT 24 - Text Set for 24-pin printers	74.95

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	Australia	Overseas
Order value under \$20	\$1.00	\$2.50
Order value from \$20 to \$50	\$3.50	\$6.00
Order value over \$50	\$5.50	\$10.00

PCW continued

KEYBOARDS DISC to configure LocoScript2 to use American, Canadian, Danish, English, French, German, Italian, Norwegian, Spanish or Swedish keyboard layouts with any nationality of LocoScript2.	69.95
PRINTER DRIVER AND CHARACTER SETS supports a wide range of printers and printwheels used as an alternative to the built-in printer	69.95
LOCOMAIL SORTING PROGRAM	39.95
LOCOMAIL2 EXAMPLES DISC	17.50

PC

PC20 - PC1/2/3000 series PC1512/1640 - PPCs and compatibles

Items marked with a "†" symbol are also available in 3.5" disc format
Items marked with a "¶" symbol are supplied with both 5.25" and 3.5" discs.
Items marked with a "Δ" symbol are not suitable for a PC20.

COMPILATION GAMES PACKS

Adventure 12 Series: 12 adventures + hint book	59.95
All Time Classic Classics: with Serve & Volley, TKO, Steel Thunder and Rack 'em †	69.96
All Time Favourites from Accolade: with Hardball, Test Drive, Apollo 18 and Mini-Putt (Obstacle Putting) †	59.95
Arcade Bonanza Pack 1 - 18 games †	29.95
Arcade Bonanza Pack 2 - 19 games †	29.95
Cinemaware Bundle: with SDI, King of Chicago, and Defender of the Crown	59.95
Classic Arcades 2: with Pengo, Arnold & Grand Prix	59.95
Cosmi Top 10: with Super Huey, Def Con 5, Nav Com 6, Doodle, Corporate Raider, Inside Trader, Munch, R-R-Ribit, Sanction, and Invaders †	49.95
Epyx on PC Vol 1: with Winter Games, Pitstop 2 and Summer Games 2	49.95
Epyx on PC Vol 2: with World Games, Street Sports Basketball and Impossible Mission 2	49.95
Future Classics: with Tank battle, Discman, Diet Riot, Blockalanche and Lost 'n Maze #	59.95
Marvel Madness: with The Uncanny X-Men, Punisher and Dr. Doom's Revenge	89.95
Leisure Suit Larry Triple Pack: with LL 1, 2 and 3	99.95
Thrill of Winning 1: with John Madden Football, Zany Golf, Budokan, and Ferrari Formula One	64.95
Thrill of Winning 2: with 688 Attack Sub, Powerdrome, World Tour Golf and Populous #	64.95
Ultima Trilogy: with Ultima 1, 2 and 3 + hint book	69.95
Wide World of Sports: with California Games, Winter edition Games, and Summer edition Games	49.95
Zork Trilogy: with Zork 1, 2 and 3 #	69.95

PC & COMPATIBLES GAMES

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688 Sub Attack #	49.95
A-10 Tank Killer (flight sim.) Δ	69.95
Abrams Battle Tank	49.95
ACE 2	33.50
Action Service	54.95
AD&D series - Champions of Krynn †	49.95
AD&D series - Curse of the Azure Bonds #	49.95
AD&D series - Dragons of Flame #	59.95
AD&D series - Dungeon Master's Assistant Vol 1	49.95
AD&D series - Dungeon Master's Assistant Vol 2	49.95
AD&D series - Heroes of the Lance #	49.95
AD&D series - Hillsfar #	59.95
AD&D series - Pools of Radiance #	49.95
AD&D series - Secret of the Silver Blades #	49.95

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AD&D series - War of the Lance #	49.95
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Airborne Ranger †	59.95
Ancient Art of War #	79.95
Ancient Art of War at Sea #	79.95
Aif	39.95
Alien Syndrome	59.95
All Point Bulletin	59.95
Amazon	32.95
Annals of Rome #	64.95
Armada	49.95
ATF 2 †	69.96
Attack Chopper †	69.95
Austerlitz (War Game) #	69.95
Auto Duel	59.95
Backgammon	24.95
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Bad Blood (640k required)	59.95
Balance of Power 1990 † Δ	69.95
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Bard's Tale Vol 2	49.95
Bar Games †	59.95
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Battle Chess (needs 640k) # Δ	61.95
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Zork Trilogy (Zork 1, 2 and 3) #	69.95
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Arcade Bonanza: <i>Frog, Pac-em, Tank & Red Alert</i> †	15.95
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Spell Castle	19.95
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Delta Drawing	52.95
Dinosaur Days (6-12yr) - graphic writing program	59.95
Dinosaur Discovery #	49.95
Fraction Action	69.95
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6 to 8	49.95
Over 8	49.95
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<i>Joshua's Reading Machine: for ages 4 to 7 with parent participation - also includes three adventures in Joshua's Tinker Tales</i>	79.95
Katie's Farm (Ages 2 - 6) #	69.95
<i>Kid's Collection: three educational games - Babinours, Memorise, and Associated</i>	59.95
<i>Kid's Time: for 3 to 8 year olds with Dot-to-Dot, Kid's Notes (music), AB Key (letter recognition)</i>	69.95
<i>Lex, Wizard of Words (Ages 10 to 99) #</i>	39.95
<i>Magic Maths (4-12 yr) CGA</i>	39.95
<i>Math Blaster Plus (6-12 yr) - 750 math problems</i>	69.95
<i>Maths Mania (8-12 yr) CGA</i>	39.95
<i>Manhole, The (6 x 5.25" disks) primary level</i>	89.95
<i>Maxi Maths (12-16 yrs)</i>	39.95
McGee (Ages 2 - 6) #	69.95
<i>Micro Maths - advanced for Years 9-11 students</i>	59.95
<i>Mixed up Mother Goose #</i>	49.95
<i>Number Fun 1 (5 to 15 yrs) #</i>	39.95
ONCE UPON A TIME SERIES: for children (6 - 12) to write, edit and print their own book.	
Volume 1	79.95
Volume 2	79.95
<i>Physics (12-16 yrs)</i>	39.95
<i>PC Globe 3.0 - more than a computerised atlas †</i>	125.00
<i>Playroom, The # (Pre-school to Year 2: teaches letters, numbers and time: comes with soft toy mouse) #</i>	79.95
<i>Puzzle Story Book #</i>	49.95
<i>Race Car 'rithmetic</i>	69.95
<i>Reading and Me - suitable for ages 4 to 7 containing three modules: Letters and Phonics, Words and Sentences, and Reading Readiness</i>	59.95
<i>Rhyming Note Book #</i>	49.95
Sesame Street series - covers problem solving, predicting, logic & reasoning	
Ernie's Big Splash (4-6 yrs)	39.95
Astro Grover (3-6 yrs)	39.95
Grover's Animal Ad (4-6 yrs)	39.95
Big Bird's Delivery (3-6 yrs)	39.95
Ernie's Magic Shapes (4-6 yrs)	39.95
Pals around Town (4-6 yrs)	39.95
<i>Science & Engineering - examples</i>	49.95
<i>Spelling Fun 1 (5 to 15 yrs) #</i>	39.95
Stepping Stones Series	
Level 1 - ages 2 to 4 - letters, number & words †	69.95
Level 2 - ages 5 to 7 - words, maths & sentences †	69.95
<i>Study Mate - grade booster †</i>	84.95
<i>Ten Little Robots</i>	49.95
<i>Typing Tutor 4 #</i>	62.95
<i>World Atlas - 240 EGA/VGA maps with printing #</i>	89.95
<i>Word Fun 1 (5 to 15 yrs) #</i>	39.95
<i>Where in Europe is Carmen Sandiego †</i>	84.95
<i>Where in Time is Carmen Sandiego †</i>	84.95

PC continued

Where in the World is Carmen Sandiego †	84.95
Where in USA is Carmen Sandiego †	89.95
PC BUSINESS	
Ability Plus †	299.00
Upgrade to Ability Plus for existing Ability users (Original disks and manual required for proof)	224.00
Ability †	149.00
AutoSketch (CAD system) †	249.00
Bankmate - manages personal finances and reconciles your bank account. Includes pop-up calculator. #	59.95
Bookkeeping (to Trial Balance)	199.00
Brainstorm †	99.00
Business Dynamics - primer	39.95
Capital Budgeting †	199.00
Cardbox Plus Standard †	895.00
Chart Analyst: Interact. graphs/analysis/time series	234.00
Chartman - business graphics	99.00
Condor 1 Jnr †	149.00
Contactmate - productivity package which controls personal & business contacts #	69.95
Corporate Finance †	199.00
Desktop Accountant †	399.00
DGCalc - 512 rows x 52 column spreadsheet performing essential functions and more	89.95
Dream House Professional - floorplan drawing †	129.95
Financial Accounting for non-Accountants †	199.00
Freelance - free-form database #	79.95
Harvard Graphics #	420.00
Harvard Project Management #	590.00
Home Accounts - 60 expenditure categories and 10 income accounts with budgeting & bank/cash reconciliation †	89.95
Home Office Plus - word processor, database, desktop publisher, drawing, diary, mailing list, rolbase and dictionary all in one package †	129.00
Home Office Publisher - complete desktop publishing with WYSIWYG display † (requires dual drives)	129.00
In-house accountant †	299.00
LocoScript PC - integrated WP, Mail merge, Database, Spell Checker	429.00
Masterfile PC version 3 standard - the most popular database for Amstrad PCs & compatibles #	199.00
Masterfile PC version 3 full - the standard version with an integrated word processing module included #	269.00
Mini Office Personal - integrated database, wordprocessor, Spreadsheet and label printer	99.95
Money Manager PC - cash book including graphics	79.00
Moneymate - a well organised personal finance management package handling up to 10 bank accounts and 25 credit cards, 200 income/expense categories, budgeting, cash flow etc. (can use mouse) #	119.00
My Accountant - personal and small business record keeper with up to 100 user defined accounts †	39.95
Oxstat: Spreadsheet/Statistics built-in formulae v.2	234.00
Oxstat: Spreadsheet/Statistics built-in formulae v.5	350.00
Paperbase: Bibliography & Manuscript preparation	215.00
Personal Cardbox Plus †	349.00
PFS: Easy Start - WP, Spreadsheet & File manager	99.00
PFS: First Choice #	120.00
PFS: First Graphics #	129.00
PFS: First Publisher #	129.00
PFS: Preface #	110.00
Professional File #	290.00
Professional Plan #	165.00
Professional Write 2.2 + 77,000 word dictionary, 20,000 word thesaurus and grammar checker	210.00
Protex PC #	169.00

PC continued

Protex Filer PC #	59.95
Protex Office #	79.95
RAM JET EXECUTIVE - gives PC1512 only a disc cache, print buffer, screen accelerator	69.00
Scratchpad Plus †	99.00
Sage Series (fully supported in Australia) †	
Bookkeeper	299.00
Accountant	449.00
Accountant (network version)	900.00
Accountant Plus	749.00
Payroll (up to 999 employees)	599.00
Sales Force Management †	199.00
Stockmarket - watch your shares	79.95
Swiftcalc - Spreadsheet + sideways printing †	69.95
System 3 - Invoicing, stock control and cashflow †	129.00
Tait Accounting - small business accounting with Debtors, Creditors and Invoicing	129.00
TBM (formerly ABC Business Pack) - an Australian supported integrated accounting and stock control package with many extras	499.00
TRIO - Word Processor, Database and Spreadsheet	99.95
Top Copy - word processing with spell checker and mail merge	69.00
Twin Advanced - integrated spreadsheet (like Lotus), graphics and database	159.00

PC UTILITIES

3-D GAME MAKER	49.95
AWARD WARE - certificates, banners, cards	49.95
BACK-UP PRO #	89.95
BANK STREET WRITER PLUS - famous Word Processor including 60,000 spell checker & Thesaurus #	124.95
BANNER MANIA # (for colour printers too)	69.95
BECKER Tools for Windows (incl 3)	139.00
CERTIFICATE MAKER - over 200 to choose from	49.95
CREDIT CARD ACCOUNTING SYSTEM	29.95
CROSSWORD MANIA †	34.95
DELUXE PAINT ANIMATION - for superb animation on VGA screens with 256 colours (640k and above only) #	169.95
DISCO HARD DISK MENU SYSTEM - creates personalised menus, runs common DOS commands with one keypress.	99.00
DOS-RX - disk management utilities and tools	64.95
EASYSIGN: Prep. of teaching & camera ready text	50.00
EXPERT SERIES:	
Disc Tools	39.95
Filer	39.95
Money Power	39.95
PC Protection	39.95
Perfect Typing	39.95
Personal Finance	39.95
Personal Forms	39.95
Personal Publisher	39.95
Personal Skills	39.95
Writer	39.95
FILE RESCUE PLUS	69.95
GO! SERIES (all contain Computer ToolBox utility)	
GO! START - four function calculator, letter writer and typewriter, computer toolbox, address filer, notepad, maze game, print function for printing envelopes and address lists	29.95
GO! WRITE - prompts for business letters, memos, reports, invitations, calendars, banners and address forms	29.95
GO! FILE - fully functional database, just fill in the blanks in ready made file forms	29.95
GO! PLAN - fully functional spreadsheet, just fill in the ready made forms for planning retirement, savings, car expense, loans, etc.	29.95
HOME ORGANISER - with Inventory, Shopping list, Librarian and Planner †	15.95
IANKEY TYPING TUTOR - crash course #	59.95
IANKEY TYPING TUTOR - for 2 finger typists #	59.95
LOTTERY WHEEL †	34.95
LOTTERY TREND - analysis †	34.95
MAIL SHOT PLUS - with graphical layout	99.00

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	Australia	Overseas
Order value under \$20	\$1.00	\$2.50
Order value from \$20 to \$50	\$3.50	\$6.00
Order value over \$50	\$5.50	\$10.00

PC continued

MASTERING YOUR PC - a DOS & Typing tutorial 39.95
NEWSROOM, THE - design and print newsletters 49.95
PAINT SHOP - graphics with label feature † 39.95
PERSONAL BANKING RECONCILER 29.95
PERSONAL POSSESSIONS INVENTORY 29.95
PERSONAL WEDDING PLANNER † 69.95
PIC TRIVIA † 34.95
PRINT MAGIC † 49.95
PRINT SHOP (NEW) - over one million copies sold of this eas to use personal graphics package. 8 type styles, 9 borders, dozens of pictures to create personal cards etc. # 99.95

ADD-ONS FOR NEW PRINTSHOP

Sampler disk - graphics covering holidays, birthdays, School, Sports and more † 59.95
 Party disk - graphics for Weddings, Welcome Home, BBQs, Parties, Valentine's Day etc. plus borders † 59.95
 School & Business Edtn - over 100 eye-catching pictures for the office or student environment † 59.95

ADD-ONS FOR OLD PRINTSHOP

PrintShop Companion - adds a calendar to old Print Shop (monthly and weekly formats) plus facility to edit existing old Print Shop graphics † 89.95
 Disk 2 - symbols for hobbies, occupations, travel, music and health † 59.95
 Holiday Edtn - 70 graphics for Christmas, Hanukkah, New Year, 10 new typefaces, 14 borders & 12 full panel designs † 59.95

UPGRADE FROM OLD TO NEW PRINTSHOP †

PRINT POWER - multi fonts & borders 69.95

PUBLISH-IT - a fully integrated, full featured desktop publisher with page layout, word processing, typesetting and graphics all in one package. Accepts imports from Word, WordPerfect, Lotus 1-2-3 graphic files. Over 1200 possible typestyle to choose from. # 299.95

PUBLISH-IT LITE - a simpler version of Publish-It having all the main features for those wanting to do straightforward publishing for practical purposes. (3.5" swap facility) 99.95

PUBLISH-IT PORTFOLIOS

People, Places and Things (over 250 pics) # 59.95
Symbols and Slogans (over 450 pics) # 59.95
Educational Graphics (over 200 pics) # 59.95
Design Ideas (over 85 layouts) # 59.95
QUESTION MARK: Surveys, Examinations & Tests 370.00
QUESTION MARK: Graphics add-on 200.00
QUESTION MARK: Foreign Language add-on 75.00
SIGNWRITER: Adv. version of Easysign + graphics 215.00
SPLASH - a VGA paint program with over 256000 colours which makes full use of the incredible high quality VGA graphics. 60 pattern and brush sizes, flip, stretch, fill, zoom, merge. Compatible with most DTP programs # 199.00

SRINGBOARD PUBLISHER - a desk top publishing program with full featured word processor and high quality graphics program all running under MicroSoft Windows † 249.95

Tasword PC - word processor † 99.00
Tas-spell PC - spell checker † 95.00
Tas-print PC - style writer † 95.00
Tas-sign PC - sign maker † 95.00
Tascopy PC - graphics editor † 95.00
Word Writer PC - v3 - word processor, 100,000 word spell checker, Thesaurus and 'auto' footnotes 79.95

WORKS OF ART - Clip Art to be used with Springboard

Publisher and most other DTP packages.
 Educational Series - over 500 images 79.95
 Holiday Series - as above 79.95
 Laser Art Business - 125 professionally drawn pics 79.95

PC PUBLIC DOMAIN/SHAREWARE

	5.25"	3.5"
PC-SOFT #1 - 19 Basic2 utilities and games-	10.00	-
PC-SOFT #2 - 8 games for all Amstrad PCs -	10.00	12.50
PC-SOFT #3 - 24 utilities for all Amstrad PCs -	10.00	12.50
PC-SOFT #4 - 6 games for all Amstrad PCs -	10.00	12.50
PC-SOFT #5 - 23 utilities for all Amstrad PCs -	10.00	12.50
PC-SOFT #6 - Ford Driving Simulator v.2 -	10.00	12.50
PC-SOFT #7 - WP for Kids/Funnels & Buckets	10.00	12.50

PC continued

PC-SOFT #8 - Junior Word Games 10.00 12.50
PC-SOFT #9 - Education Games for Kids: 1 10.00 12.50

PC JOYSTICKS

ANKO PRECISION JOYSTICK: top of the range - with free floating or auto centring operation modes, dual axis trim controls for accurate control of cursor/aiming/movement, two fire buttons on base and one on stem and rubber feet for surface grip 49.95

ANKO STANDARD JOYSTICK: mid-range priced joystick with fire button on base and one on the stem, dual axis trim controls for accurate movement, and rubber feet for surface grip 39.95

JUNBO JOYSTICK: the smallest in the range but just as accurate, with auto return centring and fine tuning to adjust movement control, long life variable resistor control, two fire buttons, suitable for hand held control 29.95

KONIX SPEED KING - hand-held (in the left hand) for a natural grip and total control. Microswitched twin fire buttons positioned under trigger fingers. Free or self centring solid steel shaft. Autofire feature. 49.95

Please note that with the exception of the Amstrad PC20 all other Amstrad PCs require a joystick card to be fitted

MISCELLANEOUS

DISKS
 Verbatim "Valulife" 3.5" (packs of five) per pack... 17.50
 KAO "Amstrad User" 5.25" (packs of ten) per pack... 22.50
 KAO "Amstrad User" 5.25" (packs of two) per pack... 4.50

DISK DRIVE HEAD CLEANERS
 3.5" for PPC, PC20 or PC2000s 17.95
 5.25" for PC1512/1640 17.95

IBM PARALLEL PRINTER CABLE 29.95
JOYSTICK GAMES CARD: Easily fitted - allows the use of an IBM style joystick on your Amstrad PC. 49.95
PC1512/1640 'SEAL N' TYPE KEYBOARD PROTECTOR 34.95
 Stops damaging spills and dust
MODEM - Amstrad's MC2400 (V21, V22, V22 bis and V23 2400 bps). Works with any IBM compatible and comes with communications software. 399.00

SCANNERS

GS4500 Geniscan includes 400 dpi scanner and controller, Scanedit 2 software, Prodigy OCR software and Dr. Genius software. Features auto merge function for large size images and direct scanning (not suitable for 512k computers)

NEW LOW PRICE >>> 399.00

MOUSE(S)

GENIUS GM-F303 Serial Mouse - comes with mouse holder, mouse pad, CasCAD, Dr Genius and Menu Maker software and PS/2 cable 149.95
GENIUS GM-F302 Serial mouse (same as F303 but not provided with CasCAD software or cable) 129.95
GENIUS GM6X Serial mouse with Dr Halo software 79.95
QTRONIX X-30MD Serial mouse with Dr Halo Plus software, mouse pad, mouse holder and cabling as requested 119.95
QTRONIX MBC-30 BUS CARD to accept the X-30MD and leave the serial port free 46.95

Please note: while the above mouse(s) are designed for use on XT's, AT's and PS/2's, they will not work on the following Amstrad XT's: the PC1512, 1640 and PC2086. They can be used on the Amstrad AT's, namely the PC2286 and 2386.

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Order value from \$20 to \$50	\$3.50	\$6.00
Order value over \$50	\$5.50	\$10.00

PC continued

DUST COVERS

Australian made vinyl fabric dust covers in light grey for the following equipment: (please state your printer)
PC1512 or PC1640 monitor and keyboard 36.00
PC20 system/keyboard 18.00
PC2086 monitor/system and keyboard 39.00
PC2286/2386 mon/system and keyboard 39.00
DMP3160 or LQ3500 17.00
DMP4000 or LQ5000 30.00
Star NX-1000, NX 24-10, NB 24-10 17.00
Star NX15, NB 24-15 30.00
Epson LQ500, LX-800 17.00

PRINTER RIBBONS

Epson: MX/FX/RX 100, 100+, 105, 105+ 10.95
 Epson: LX80, 86, 90 8.95
 Epson: LQ500, 800, 850 15.95
 Epson: FX800, LX800, 850 10.95
 Star: NX1000, LC10 10.95
 Star: LC24/10, NX 24/10 15.95

DISK DRIVES/CARDS

FOR PC1512 or PC1640
 (The PHDs also suit PC2086s without hard disks)
 20mb Portable Hard Drive on a card * 849.00
 30mb Portable Hard Drive on a card * 929.00
 20mb Internal Hard Disc * 725.00
 30mb Internal Hard Disc * 789.00
 * Add \$15 for certified post and insurance (\$25 overseas)
 720k 3.5" int. disc drive ** 289.00
 720k 3.5" Ext. disc drive ** 385.00
 360k 5.25" Disc drive kit ** 375.00

FOR PC20 and PC2086
 360k 5.25" External disc drive ** 339.00
 720k 3.5" External disc drive ** 339.00

FOR PC2286 and 2386
 1.2 mb 5.25" External disc drive ** 395.00
 1.44mb 3.5" External disc drive ** 395.00
 ** Add \$10 for certified post and insurance (\$20 overseas)

MATH CO-PROCESSORS

8087-2 XT - 8MHz 369.00
 80287-8 AT - 8MHz 595.00
 80287-10 AT - 10MHz 689.00
 80387-16 16MHz 1145.00

MICROSOFT RANGE

Chart † 530.00
 Excel for Windows # 890.00
 Learning DOS † 99.00
 Multiplan # 360.00
 Project # 730.00
 QuickBasic Compiler † 195.00
 QuickC † 195.00
 Windows 286 † 205.00
 Windows 386 # 365.00
 Word † 710.00
 Works # 320.00
 Word Exchange † 125.00

BOOKS

CPC TITLES

Advanced User Guide **SPECIAL LOW PRICE >>>>** 9.95
 Childs' Guide to the Amstrad Micro 13.95
 Computer Games Guide (400 Hints, Tips & Pokes) 29.95

mail order

BOOKS continued

Disc System, The Amstrad CPC 464	28.95
Filing Systems and D/Bases for the CPC464	30.95
High Energy Programs for the Amstrad Practical "C"	9.95
Practical "C"	29.65
Starting Basic - Bk 1	19.95
Sound, Graphics & Handling - Bk 2	24.95
Watson's Notes Series (for younger readers)	
Book 1: First Steps in Basic	17.95
Book 2: Exploring Basic	17.95
Book 3: Computer Games	17.95
Whole Memory Guide - 464	30.95

LOGO TITLES

LOGO Pocketbook	17.95
Practical Logo on the Amstrad	27.95
Using DR Logo on the Amstrad	37.95

PCW TITLES

Advanced LocoScript on the PCWs	39.50
Locomail User Guide - new version	54.95
LocoScript Pocketbook	17.95
LocoScript2 and the Amstrad PCW Computers - a complete guide	43.00
LocoScript2/LocoMail/LocoSpell: assignments and solutions	32.95
Mallard Basic - Introduction and Reference by Locomotive Software	45.50
Pocket Wordstar	30.95
PCW Machine Code	39.95
Program your PCW	32.95
Using Databases on the PCW	35.95
Word Processing with the PCW	27.95

CP/M TITLES

CP/M Plus Handbook - Operator's and Programmer's guide for the Amstrad CPC6128 and PCW 8256 and PCW 8512 (Soft 971) by Digital Research Inc. <i>Over 500 pages of everything you need to know about CP/M Plus. Includes a GSX supplement</i>	52.95
Choosing & Using CP/M Business Software (for PCWs)	35.95

PC TITLES

Abacus Books for Beginners:	
Cobol for Beginners	36.95
dBase IV for beginners	36.95
Excel for Beginners	36.95
GW-Basic for beginners	36.95
Lotus 1-2-3 for beginners	36.95
Microsoft Works for beginners	36.95
Microsoft Word for beginners	36.95
MS-DOS for beginners	36.95
Unix and Xenix for beginners	36.95
Ventura for beginners	36.95
Abacus Quick Reference Guides	
dBase III	24.95
GW-Basic	24.95
Lotus 1-2-3	24.95
MS-DOS	24.95
MS Word	24.95
Word Perfect	24.95
Amstrad PC1512 - User's Guide	32.00
Amstrad PPC Companion	42.50
Basic2 User Guide by Locomotive Software	39.95
Business Computing with the PC1640	44.00
Business Presentation	
Graphics on the PC1512	55.00
Communications with the Amstrad PC	44.00
DOS Plus Reference Guide for PC-DOS, MS-DOS and CP/M Programmers from Digital Research	75.00
Exploiting MS-DOS on Amstrad PCs and compatibles	46.65
Finding Free Software	34.95
Laptop Users Guide	36.95

BOOKS continued

Lotus Agenda	39.95
MS-DOS Tips and Tricks	36.95
PC System Programming for developers: an encyclopaedia for DOS programmers	69.95
PC1640 Technical Reference Manual	54.95
PC Basic Programming Inside & Out (with disk)	69.95
PC File Formats & Conversions (with 5.25" disk)	49.95
PC Tools Companion	36.95
PC Tools Deluxe Complete (covers v6)	49.95
PPC Technical Reference Manual	54.95
Program your PC	32.95
Step-up Systems Quick Reference Guides	
dBase III Plus	44.95
dBase IV	44.95
Lotus 123 vers 2.01	34.95
Lotus 123 vers 2.2	34.95
MS-Word vers 5.0	34.95
Multimate Adv II	34.95
PC/MS-DOS	34.95
WordPerfect 5.0	34.95
WordPerfect 5.1	34.95
Step-up Systems Templates	
dBase III Plus	19.95
dBase IV	19.95
Excel	19.95
Lotus 123 vers 2.01	19.95
Lotus 123 vers 2.2	19.95
MS-Word vers 5.0	19.95
Multimate Adv II	19.95
PC/MS-DOS	19.95
WordPerfect 5.0	19.95
Take-Off with MS Flight Simulator (covers v4)	29.95
Tips & Tricks for your PC Printer (with 5.25" disk)	69.95
Turbo Pascal Internals (with 800k of on-disk progs)	89.95
Using the Amstrad PC 1512/1640	29.95
Using Ability on the Amstrad PC	34.95
Using DOS Plus on the Amstrad PC1512	39.95
Using desktop publishing on the Amstrad PC	29.95
Using GEM on the Amstrad PC1512	55.00
Using MS-DOS on the Amstrad PC1512/1640	29.95
Using Printers on the 1512/1640	29.95
Word 5 Know How (with disk)	49.95
Word Processing using GEM Write	45.95

OTHERS

Computer Viruses	49.95
Computers and the Law	65.00
Creative Printmaster Book	29.95
Introducing dBase	o/s
Leisure Suit Larry Story (hints, tips + solution)	29.95
Managing your Computing: a practical handbook	50.00
Microcomputer - troubleshooting & repair	48.95

COURSES

Complete introductions comprising audio tapes, disks and text

MACHINE SPECIFIC

Amstrad PC 1512 and 1640	59.95
Amstrad PPC 512 and 640	59.95
Amstrad PC20	59.95
Amstrad PC 2086	59.95

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Order value over \$50	\$5.50	\$10.00

COURSES continued

Amstrad PCW 9512 with LocoScript 2	59.95	r
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OTHER COURSES

CP/M Computing on the PCW	59.95	r
Complete intro to IBM PC/XT/AT & compats.	59.95	r

MAGAZINES

THE AMSTRAD USER

Iss. 01 - Feb 85	Iss. 03 - Apr 85	Iss. 04 - May 85	
Iss. 06 - Jul 85	Iss. 07 - Aug 85	.....each	3.00
Iss. 10 - Nov 85 through to Iss. 21 - Oct 86	.....each		3.50
Iss. 22 - Nov 86 through to Iss. 33 - Oct 87	.....each		3.75
Iss. 34 - Nov 87	Iss. 35 - Dec 87	Iss. 36 - Jan 88	
Iss. 37 - Feb 88	Iss. 38 - Mar 88	Iss. 39 - Apr 88	
Iss. 40 - O/P	Iss. 41 - Jun 88	.....each	4.25
Iss. 42 - Jul 88 through to Iss. 58 - Nov 89	.....each		4.25
Iss. 59 - Dec 89 through to Iss. 69 - Oct 90	.....each		4.50

BINDERS

BINDERS - in white vinyl with THE AMSTRAD USER logo in silver on front and spine. Protects twelve copies. 12.95

MISCELLANEOUS

MINI SUPER CLEANER - a small hand-held vacuum and/or blower to clean out difficult to reach areas such as a keyboard. Small brush and pipette attachments supplied. *Requires 2 x 1.5 volt batteries - not supplied* 27.95

VOUCHERS

Gift Vouchers are an ideal gift for birthdays (or any other occasion for that matter) which allows the recipient to make his or her own choice of computer merchandise.

Any value of voucher (over \$20) can be purchased, but must be used through The Amstrad User Mail Order service or The Amstrad User Computer Shop, our retail outlet in Mount Waverley.

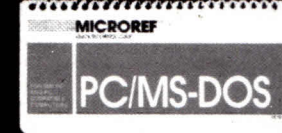
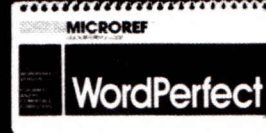
To order by mail, send your cheque, money order or credit card number with expiry date, along with your name and address (this is to where the voucher will be posted) to our address shown below.

THE AMSTRAD USER
641 High Street Road,
Mount Waverley,
Victoria 3149

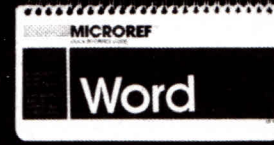
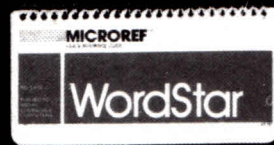
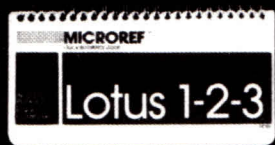
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ESSENTIAL COMMANDS are organized into logical sections for easy reference.

FUNCTION KEY DIAGRAM identifies all function key assignments at a glance. Vertical function key overlay also included.

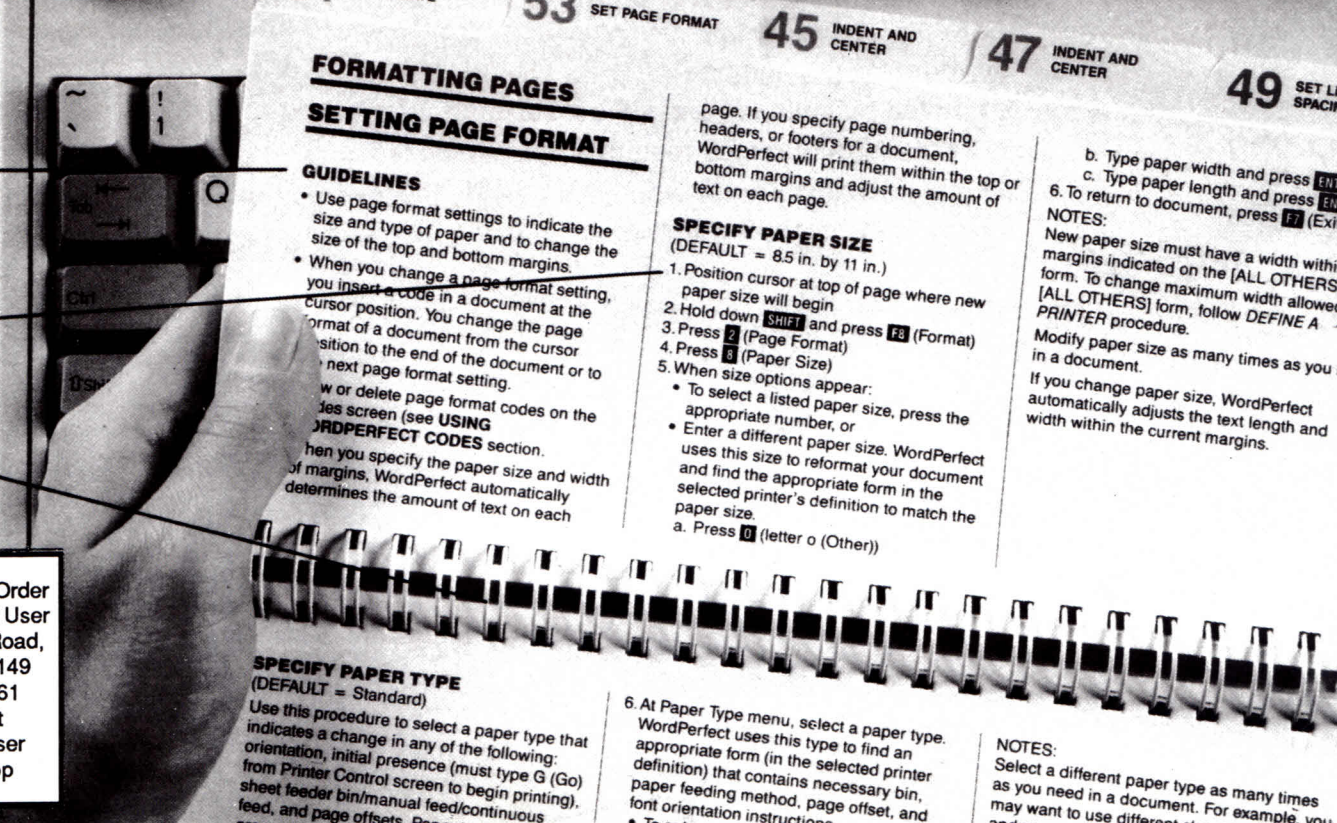
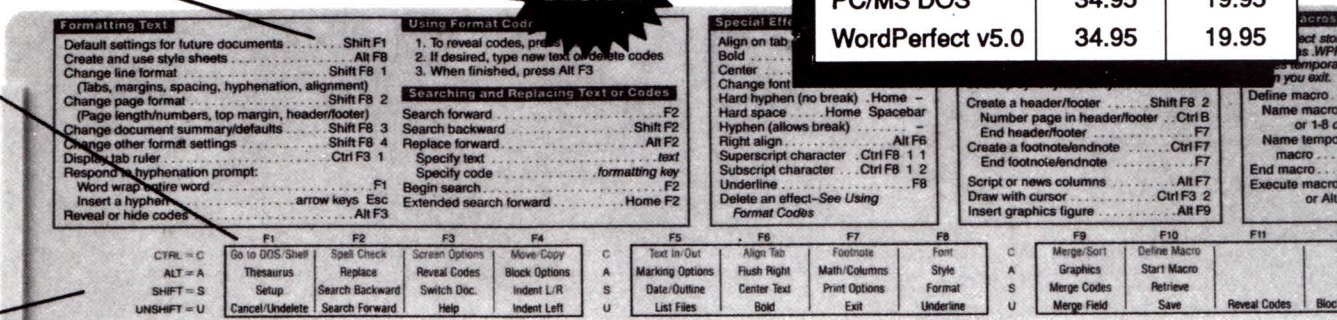
TWO-SIDED PLASTIC design fits all keyboards, wipes clean.

INDEX TABS and logical organization assure fast access to procedures.

GUIDELINES, illustrations, and examples aid learning and review.

STEP-BY-STEP outline of commands and procedures is easy to follow.

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MASTERFILE 8000

FOR ALL AMSTRAD PCW COMPUTERS

MASTERFILE 8000, the subject of so many enquiries, is now available through The Amstrad User from Campbell Systems in the UK.

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

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

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

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

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

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

Customer Details and Invoices			
British United Freight 493 Western Avenue Gloucester GL3 5JN		Tel: 0452 652 652 Contact: Mike Ref: BUF	03: Display Options Steer using Alter data Erase data Assign to set First page Next page Find key Go to record number Print Print single record Erase record Insert new record Show re-sequenced Rotate format Go to search Exit to main menu
Invoice	Tax point	Amount	Date paid
12004	20 Aug 87	£235.00	02 Oct 87
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12782	11 Nov 87	£39.20	---
12839	04 Dec 87	£883.55	04 Dec 87
Totals:		£3,253.90	Cash with order
Date of invoice			
Drive:A File:INVOICES Records:00017 Selected:00009 Key: Format:1			

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

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

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

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

Megaglomerate Ltd				
Sales Contact: Martin McManic		Mega House 143-145 London Road Chelmsford Essex CM12 5EG		
Telephone: 0245 654321		Reference: MGL		
Date of last order: 14 Aug 86		Value to date: £31,455.00		
Ref	Maker	Model	Specification	Price ex VAT
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C5002	Epson	FX105	100cps 400x10 132col	£410
C5003	Epson	L300	100cps 132col	£195
C5004	Epson	L300	100cps 200x10 00col	£195
C5005	Epson	L300	100cps 200x10 132col	£275
C5006	Epson	L300	100cps 300x10 00col	£335
C5007	Epson	L300	100cps 300x10 132col	£225
C5008	Canon	AS5	100cps 450x10 00col	£270
C5009	Canon	AS5	100cps 450x10 00col Colour	£200
C5010	Juki	5510	15cps daisywheel	£610
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C5012	Juki	6100	35cps daisywheel	£350
C5013	Juki	6300	200cps 500x10 132col	£1,795
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MASTERFILE 8000 is totally menu-driven, fully machine-coded, and comes with example files and a detailed manual. We claim (modestly) that you will not find another filing system with such power, flexibility, and friendliness.

MASTERFILE 8000 costs \$139.00 (excluding postage and packing).

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