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for Amstrad owners

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A DISC DRIVE
COMPETITION
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THE AMSTRAD USER

Issue No. 43 \$4.25 August 1988



NIGEL MANSELL'S

GRAND PRIX

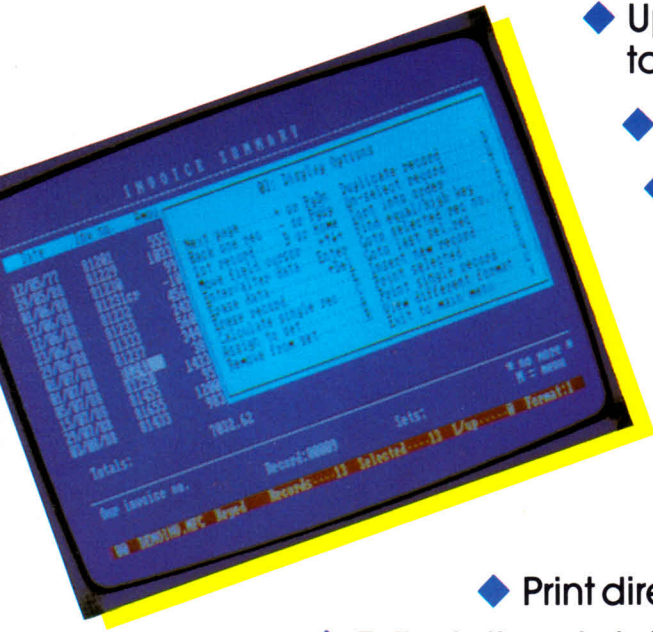
- Major reviews of Games for CPCs + more maths, graphics and Structured Programming + Expo '88 technology
- PCW Type-ins + review of joystick interface with sound + hints on LocoScript2 layouts
- Basic2 database type-in + networking PCs + PC Help

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PC

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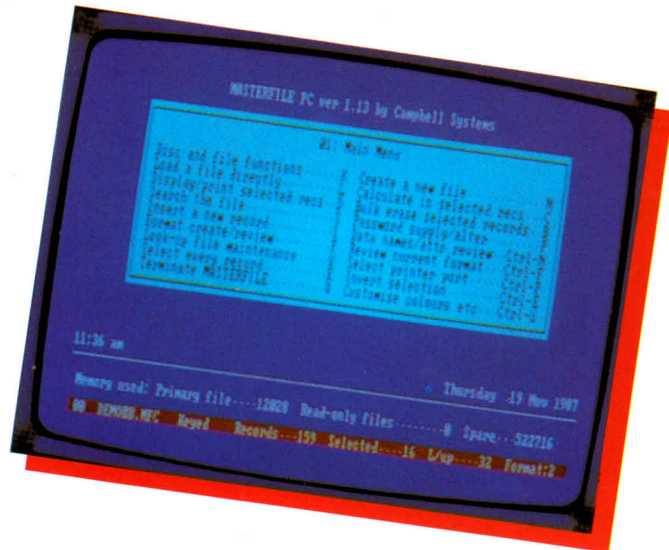


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THE AMSTRAD USER

Issue No. 43 - August 1988

For Tape Subscribers, CPC programs appearing in this month's magazine can be found at the following approximate positions:

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All enquiries and contacts concerning this Publication should be made in the first instance by writing to The Amstrad User, Suite 1, 245 Springvale Road, Glen Waverley, Victoria 3150, Australia. Urgent matters can be phoned through on (03) 233 9661.

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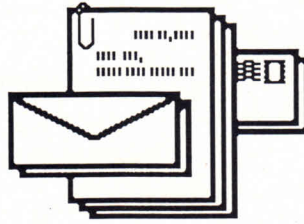
From time to time, some articles appearing in The Amstrad User will be reproductions from UK publications Amstrad Action and 8000 Plus. These are printed under an agreement between Strategy Publications and Future Publishing Ltd, Bath.

The subscription rate (for Australia) is \$42.50 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 \$21 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 and is not affiliated in any way with Amstrad or their Australian distributors or any other dealer in either software or hardware.

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.



Free years ago I were compute illitright, I cudnt tel u wot a "if then statement" meant. Now I know big words like: Directory, megabyte and Assembly language. Over 35's don't have to stay illiterate!!!

I have been a TAU subscriber almost since day one when I purchased my CPC464 in May '85. I still feel the magazine takes a lot of beating. My Arnold now has accumulated two disc drives, a choice of two printers as well as a ROM box and 64K DKtronics expansion hanging out the back. In spite of this it still does valiant work without so much as a whimper.

I have four questions for which I seek an answer either from yourselves or my fellow readers.

1. In the April 1988 issue, page 10, "Getting to know your bank manager" part 1, there was a note that I could run bank manager on my machine by running the bank switching software for the extra memory first. I thought I must have missed something so I tried it. The bank manager BASIC loader program threw up error messages!! How do I overcome or bypass it?

2. One advantage of using PROTEXT is that two programs can be in memory at the same time. Is there a way to swap data or even an ACSII version of a basic program between PROTEXT memory pool and the

general memory pool and vice versa? Is there a smart (machine code) programmer who can assist me?

3. My Amstrad disc drive user's book, section 5.5 tells me only that the Amstrad supplied IBM format for the IBM PC "is for specialist use and is not otherwise recommended". Can you expand on this statement. I would like to be able to save ACSII files to my 5.25 disc drive on a format which can be read by the IBM compatible at work. So far I haven't found the answer. How can I do it?

4. CPM+ will run on the 464+64K but I have trouble with some programs locking up, sometimes at the beginning of the program, other times on a particular function, such as viewing a file on the public domain program "NSWEEP". How can I overcome this problem?

I would be grateful if you could find space for the above letter in your magazine.

Mike Perry, Oatley, NSW.



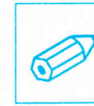
I have typed in the program 'SMART' from your last issue and find that although most of it works effectively, the writing surface has a diagonal line running from the bottom-left corner of the square to the top left-hand corner. Whether this is intended is not explained and I am reasonably sure there is no

typing error. Although line 1130 states Print" Save Load Quit Clear", and this is duly printed on the screen set-up, there is no explanation on how to activate these instructions. My computer is a CPC464.

H. Adams, George Town, Tas.

The answer to the diagonal line problem was given in last month's Mailbag section by Paul Kent.

The last two paragraphs in the introduction to SmART (page 58) explain that you must move the pointer to the required option and press the fire button on the joystick (or copy button on the keyboard).

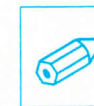


I am the owner of a PCW 8256. I was looking through the Amstrad Users Book for January

1988 and I have installed the program "Duck Shoot" as listed in the magazine. Unfortunately I find that when you run the program, numbers, letters (capital then lower case) and symbols start at the top left hand corner and work their way to the bottom left hand corner then they just move around there. Occasionally the proper layout comes but disappears in half a second. I have typed the program twice with the same results also checking the list several times. Could you please explain what the problem is.

C. Clayton, Nabitac, NSW.

We've checked the program as listed and it works fine. It sounds like another 'typing-finger' problem. It's a little difficult to tell you which part of the program is wrong based on the information you have given. We suggest you check again. Alternatively you could invest in a PCW Year Disc, and all your problems will be solved!



My CPC6128 is now about 18 months old and, may I say, I have been very happy with it. Unfortunately, as Murphy states, "when nothing has gone wrong yet, it soon will!"

The keys on my keyboard are beginning to stick. In particular, the keys most used ([RETURN], [E], [ENTER]) are sometimes prone to sticking so that they are hard to press down. It is as if they are rubbing on the sides of the holes in the plate on which they are placed.

As a trained electronics technician, I am in a position to be capable of dismantling the keyboard safely. I have done this and found a large quantity of dust, fluff, dog hairs etc. amongst the keys. This was cleaned out and the situation was considerably improved. For a time. Obviously, I could (and should) keep a dust cover on the keyboard, but the time my machine spends in use is quite high and dirt would eventually reach an unacceptable level.

My question is, have any other readers suffered this problem and come up with a solution. What I am looking for is a means of cleaning the keyboard (from inside where necessary) which includes some sort

of lubrication. Thank you for this opportunity to communicate with other readers of your excellent magazine.

J.A. Heron, Macleod, Vic.



With reference to "Doing the rounds" article by Peter Douth (TAU Sept 87), I enclose a faster draw

circle routine. It does not use sin, cos, sqr or other funny functions, and note that it is 2.225 times faster than Peter's listing 1.

After this, who needs Turbo Pascal?

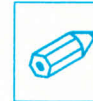
```

10 REM Quick Circle
20 CLS
30 MODE 1
40 ORIGIN 360,200
45 R%=100
50 GOSUB 80: 'Draw
60 PRINT ty; "secs to draw"
70 END
75 '-----
80 'Sub Draw
90 X%=0 : Y%=R% : E%=1-R%
100 U%=1 : V%=1-2*R%
110 t=TIME
120 WHILE X%<Y%
    
```

```

130 PLOT X%,Y%:PLOT Y%,X%: PLOT Y%,-
X%:PLOT X%,-Y%:PLOT -X%,-Y%:PLOT -
Y%,-X%:PLOT -Y%,X%:PLOT -X%,Y%
140 IF E%<0 THEN V%=V%+2:
E%=E%+U%:GOTO 160
150 Y%=Y%-1:V%=V%+4: E%=E%+V%
160 X%=X%+1:U%=+2:WEND
170 ty=(TIME-t)/300
180 RETURN
    
```

Harry Aguero, Mona Vale, NSW



In answer to R.S Muir of Endeavour Hills (TAU Nov 87) about an easier way of executing lines 200

to 270 in his lotto-checker, he should do the following:

Change line 170 to read

```
170 FOR r=1 TO 8: INPUT xLot(r):NEXT
```

delete lines 200 to 270 and add

```

200 FOR r%=1 TO 8: IF xLot(r%)= PEEK(P)
THEN POKE b,xLot(r%)
210 NEXT
    
```

Has anybody has got any cheat modes for Elite from Firebird or

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Macrocosmica from Amsoft?
David Hughes, Gladstone, SA

A complete cheat was published for Elite in TAU Jul '87 (page 14) and for Macrocosmica in Apr '87 (page 16)



Would you please publish in your magazine a very big "thank you" to Giltronic of Aspendale, Victoria for their great generosity in replacing my 5.25" drive at no cost to me after reading my letter in the June issue. This to me was very welcome. To think that there are still people who think of others not for profit but for the care of others.

Also, it shows that some times it pays to go to the other end of the country to get good service like Giltronics has given me.

"Alliance" Queensland will always be the last place that I will ever enter for they will not give back-up service to their goods.

E.J. Stenhouse, Jimboomba, Qld

A happy ending to a 'sad tale' published in our Mailbag in June. We "dips our lids" to Giltronic for coming to the rescue.



I have had my CPC6128 for almost two years now and have purchased a moderate amount of software. Before buying most of this software, I usually asked the store

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.

owner to either allow me to see the program running and/or to read the instructions (to see if I can get an idea of what to expect). This particularly applies to games that I have not seen before or read a review.

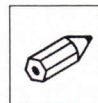
Today I was told that I could not see a game (disc) running, nor could I view the instructions. This was the manager's policy, as he felt that too much time was wasted on showing programs to people that do not buy their products.

I do realise that certain programs come in a sealed package (tape games in particular) and to expect them to be opened would be unfair. However, I do believe most people would like to know what they are buying or at least have a reasonable chance to find out.

Am I being unreasonable, or do I have the right to be thoroughly annoyed? I won't be shopping at this particular computer shop anymore!

Bill Harper, Spearwood, WA

An interesting comment, Bill. We'd like to hear from other readers on the same subject.



First let me congratulate you on a fine magazine, which is a great help for dummies like me.

The reason I have written to your magazine is to warn other readers to be alert to a mail order rip-off, for which I realise you have no control.

Back on the 11th December 1987, I responded to an advertisement which appeared in the Amstrad User, which indicated if one forwarded \$18.50 to Box 409, Elizabeth SA 5112, a CPC disc containing 50 utility, education and games programs would be returned, however to date nothing has been forthcoming.

In March this year, I did receive a letter from the advertisers, dated 16th, the purpose of this letter was to make me aware of Public Package No.2 and Easyfile which was now available if I cared to send for, along with my hard earned cash. In this letter they wished to enlist my help

in obtaining further customer orders. For every order which included my name, I was promised a credit of \$2.50 off my next order. (Great stuff, ah!). I was also informed in this letter that they were doing great business and various other programs were in the pipeline and as a result of the sales they would soon be exporting to other countries with 'Australian made' labels on them.

In reply to this letter from them, I posted off a letter asking why I did not receive Public Package No. 1, and if in fact they had sent it, would they advise the date of despatch. My letter was dated 18th March 1988 and to date not a disc of programs or a reply. It is however noted that my cheque for \$18.50 was cashed on 21st December 1987.

Not bad for a company advertising a product "Easyfile" for \$24.95 with after sales service. What would one want after sales service for?

Yes, we have been warned repeatedly by Officers of Consumer Affairs in this state - don't buy from advertisements in magazines, particularly those giving a Post Office box number.

Barry Farrell, Asquith, NSW.

This is not the first letter we have received concerning problems with Living Image. You will notice that there is no advertisement from them this month, and there will not be any more until we are satisfied that they have got their act together.

All letters should be addressed to: The Editor, The Amstrad User, 1/245 Springave Rd., Glen Waverley, Victoria 3150. Sorry, but we cannot answer any personal correspondence.

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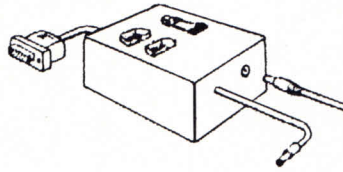
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Start Computing with the Amstrad CPC6128 - by Judith Thamm.
 A Basic course for beginners, as reviewed TAU

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PRINT DISCS - Printing discs for CPCs. 20 fonts. Easy to use programs. 5.25" discs \$15, 3" discs \$20, includes postage. Duncan Riley, 37 Sylvania Road, Sylvania Heights, NSW 2224.

PCW EDIT PRO - a Disc Manager and Full Screen Editor written in Basic using Jetsam. 20

options include Auto line numbers Find Exchange Copy. Load and Edit 7 programs at one time. Program sizes limited only by M: Drive or disc. Also 15 Basic routines, Menus Sorts etc. Full price \$30 incl. 1 disc and postage.
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This new section of the magazine offers you the chance to speak directly to the huge waiting world of Amstrad owners - or would-be owners.

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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.)

Classification: For Sale Wanted Services User Groups

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NEWS BREAK

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

NEW TASMAN PC PRODUCTS

Dolphin Computers Pty Ltd who handle the Tasman range of software have recently announced the release of two more utilities for PCs.

Tascopy PC (\$115.00) combines text and pictures in printed documents and includes a picture editor and font designer. It also contains a snapshot module which captures a copy of a current screen with a single keypress. A configuring program takes care of any printers likely to be hooked onto the system.

Tas-sign PC (\$115.00) produces large lettering signs, posters and banners in four distinctive styles. Facilities include adjustable fonts from less than one inch to the full width of paper, kerning (that's adjusting the width between letters), double density, meshing and centring.

Both packages are available on 5.25" or 3.5" discs.

CLEANING UP

There has been a plethora of cleaning and allied products released in the UK of late and no doubt some will be finding their way to Australia shortly.

There is a keyboard cleaning kit which consists of an 87ml can of aerosol foam cleaner, 25 cleaning buds and 20 wipes. Then there are labels that can be removed and repositioned without leaving any sticky bits behind. Finally power filters to protect against sudden power surges. Whatever next?

CPM+ PROTEXT HELP

Thompson Computers (UK) have just released two new tutorials for CPM+ Protex users. The first covers the mail merging facilities of the word processor and concentrates on the correct usage.

The second goes on to more advanced features and use of CPM+ Protex such as printing two or more columns of text.

3" DISC PRICES TUMBLE

Do you remember the days when 3" discs cost between \$8 to \$10 each? Over the last six months the price has been reducing to a low of around \$6.80 a disc.

Now the price appears to have fallen to below \$6.00 according to the latest prices quoted by Amstrad and All Stamps and Services (formerly Roberts Office Supplies).

This must be good news for PCW and CPC disc drive owners who can now afford to consume a few more disc than they would have otherwise done.

THE AMSTRAD USER ARRIVES IN NEW ZEALAND

From this issue (August 1988), copies of The Amstrad User will be appearing in local newsagents throughout New Zealand. Consignments have been sent to Auckland, Wellington and Christchurch for distribution by Magazine Distributors. MD is a division of Gordon and Gotch (NZ) Ltd and can be contacted in Auckland on (09) 654 379.

NEW PRODUCTS FROM PACTRONICS

Head of Pactronics, Max Walters, has recently returned from an extensive trip abroad including visits to the Comdex Exhibition in Atlanta, The Amstrad Show in London and the Computex Exhibition in Taiwan.

Max reports "I regret to say that there was not a lot of new products designed specifically for Amstrad CPC or PCW however, as Pactronics is now getting more into the entertainment software market, we are happy to announce that we have found some brilliant new games, some of which are available for the CPC and the PCW as well".

Among the list of goodies is Time and Magik, a trilogy of brilliant adventures on tape or disc for the CPC and disc for the PCW. Max has also negotiated the rights to a number of compilation games for the CPC, and for the PCW he has found a cheap graphics package and a five game compilation, due in around October. He has also sourced a very comprehensive accounts package for the PCW and is currently testing it before release.

From France will be coming a number of exciting games such as Mach II, 500cc Grand Prix, Sapiens, and Super Ski for the CPC. These titles are also available for PC compatibles. Adding to the PC range will be Wheel of Fortune, Family Feud, Starquake, and Perry Mason to name just a few.

From Canada comes a PC tutorial disc called Computer Ease - just put the disc in the drive and immediately begin to get simple instructions on how to use a PC. A real winner is Handy Scanner, the first of its kind in Australia. It scans both text and graphics at amazing speed and is compatible with most desktop publishing packages It's available now.

The list is almost endless - PC joysticks, one of which thinks it's a mouse, a PC graphics mouse, a 60 capacity 5.25" disc box with coloured lift-out holders, 3" drive head cleaners - and negotiations are continuing on over 30 other products. We wait with bated breath!

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FAMILY FORTUNES A super system for recording all income and expenses for the family or small business. Prints out lists by account code for any date range, Trial Balance etc. Includes full Assets register with Depreciation for cataloging all of your possessions. Ideal for Business or Home use. Will handle up to 32000 transactions in each section. PC only.

MICRO PRO

WORDSTAR for the 6128 and PCW. The world's best known word processor. We've used it for over 8 years and know it backwards. More books available on this one than anything else. Super fast in use. Mailmerge is the industry standard. Learn on Wordstar and you'll get a job anywhere. Runs the same on the PC.

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AT LAST The Database Manager. Runs on the 6128, PCWs and PCs. Rated "Best buy in databases for the PCW" this year. Very easy to learn. Layout the screen and print reports to suit your needs. Maintains 5 index files for every file. Search conditions include >, <, <=>, >=, contains, does not contain. Nine field types and up to 32000 per file plus up to 10 files per disc. Fantastic value.

THURSTON BROWN

TEMPDISC 5 versions for the PCWs. Templates of all kinds just waiting for you to fill in. This series has received rave reviews in the UK press. Must be used with Locoscript 1 or 2.

TYPERITE A complete typing tutor for the PCW user. Forces you to use Locoscript so you learn both at the one time.

LERNLOCO Another great disc from the same author. Teaches users of the PCW8's how to use Locoscript to the best advantage. A must for new users.

CORNIX SOFTWARE

JOB ESTIMATING Allows set-up of cost items like stock, man hours, materials etc. and gives true estimates including profit of any job. Fully menu driven, this system is very good value.

PRODUCT COSTING Very similar to Job Estimating but based on making products for sale.

CARD INDEX As the name suggests, a very easy to use card filing system that allows up to 40ch per field and 15 fields per record. Sort, search and print.

IT MARKETING

CASH TRADER if your business is just cash transactions then this one is for you. It is designed for any CPM machine: it will run on the 6128 or the PCW8s. Records all transactions and will print out Balance Sheet, Profit & Loss and give you analysis over any range. Rated "Best buy for PCW".

BUSINESS CONTROL SYSTEM formerly known as the Amstrad Business Control System, this invoicing, sales and stock control system has been sold in thousands. Proven in use in all sorts of businesses over the last eight years, we thoroughly recommend this one to you. PCW8s only.

CARD-BOX Super easy to use card file system. Up to 15 fields, search and print labels, lists etc. PCW8s only.

SUNSHINE SOFTWARE

SUBSTANTIATION Very powerful General Ledger system for small business of all kinds. Up to 999 G/L accounts, 99 sub-accounts or branches, 32000 transactions. Prints income or expenses for any time frame, by any account, sub-account, bank account with sub-totals in each category. Nothing matches this one for raw power and ease of use. Fully menu driven. MS-DOS only.

VAMS Vendor Accounting and Management System for vendors of all kinds. Handles stock control including returns, breakages. Includes G/L from Substantiation. Designed for the PPC or any IBM compatible.

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ACCOUNTS Easy, powerful, a dream to use. Complete accounting system for small business. Invoicing and Sales Ledger, Statements, G/L, Purchase Ledger, Cash Book, Trial Balance, Profit and Loss etc. All PCWs and PCs.

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AMSNET - EVERYTHING AMSTRAD

NEW GAMES RELEASES IN THE UK

Here's a run-down on the new CPC titles that have just been, or are about to be, released in the UK. Perhaps not all will make these shores - in some cases it seems just as well!

IMPACT

This is a Breakout clone which was a great hit on 16-bit machines. It will be released by Audiogenic on tape and disc. It is a bat and ball action game over some 80 screens with a further 10 being redesigned by the player. A built in screen designer is used to achieve this.

BOGIES PICK

This is a compilation from Top Ten Software. It contains four games - Herbert's Dummy Run, Druid's Moon, Darkwulde and Stock Exchange. Heaven knows where it got the compilation title. It will be released on cassette only.

BUDGET RELEASES

The Power House have released two titles; Metropolis and Astroball. Metropolis is an exploration game in which the players has to find enough fuel for a space ship to take off. Astroball is a multi-level game where the players collects articles whilst avoiding the nasties.

The Eidolon returns in budget form on the Ricochet label from Mastertronic. You will remember that this great game is a trip around your own mind, exploring and shooting while you go.

On the Americana budget label comes Bruce Lee fighting the evil wizard to obtain wealth and immortality.

Encore is the name of Elite's new budget label which will be used to re-release some of Elite's older full price titles. The first title off the ranks will be Frank Bruno's Boxing, followed later this year by Airwolf, Battleships, Saboteur and Bomjack. Elite promise that their premium titles will not appear in budget form for at least three years after their original release.

NOT A PENNY MORE . . .

A graphical adventure based on Jeffrey Archer's novel 'Not a penny more, not a penny less' and released by Domark. You must recover £1 million that has been swindled from you. (*Now available in Australia through your dealer or The Amstrad User*).

ARCADE FORCE FOUR

US Gold come in with this compilation of four games - Road Runner, Gauntlet, Deeper Dungeons and Indiana Jones. It will be available on tape or disc.

PHM PEGASUS

A hydrofoil combat simulator with filled 3-D graphics from Electronic Arts. It will be released on tape or disc.

MARAUDER

A vertically scrolling shoot-em-up from Hewson to be available on disc or tape.

BARBARIAN II

The follow-up to Barbarian, subtitled The Dungeon of Drax is currently being completed and should be available in August. It will be a multi-load game with plenty of monsters to demolish in a quest to defeat Drax. Players will be given the choice of playing either Princess Mariana or the Barbarian.

NETHERWORLD

This is a new game from Hewson, due August, where the forces of good and evil are locked in battle. You are trapped in this world. The only means of escape is by bribery and battle, the currency being diamonds which are closely guarded by dragons, acid, fire and monsters.

HEATHROW INTERNATIONAL

The Air Traffic Control game is being re-written and re-issued by Hewson who apparently will include a number of new features and airports.

LOCAL RELEASES

ALL FROM ECP

Nigel Mansell's Grand Prix has arrived at last. It affords different levels of competence - younger or less experienced players can race around the track at full speed with the turbo engaged without having to worry about fuel consumption or tyre wear. Players wanting a more realistic feel of Grand Prix racing will have to keep their eyes on the cockpit panel and wing mirrors. (Reviewed elsewhere in this month's magazine).

Yes Prime Minister features Rt. Hon. James Hacker, Sir Humphrey Appleby and Bernard Wooley in a graphic strategy game where, as the Prime Minister, you must survive just five days. All sorts of crises occur which have to be resolved by making decisions with flair, charm and diplomacy. Telephones ring and telexes chatter messages giving information on possible action to be taken. This game shows that being PM is quite a pressure job. Available for CPCs on disc (\$49.95) or tape (\$39.95).

The Krypton Factor based on the television quiz show can be played by one person or against three others. It is split into six rounds: Mental Agility; Observation; Response; Physical Ability; Intelligence and General Knowledge. Each round has a different screen and a time limit. Scores are accumulated and the highest pronounced the Superperson at the end of the contest. Available for CPCs on disc (\$49.95) or tape (\$24.95).

Slaine from 2000AD (also reviewed this month) is a graphic adventure which is somewhat different from the norm. A 'severed hand' is used to make selections of objects, actions and so on and so control the thoughts of Slaine. Very good graphics. Available for CPCs on disc and tape at \$34.95.

The first impressions a visitor will get when attending Expo '88 in Brisbane this year will surely be one of overall cheerful friendliness. Even before the gates are opened, the gathering queues are entertained by bright yellow clad Expo staff, jugglers and an occasional appearance by Expo Oz. The atmosphere is maintained throughout the whole Exposition, and during my three day visit I never once heard anything remotely like an impatient comment from the staff or pavilion representatives.



With such a major international event, all eyes are on Australia and the organisers to get it right. I believe they have, but without the help of a computer things could have been different. Expo's technology unit director, Ken Pope, believes his unit's contribution makes World Expo 88 the most computerised Exposition in history.

Working quietly behind the scenes is an IBM System 38. This is the driver for a network of over 200 devices of different sizes and functions ranging from personal computers, communications through to control devices. And while looking after all of this it is also responsible for maintaining a number of databases.

Many Expo managers are equipped with PCs and are able to tap into their respective database on the mainframe to extract up-to-the-minute information. For example, up to 40,000 items will be lost or mislaid during the six months the Exposition is in operation. A database under the "Expo Finders" system is capable of keeping a log of all found items handed in, including

the place, time, description and any other details which could help trace the owner. On the other side of the coin, a log is kept of items reported missing and can be compared with the 'lost property' being held. With items being lost at the rate of roughly one every 15 minutes you can see the need for such a system.

Another database, this time within the "Expo Capers" system, handles everything associated with the 25,000 performances ranging from a sole performer to a mass display. It holds details of the bookings of each performance and against each of those the type of equipment required such as lights, sound and even refreshments for the participants.

There are also a number of independent systems in operation, some working quite unobtrusively. For example, an Access Control System runs a check on season and staff passes which are shown each day at the turnstiles. Each pass is verified by an infra-red scanning device and automatically reports any stolen, lost or even forged passes.

I've already mentioned lost items, but we all know that these can include children (even parents), and the organisers have allowed for this inevitable eventuality. The system is called "Lostots" and is based on an American developed Datapoint Corporation system. It allows youngsters in juvenile courts to give evidence outside the stress of a courtroom by voice, video and data communications. In Expo's case, lost

TECHNOLOGY AT EXPO 88

Simon Anthony takes a behind the scenes look at the computer power at World Expo '88 in Brisbane.

children are identified by their parents, first through a visual only link-up, and once confirmation is made, a two-way conversation can be established to relieve the anxiety of the child (and parent) before they re-unite.

Telecom has joined with the Expo authorities to provide a public information service through eight kiosks dotted around the site. In each are a number of touch sensitive screens which access a bank of laser discs returning the information requested. The details are supplied in both English and Japanese.

In the end, I judge the success of the technology used in the organisation by its obvious presence, or rather lack of it. Apart from the high profile public facilities, you would never know there was anything else whirring away in the background.

I take my "I went to Expo '88" hat off to them!

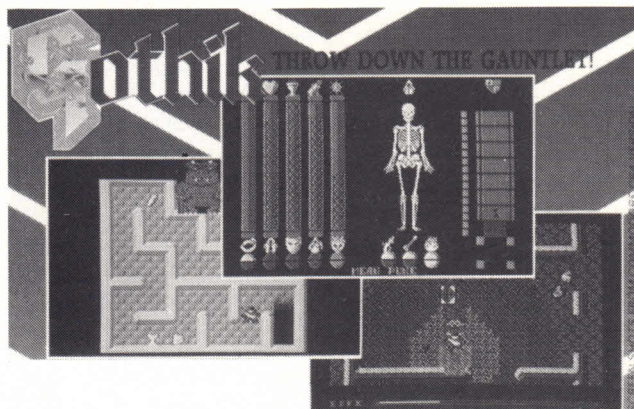
World Expo 88 is the second Exposition to be held in Australia. The last one was held in Melbourne in 1888 to mark the 100th anniversary of the arrival of the First Fleet. The Melbourne Exhibition Building is the legacy from 100 years ago.

The next Exposition will be held in Seville, Spain in 1992. This will mark the 500th anniversary of Columbus' discovery of America. Chairman of World Expo 1992, Emilio Cassinello, says that the plans for his massive publicly funded operation are already well underway. However, this is the last one planned at the moment, due mainly to the enormous costs involved.

Perhaps future organisers should take a leaf out of the Australian organiser's book, who claim that Expo '88 has not received any government funding. It has met all its costs through sponsorship, ticket sales, merchandising and the final sale of the site.

GAMES THAT PEOPLE PLAY

A run-down on some new CPC titles



GOTHIK

Another clone, or Firebird throwing down the gauntlet?

DISC \$39.95

TAPE \$29.95

The scenario: the Supreme Wizard Argoth has been slain by the evil arch-mage Ansalon and to prevent Argoth from ever being resurrected, his body and soul was dispensed throughout the Catacombs of Kaza. In turn, these hidden chambers were guarded by mighty demons. Many years went by until a young warrior who was passing through the land caught sight of the four dark towers of the castle.

You take on the role of Olaf the Viking warrior, or Olga the super-heroine. Olaf is stronger and quicker in using arrows whereas Olga is stronger in the powers of magic. The quest is to find various parts of Argoth and rebuild him.

The screen consists of a four-way scrolling maze with roving 'eyes' and 'gorillas' all capable of firing energy sapping missiles - in fact brushing against them can reduce your strength. There is a maze to each of the four towers and there are seven levels - twenty-eight problem areas in all. Scattered around the screens are magic potions, some giving extra magic powers and others hindering progress, unfortunately there is no way of telling what the potion will do if you pick it up. For example, picking up ARCHER will double the arrows you have collected, FEAR will make all creatures run away from you or HEAL will replenish your strength. On the other hand DRAIN depletes your magic, SLOW slows you down to half speed and TRAP makes bracken grow all around you. The bracken can also be found blocking your way through the maze but can be removed by using a small Firestorm spell. One of the most useful potions, if you manage to come across it, is JERICHO where all the walls to the maze disappear, a bigger brother to JERI where only the walls on the current screen crumble.

At any time during the game you can hit the space bar and get a status display. This will show you the amounts of energy (also displayed during play at the bottom of the screen) and weapons. It also shows the limbs so far recovered, the tower and level you are

currently exploring, and facilities to change the weapons and their impact - clearly the more powerful you make them the quicker your magical strength reduces. The space bar will also act as a pause for a break.

As you progress through the game, you can choose to use various Magic Relics for different effects and tasks. You will also find 'portals' through which you pass to other towers and levels - and all the time avoiding the 'gorillas' and 'eyes'.

Yes, it is similar in many ways to Gauntlet, with good scrolling, a snappy tune and fun to play. If you have never seen Gauntlet you will find Gothik very absorbing. Whilst my eight year olds just enjoyed roaming around zapping the baddies, my eleven year old managed to get further into the game than I did by reducing at least three mighty demons to dust. Thank goodness I had Gothik during the school holidays.



SLAINE FROM 2000AD

A continuous action adventure from Martech for CPCs

DISC \$35.95

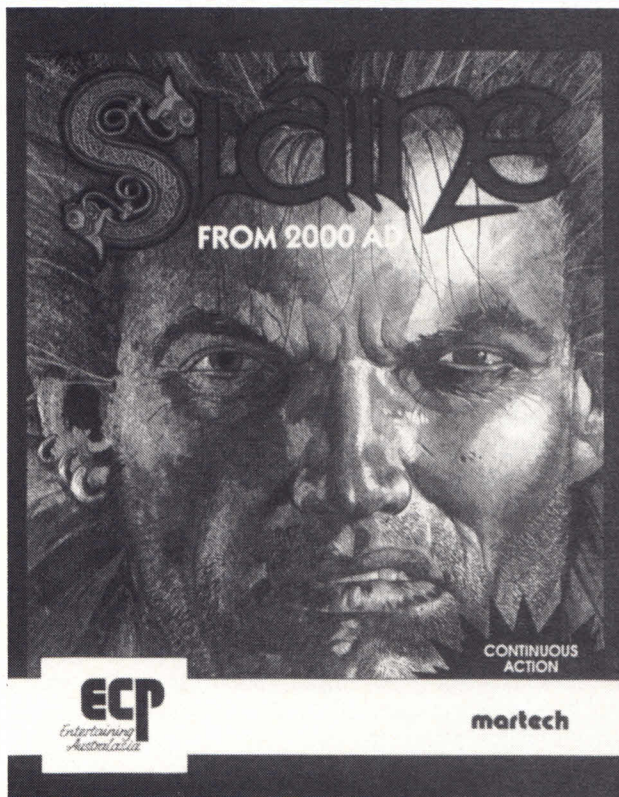
TAPE \$35.95

Slaine is an unusual adventure to play. It was born from "Nemesis the Warlock" which although well received at the time was felt not to go far enough in capturing the true spirit of Nemesis (as portrayed in the comic).

Slaine adopts an original approach to adventuring in combining an interactive story and graphics to show the action in full details. This is achieved by the use of 'Reflex', which continuously scrolls thoughts from Slaine's mind from which the player can make a choice. Thus, by moving a severed hand around the screen via the keyboard or joystick, Slaine's actions can be determined by the selection made. Sometimes you have to be quick to make a selection as thoughts come and go in Slaine's mind rapidly.

"Thoughts" that come into Slaine's mind are split into four sections - MAIN: move, status, examine etc.; OBJECT: pick up, drop, put in etc.; ACTIONS: open, close, ask, use etc.; and LOOK: around, in, on. Ukko is Slaine's sidekick and can to some extent be manipulated though the thought process, but you will find him a character not always responsive. In this event HIT UKKO is a useful action but self defeating if used too often.

Some adventurers who prefer to puzzle for hours over a standard text only adventure may find this style of game too fast. I found it refreshingly different.



JET BIKE SIMULATOR

Code Masters' Water Sport for tape based CPCs

TAPE \$29.99

It is amazing how many good games have been produced by the Oliver twins and Jet Bike Simulator is another to add to the list. The pack comes in two cassettes, the first containing a standard playing version on side 1 and an expert level game on side 2. The second cassette contains some sixteen extra screens. Each scenario of docks, lakes and coasts has eight screens, except for the standard version which will only take in the first five.

Rather like Grand Prix Simulator you can initiate an action replay of the previous game. Other options include a two player game, high scores table and loading new screens. Skipping a computerised Jet Bike across the water is similar to driving a car on snow or ice, but with practice it looks impressive. Four bikes are shown on screen, two of them are controlled by the program, the other two by keyboard or joysticks. The program doesn't cheat and block your path with its own bikes.

The graphics are extremely well thought out and presented with clarity. The game is quite addictive, making you want to strive for a better score next time,

and it certainly kept my kids happily occupied for hours.



NIGEL MANSELL'S GRAND PRIX

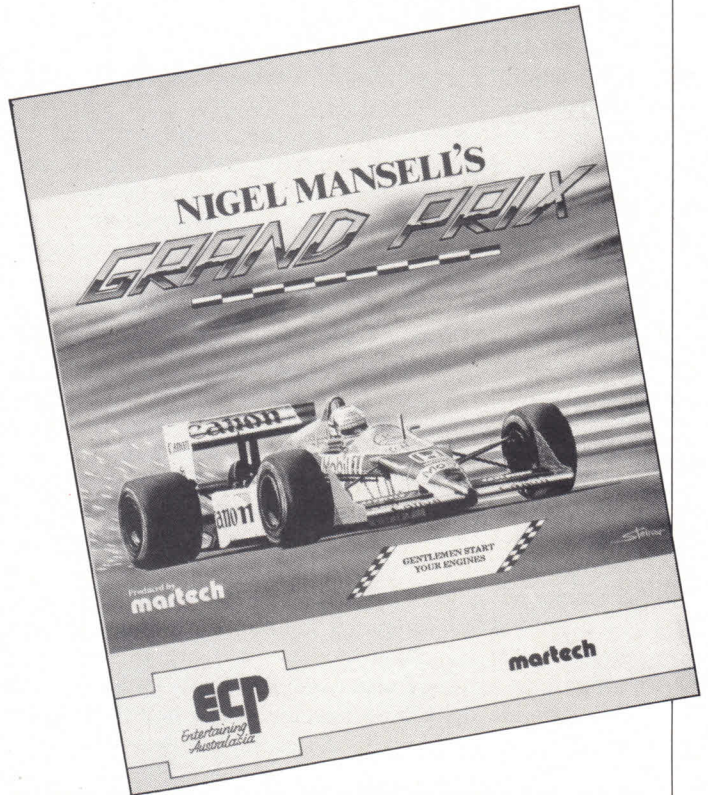
How does this compare with the rest of the CPC motor racing games?

TAPE \$35.95

The answer is - very favourably. Poor old Nigel hasn't been having a very good season this year on the real race track, but the ex-World Champion driver has lent his name to a pretty successful computer game.

It consists of a choice of 16 Grand Prix racing circuits. Once a selection has been made the display changes to a driver's cockpit view - the top half of the screen showing the track ahead and the bottom half a comprehensive display of the car's control panel. The information here is extensive including oil, water and turbo temperature, oil pressure, fuel left, speed, lap time, best lap time, fuel range and so on.

The idea of the game is to compete in at least eight of the sixteen races. Players can determine the number of laps they want to complete (which is then fixed for all races) and are provided with a warm-up lap before the main race. The game is realistic in that pit stops can be, and often should be, made for tyre changes and the like. Tyre wear plays havoc in the dying laps if you are not careful. Control can be through the keyboard or joystick though most will find the latter easier to handle and get a better response. NMGP from Martech is another well designed game in the graphics department, very addictive, but may have green screen owners turning the same colour as their screen - it's ten times better in colour.



SUPER STUNTMAN

The better the stunt, the better the points

TAPE \$11.00

Super Stuntman is another Code Masters' budget title on tape only for CPCs. I gauge the addictiveness of many games by letting the kids run loose on them for a while. This game did not require too much persuasion to get them to leave. It is presented well, but the action takes place in only about 25% of the available screen. The rest of the space is taken up with scores, timing and damage details.

The scenario is that you, as the Super Stuntman, must perform special stunts in a car or boat through seven screens. At the same time 'baddies' are hurling obstacles at you and trying to push you into danger. Points are scored for the kind of stunt performed, for example, hitting a mine and spinning wildly will earn you 1000 points. Naturally, this will cause damage to your car and you will find that you can only do that stunt twice.

Control is through the keyboard or joystick, and is sometimes very difficult, if not impossible, to reverse out of some situations. Super Stuntman may keep some people happy but I suspect not for long.



GAUNTLET II

A significant upgrade on the original Gauntlet in gameplay difficulty

DISC \$44.95

TAPE \$29.95

One year on, Thor, Merlin, Thyra and Questor return in another conversion from the arcades. All of the features of Gauntlet are there and some new ones have been added to improve the old game. Two people can still play as a team in their exploration of the dungeons and there are over 100 for you to explore.

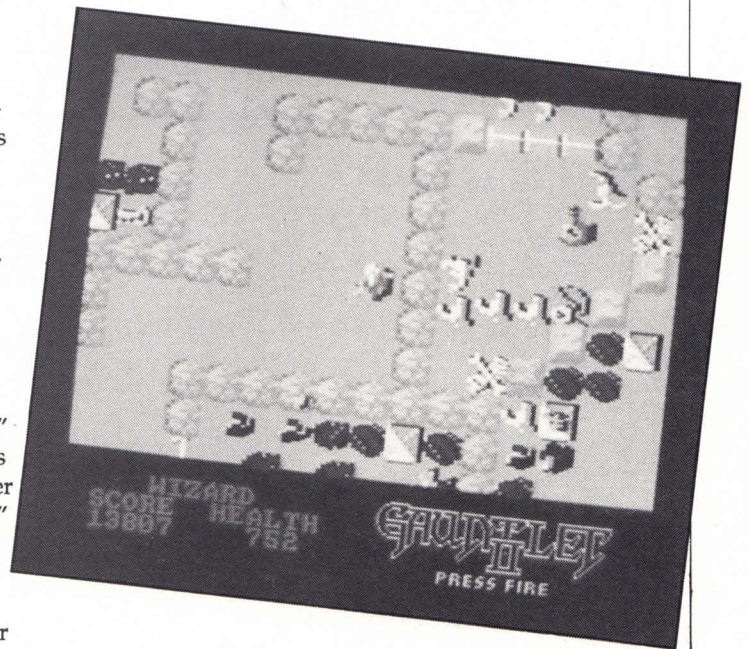
The first difference is that both players can use the same type of hero and will probably stop arguments over who uses which character. Amulets have been added and they do one of the following: invisibility, invulnerability, repulsiveness, transportability, super shots and reflective shots. All the old sorcerors, monsters, grunts, ghosts, lobbers and demons are present and they still pour out of generators. Death still wanders around the dungeons and severely drains your energy, but some new monsters are some super sorcerors, acid puddles and the "it" and "that" monsters.

Super sorcerors teleport in, shoot you, then teleport off again and continue in this fashion until you shoot him. The acid puddles slither around and drain your health by a large chunk if you bump into them. The "it" monster causes all of the monsters to be drawn towards the player who is "it". If you bump into the other player then you make him/her become "it" instead. The "that" monster looks exactly like the "it" monster but makes you lose one of three things, a special power, a potion or 100 health units.

Treasure chests now come in two forms - ordinary or locked. The locked ones need a key to open them and contain treasure, a key, food, a potion or Death. Treasure rooms appear as in the original and they give you the opportunity to boost your score and possibly

acquire some potions. Whilst the movement of the characters seems smoother, the graphics are similar to the original. Sound is limited to spot effects with a title tune on the loading screen.

Dragons exist in the arcade version but have not



made the transition to the Amstrad. This will probably disappoint fans of the arcade game or make them breath a sigh of relief. All in all, a good conversion that will keep you monster bashing for a long time.

GEE BEE AIR RALLY

The joystick gripping, pylon shaving air racing game from Activision

DISC \$39.95

TAPE \$29.95

Youpi! Il est temps pour ces jeunes gens intrépides et leurs machines volantes de s'envoler une nouvelle fois hand a sec', wrong page OK, so you're the lunatic who wants to fly the GeeBee - sit down and we'll run through a few pre-flight details. Racing against the clock, contestants strive to complete four courses over eight games accumulating points as they go. Each level is more difficult than the one before and the fourth course in each level is a special low flying balloon popping or slalom event. Each pilot gets two chances to complete each course in the time allotted. To score the most points a pilot must stay on course and avoid any mid-air collisions with other planes.

That's the run-down, but what's a GeeBee? It was a leading speed plane in the 1930s but was looked on by many as an apple barrel with wings. Apparently it

handled like a barrel to many pilots and claimed some lives, but to pilots with "the right stuff" it meant winning races.

To the game itself. It's a little flickery, but that soon gets lost in the need for concentration to stay on course and avoid the other planes in the race. You can fly over, under or between the other contestants making sure you keep within the marked course. The impression of movement is achieved by moving coloured bars on the ground - not the most unique method. One can easily argue that this game would be more suited to younger children as it is not that difficult to play; certainly the initial level is not hard. I found the game repetitive in that although the eight levels get progressively harder (by introducing more contestants to avoid), they are still very similar. Seasoned game players may feel that there are not enough hazards to keep them interested.

BOOK LOOK

Graeme Harris reviews the book "Computers and the Law" by Richard Mawrey and Keith Salmon

It's a brave man who asks a lawyer to review a book. So that makes the Editor a man of some courage. In other words, he asked me!

In fact, it probably takes some fortitude to ask a lawyer to do anything! You never know what the bill might be.

It's because of the mystique that still surrounds the law and the legal process that "Computers and the Law" by Richard Mawrey and Keith Salmon is to be welcomed. The stated aim of the book is to set out the basic principles of English law that are likely to be relevant in the field of computers and to relate those principles to the kind of problems that people in that field are encountering every day.

On balance, the authors succeed reasonably well in achieving their aim. Their book gives an overview of just about every legal principle that might be relevant to a person concerned with computers.

SCOPE OF THE BOOK

The authors have certainly not contented themselves with considering legal issues that affect computers in particular. Much of the book is concerned with legal matters of general application.

There are chapters on contract, misrepresentation, "torts" (such as negligence, fraud and employers' liability) and damages, with the authors relating them to issues that could arise in connection with computers. The authors also deal with matters of particular signifi-

cance to computer users. Amongst these are the subjects of copyright and computer records as evidence.

However, there are two aspects to be noted:

AIMED AT COMPUTER PEOPLE

First, the book is written for people in the computer area. It's not a lawyer's reference book. This means that it would probably be very helpful for someone who wanted to grasp the basic legal principles - but if you had a significant legal problem, you'd still have to place yourself in the clutches of the lawyers! (*Get a quote first!* - Ed).

DIFFERENCES BETWEEN AUSTRALIA AND ENGLAND

Secondly, the aim of the book is to set out principles of English law. This is understandable - the book is published in England. But, since for most of us, Australian law is likely to be more relevant, we must ask: does this matter? It depends. Although Australian law is closely modeled on English law, and the basics are still very similar, there are quite a few differences these days.

In particular, different legislative provisions apply. The English parliament has passed a number of Acts that apply in various areas. So have the State and Federal parliaments in Australia. Clearly therefore, there are some differences. For example, the book refers to the Unfair Contracts Act and the Data Protection Act. In Australia, you'd need to know about the Trade Practices Act and the Credit Report-

ing Act.

PROTECTION TO INDIVIDUALS

The Credit Reporting Act in Victoria (and there are probably equivalents in other States) enables anyone to check information held about their financial standing by credit reference agencies. But we do not have an equivalent to the English Data Protection Act. This Act goes much further, and requires all data bases relating to individuals to be registered.

COPYRIGHT

An area of particular importance is the legal protection given to software. In Australia, the Copyright Amendment Act in 1984 gave copyright protection to computer programs (by including them in the definition of "literary work"). We learn from "Computers and the Law" that there is similar legislation in Britain: the Copyright (Computer Software) Amendment Act 1985.

THE CLUTCHES OF LAWYERS

So, in conclusion, "Computers and the Law" is not going to save you from the clutches of the lawyers, if that's to be your destiny. But that's no reason for not working on the basics - and in the absence of an Australian book in the area, "Computers and the Law" would be a reasonable place to start. Perhaps a grasp of the basic legal principles will make it less likely that the reader will fall into the hands of the lawyers! Certainly, "Computers and the Law" is quite readable (for a legal book!), reasonably comprehensive, and logically structured. But remember, details of Australian principles (and especially the names of Acts of Parliament) should be checked if you're really depending on a particular point.

Graeme Harris is a lawyer who's caught the computer bug. As a result he now realises that even though he's still learning about the law, he's got even more to learn about computers.

"Computers and the Law" is published by BSP Professional books in hardback at \$65.00

This third module covers multiplication and uses routines of the support module 1, and must be merged with it (the second module is not necessary). It performs multiplication of numbers stored in the packed BCD format, by repeated addition in machine language.

The algorithm is very much the same as the multiplication method taught in primary school. To multiply 5678 by -1234 (with SD set to 4), the number will be moved to the buffers:

```
byte number: 0 1 2 3
result buffer: cx 00 00 00
multiplicand: c1 56 78
multiplier: c2 12 34
```

where c1 and c2 are the characteristics of multiplicand and multiplier, and cx will be set to the result characteristic.

Remembering that we have two digits per byte, we add the 5678 to the buffer 12 times, starting at the byte 3 of the buffer and the byte 2 of the multiplicand, adding any overflow from the buffer byte 2 into the byte 1 on each pass.

When the multiplication by the first byte of the multiplier is finished, the multiplicand is shifted one byte to the right:

```
byte number: 0 1 2 3 4
result buffer: cx 06 81 36 00
multiplicand: c1 00 56 78
```

This time we add the 5678 to the buffer 34 times, starting at the byte 4 of the buffer and byte 3 the multiplicand, giving:

```
byte number: 0 1 2 3 4
result buffer: cx 07 00 66 52
```

Multiplication is now finished, and the result must be adjusted to the required format. Bits 6-0 of the characteristic form the exponent, which indicates the position of the decimal point as excess 64d, left or right of the implied point just to the right of the characteristic. To determine the exponent of the result requires addition of the exponents of the multiplicand and multiplier: $ex=(e1-64)+(e2-64)+64=e1+e2-64$.

This arithmetic is performed in one byte, and both underflow and overflow affect the high bit. Underflow defaults to zero, overflow is reported as such, in the same way as the resident routines.

The sign of the result is determined by comparing the sign bits of the multiplicand and multiplier: if they are the same, the result is positive, otherwise it is negative. At this stage the result characteristic (the cx byte) will have the bit picture of 01001000 (72d, 48h): the result is negative, the decimal point is eight places to the right of the implied point. But the leading digit of the mantissa is zero, so the result must be shifted one digit to the left and the characteristic decremented. Finally, the result is rounded to four digits, to finish as -7,007000.00 (-0.7007e+7). The rounding will not overflow the leading digit, because the last significant digit is

MACHINE CODE MATHS

The third module of high precision arithmetic in
Z80 Machine Code from Petr Lukes

never greater than eight before rounding.

The ubiquitous factorials are again used for demonstration; naturally it runs much faster than the repeated addition method in module 2. When the division module is finished, it will be possible to use expansion series to evaluate transcendental functions (such as sines and logs) to 62 digits.

```
10 MODE 2:PRINT"BCD : High precision arithmetic"
20 PRINT"P. Lukes, 26 Noll St., Toowoomba, 4350"
50 PRINT"BCD3:Mutiply installed LKS 880308"
640 '
650 ON ERROR GOTO 830'traps overflow in binary arithmet
ic
660 PRINT:PRINT"Multiplication demonstration"
670 PRINT"Enter number or press ENTER for next demonstr
ation:"
680 LINE INPUT x$:a=VAL(x$)
690 IF x$=""THEN 850 ELSE GOSUB 3020
700 IF x$=""THEN 670 ELSE v1$=x$'first number
710 GOSUB 3100:PRINT ex$
720 PRINT"Enter second number:"
730 LINE INPUT x$:b=VAL(x$)
740 GOSUB 3020:IF x$=""THEN 720
750 v2$=x$'second number
760 GOSUB 3100:PRINT ex$
770 wr$(0)=v1$:wr$(1)=v2$'set up for multiplication
780 PRINT"Product":PRINT"by inbuilt routines : "a*b
790 GOSUB 3610'multiply
800 GOSUB 3100:PRINT"by BCD : "ds$:PRINT"exp : "ex$'dis
play result in x$
810 GOTO 660
820 '
830 IF ERR=6 THEN PRINT"Binary overflow":a=0:b=a:RESUME
NEXT
840 PRINT"Error"ERR"in line"ERL:STOP
850 '
860 ON ERROR GOTO 0'cancel error trap
870 PRINT:PRINT"Factorials by multiplication"
```


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```

880 g=1:x$="1":GOSUB 3020:v1$=x$:f1=LOG10(1)'initialise
to 1!
890 'loop
900 x$=STR$(g):GOSUB 3020:v2$=x$'convert g to BCD forma
t
910 PRINT:PRINT"Factorial of" g
920 wr$(0)=v1$:wr$(1)=v2$:GOSUB 3610'multiply
930 v1$=x$'current factorial, also in x$
940 PRINT"BCD :":GOSUB 3100:PRINT ds$:PRINT ex$'display
950 PRINT"Log : ";:f1=f1+LOG10(g)'compute by log
960 c0=INT(f1):d0=f1-c0:d0=d0*LOG(10):d0=EXP(d0)
970 PRINT d0"E"+MID$(STR$(c0),2)'result in exponential
form
980 IF x$="" THEN 1000
990 g=g+1:GOTO 890
1000 '
3000 STOP' 3000
3600 '
3610 'Multiply : entry:numbers in wr$( ), exit:product i
n x$
3620 IF wr$(0)="" OR wr$(1)="" THEN x$="":GOTO 3690
3630 MID$(buf1$,1)=zero$:MID$(buf2$,1)=zero$
3640 MID$(buf2$,1)=wr$(0)'multiplicand
3650 MID$(buf1$,buf1%)=wr$(1)'multiplier
3660 CALL@pro%(0)'multiply
3670 x$=MID$(buf1$,1,sb%)
3680 IF ASC(x$)=0 THEN PRINT"BCD overflow in multiply":
x$=""
3690 RETURN
3700 '
7430 'needed if module 2 not installed
7720 '
7730 PRINT"pro : BCD multiplication"
7740 DATA fd,21,AA,AA,af,3c,f5,f1,f5,21,BB,BB,06,00,4f,
09
7750 DATA 7e,b7,2B,2f,4f,c5,fd,4e,00,21,CC,CC,23,11,DD,
7760 DATA 09,eb,09,c1,e5,d5,d1,e1,e5,d5,fd,46,00,af,ia,
8e
7770 DATA 27,12,2b,1b,10,f8,1a,ce,00,27,12,79,3d,27,4f,
20
7780 DATA e5,d1,e1,f1,3c,fd,be,00,30,15,f5,21,DD,DD,fd,
86
7790 DATA 00,06,00,4f,09,5d,54,13,ed,b8,eb,36,00,18,a8,
11
7800 DATA DD,DD,1a,21,BB,BB,e6,7f,4f,7e,e6,7f,81,d6,40,
fe
7810 DATA 02,38,27,fe,c0,30,23,fe,80,30,5d,32,CC,CC,1a,
ae
7820 DATA 2f,e6,80,21,CC,CC,b6,77,00,21,CC,CC,23,7e,e6,
f0
7830 DATA 20,27,2b,7e,e6,7f,fe,03,30,0f,af,21,CC,CC,36,
c0
7840 DATA fd,46,00,23,77,10,fc,18,2e,35,fd,4e,00,06,00,
09
7850 DATA 41,af,ed,6f,2b,10,fb,18,d0,21,CC,CC,7e,e6,7f,
fe
7860 DATA 7f,30,15,fd,4e,00,06,00,09,41,05,7e,c6,55,27,
2b
7870 DATA 7e,ce,00,27,77,10,f8,c9,af,32,CC,CC,18,f9
7880 b=110:DIM pro%(b):RESTORE 7730:c=0
7890 FOR a=0 TO b:READ x$,y$':PRINT a,x$" " y$
7900 pro%(a)=VAL("&"+y$+x$):c=c+pro%(a)
7910 NEXT a:IF c<>321766 THEN PRINT"Data error":STOP
7920 bof1%=100:bof3%=bof1%+bof1%-1
7930 'bof1=result,bof2=multiplicand,bof3=multiplier
7940 pro%(1)=@sb%:pro%(5)=bof3%:pro%(50)=bof3%
7950 pro%(15)=bof2%:pro%(38)=bof2%:pro%(48)=bof2%
7960 pro%(13)=bof1%:pro%(62)=bof1%:pro%(66)=bof1%:pro%(69)
=bof1%
7970 pro%(78)=bof1%:pro%(93)=bof1%:pro%(109)=bof1%
7980 '
7990 RETURN

```

P-s-s-t!

Want to win a printer?

Turn to Page 39!

GETTING TO KNOW YOUR BANKMANAGER

Anthony Trost crosses the 't's and dots the 'i's in this sequel to his bank switching tutorial

In the second part of my article on using the BANK MANAGER I quite flippantly mentioned that the second 64k bank of memory could be used to store many fields of data as long as you had a good knowledge of your string handling commands.

To refresh your memory ... "Limitations are now cropping up all over the place but with a thorough knowledge of string handling techniques a name, address and telephone number could be joined and placed in a record, length of around 50 characters - requiring |BANKOPEN, 50 to initialise the RAM-disc."

In this sequel, I hope to get down to the specifics of how this could be done so that those without string handling knowledge who want to use the extra memory are not put off or disadvantaged.

To start, I'd like to show you what we are eventually aiming for. The first major example program will use a name (max. length of 20 characters), a city (max. length - 15 characters) and a telephone number (max. length - 10 characters) to make one large string of characters that we can place into the RAMfile. These three sections add up to a maximum length of 45 characters.

The name takes up the position from characters 1 to 20, the city from characters 21 to 35 and the telephone number from characters 36 to 45.

I find that the simplest method of constructing a string of such exacting specifications is by using MID\$. Usually MID\$ is used for breaking a

string into sections. It has the format...

```
MID$(string exp, character position, number of characters)
```

```
10 a$ = "1234567890"
20 PRINT MID$(a$,4,3)
```

This small program should give the result - 456 - because "4" is the character in the fourth position and the three characters from then on are 456.

MID\$ can also be used to change the middle characters of a string expression. It is one of those commands where you usually think, "Nice - but useless".

Try this:

```
10 a$ = "123456789"
20 MID$(a$,4,3) = "abc"
30 PRINT a$
```

You should have had a\$ returned as '123abc7890'. If you can come to grips with the above program then the following should pose no problems. To use these two major programs type in each and save them in turn. Run this first one and enter some names, cities of residence and telephone numbers. Then, run the second program immediately after to recall them. (I'm assuming BANK-MAN has already installed your RSX's.)

```
100 REM *** preparing data for placement **
110 |BANKMAN, 45 : r% = 0
120 MODE 2
130 ramdata$ = SPACES$(45)
140 INPUT "Enter the name. Maximum of 20
```

```
characters ->> "; name$
150 n = LEN(name$)
160 IF n > 20 THEN 140
170 INPUT "Enter the city. Maximum of 15
characters ->> "; city$
180 c = LEN(city$)
190 IF c > 15 THEN 170
200 INPUT "Enter the telephone number.
Maximum of 10 digits ->> "; tel$
210 t = LEN(tel$)
220 IF t > 10 THEN 200
230 MID$(ramdata$,1,n) = UPPER$(name$)
240 MID$(ramdata$,21,c) = UPPER$(city$)
250 MID$(ramdata$,36,t) = tel$
260 |BANKWRITE, @r%,ramdata$
270 PRINT "Any more (Y/N)"
280 a$ = UPPER$(INKEY$) : IF a$ <> "Y"
AND a$ <> "N" THEN 280
290 IF a$ = "Y" THEN 120
300 END
```

Remember that I said the string we are constructing is 45 characters long. That is the reason we |BANKOPEN, 45 in line 110 and have a string called ramdata\$ that is 45 spaces in length in line 130. Lines 140 to 220 are used to input the NAME, CITY and TELEPHONE NUMBER and also ensure that they do not exceed the maximum length. LEN(string exp) is the string handling command used to check the length of a string.

Line 230 is where I change the first characters of ramdata\$ to that of the person's name. I also convert the name to upper case using UPPER\$ to ensure that the data is absolutely consistent throughout the file, ie. all capitalised. Lines 240 and 250 follow suit by changing the spaces in ramdata\$ from position 21 to 35 and 36 to 45 to the city and telephone number respectively. The variable, ramdata\$, is written to the RAMfile in line 260 and you are then given a choice to repeat the procedure if you desire.

If you really want to see your prepared data as it gets written to the RAMfile then add line 265.

```
265 PRINT ramdata$
```

The first record you write to is RECORD #0. After that the record counter is automatically incremented by 1. |BANKWRITE takes care of where your data is placed in the file.

The program that reads your records back is this:

```
100 REM *** recalling address data ***
110 |BANKOPEN, 45 : r% = 0
120 MODE 2
```



```

130 ramdata$ = SPACE$(45)
140 INPUT "Enter the name of the person
      whose address you want >> ";n$
150 n$ = UPPER$(n$)
160 MODE 2
170 |BANKFIND, @r%,n$,0
180 IF r% <> -2 THEN 220
190 PRINT n$; " not found. Press the space
      bar to try again."
200 GOSUB 320
210 GOTO 120
220 |BANKREAD,@r%,ramdata$
230 name$ = MID$(ramdata$,1,20)
240 city$ = MID$(ramdata$,21,15)
250 tel$ = MID$(ramdata$,36,10)
260 PRINT "NAME";TAB(25);"CITY";TAB(40)
      ;"TELEPHONE"
270 PRINT"====";TAB(25);"====";TAB(40);"==
      ====="
280 PRINT name$;TAB(25);city$;TAB(40);tel$
290 PRINT : PRINT "Press the space bar to
      continue."
300 GOSUB 320
310 GOTO 120
320 a$ = INKEY$ : IF a$ <> " " THEN 320
330 RETURN
    
```

We begin by setting up our RAMfile size, return code and appropriate sized variable to place the data in, as per usual, when working with the BANK MANAGER in lines 110 - 130. You can type the name of the person

whose address you require in line 140. To be consistent with the data, it is capitalised in line 150.

I use the |BANKFIND command to search for the person's name from RECORD #0 onwards in line 170. The ,0 at the end ensures it searches from RECORD #0. The computer will find the first occurrence of the name only.

To recap, |BANKFIND, will use your string, n\$, to match SMITH or SMYTHE or SMETHERS etc, whichever name comes first in the RAMfile. This particular program is not set up to seek all matching data. Once the first match is found the computer will report that match and cease searching. If the computer uses 'SM' to match SMITH when you required SMETHERS then you will have to be more specific with the name you originally enter.

If no match is found then the return code, r%, will hold -2. Line 180 traps this result and lets you know that no match is found. A 'PRESS THE SPACE BAR' routine in lines 320

and 330 hold the result before taking you back for another try.

If the result is not -2 then r% holds the record number of the name and address you are seeking. The computer selects this record as the current record. |BANKREAD in line 220 will read the data from the current record into ramdata\$. Lines 230 to 250 will pull the string apart and place the appropriate sections into name\$, city\$ and tel\$.

Again, a 'PRESS THE SPACE BAR ROUTINE' holds the result on the screen until you are ready to go on.

These programs aren't too brilliant but serve a teaching purpose. They can be modified to add more data to the string (max of 255 characters) and to scan for more than just the first occurrence of a name.

By modifying and using the techniques of the BANKPART program in the previous articles you could scan for cities of residence and telephone numbers by only typing in part or all of the field.

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GALLIMAUFREY XII

While your cursor is flashing you can type in the Data Saver, and then use the Data Saver to type in the Double height Characters program.

FLASHING CURSOR

by Ian Jardine

This program creates a binary file RSXFCLUR.BIN and when run provides a flashing cursor routine like some word processors, making the cursor more visible on the screen. This is particularly useful in Mode 2 with a screen full of text.

The Basic loader program pokes the Machine code routine into memory and then saves the code as a Binary file RSXFCLUR.BIN. The binary file can be loaded on its own or by adding the necessary commands to any Basic program requiring a flashing cursor.

The commands - LOAD"RSXFCLUR.BIN":CALL &BECA - will load the Binary file into memory and initialise the code, providing a Resident System Extension (RSX), which gives the following commands:

- |FLASH - Provides a flashing cursor at the default flash rate of 1 cycle per second.
- |FLASH,n - Provides a flashing cursor at a rate determined by the parameter *n*, where *n* can be between 1 and 255. This will provide a flash of *n* multiplied by 0.04 seconds.
- |FLASH,0 - Turns the flashing cursor routine off and reverts to a normal steady cursor.

The routine resides in memory from &BE80 upward. This area is used by CP/M for the BIOS Extended Jumpblock, but is unused under Amsdos, and provides an ideal place to store short routines. The only danger is if the stack overwrites the routine. With programs using normal levels of subroutine calls this is unlikely to happen. Another advantage of loading the code in this location is that this area of memory is not written to after a system reset, so although the RSX will be lost and the cursor set to normal, the routine can be re-started by CALLING &BECA to re-initialise the RSX. When the routine is first initialised, the RSX is set up and an Event block is set up to flash the cursor via a Ticker interrupt.

When the command |FLASH is used, the routine is called, and a Ticker Header block is set up using any parameter passed (1 to 255), to set an initial count and recharge value. If no parameter is passed, an initial count and recharge value of 25 is set. (This gives a cursor rate of 1 per second). The routine then adds the ticker block to the machine's Ticker interrupt list and returns to Basic. If a parameter of zero is passed, then the ticker interrupt list and the cursor ceases to flash.

When a Ticker interrupt occurs every 1/50th of a second, the count held in the Ticker block is decremented. When the count reaches zero, the count is reset from the recharge value, and the flashing cursor is called. Thus if the count is set to 10, the routine will be called every tenth Ticker interrupt, or 5 times a second.

```

100 ' Flashing Cursor
110 ' by Ian Jardine
120 ' The Amstrad User, August 1988.
130 '
140 ' Flashing cursor interrupt routine
150 ' v1.0 By Ian Jardine - May 1988
160 ' Basic Loader creates M/Code File RSXFCLUR.BIN
170 '
180 ' Place the following code at the start of any Basic
   program using this routine... 10 LOAD"RSX
FLCUR.BIN":CALL &BECA
190 ' To re-enable this routine after a reset - CALL &B
ECA
200 '
210 MODE 2:PRINT"Creating file RSXFCLUR.BIN - Please wa
it...":PRINT
220 addr=&BE80:' Hide it below the Stack
230 check=0:chsum=0:lnum=320' Set pointers
240 READ byte$' Read first byte
250 WHILE byte$<>"END"
260 byte=VAL("&"+byte$):POKE addr,byte' Load byte into
   memory
270 check=check+byte:addr=addr+1:READ byte$' Increment
   & read next byte
280 IF LEFT$(byte$,1)=""THEN GOSUB 360' Checksum
290 WEND
300 IF chsum=0 THEN END
310 CALL &BECA
320 PRINT:PRINT"Process completed... Binary file RSXFL
CUR.BIN has been saved."
330 PRINT
340 END
350 REM ** Checksum
360 chsum=VAL(byte$)
370 IF check<>chsum THEN CLS:PRINT"DATA ERROR in Line"l
num:chsum=0
380 check=0:lnum=lnum+10:IF chsum<>0 THEN READ byte$ EL
SE byte$="END"
390 RETURN

```



```

400 REM ** Data for M/Code routine
410 DATA FE,01,28,04,3E,19,18,06,DD,7E,00,B7,28,0B,21,0
D,&4C3
420 DATA BE,4F,06,00,50,59,C3,E9,BC,21,BD,BE,C3,EC,BC,3
A,&865
430 DATA BC,BE,EE,01,32,BC,BE,CA,7B,BB,C3,7E,BB,00,00,0
0,&811
440 DATA 00,B6,BE,C3,80,BE,46,4C,41,53,C8,00,00,00,00,0
0,&563
450 DATA 00,00,00,00,00,00,00,00,00,00,21,C3,BE,01,00,B
1,&224
460 DATA 11,9F,BE,CD,EF,BC,01,B1,BE,21,AD,BE,C3,D1,BC,&
932
470 DATA END

```

DATA SAVER

by Mark Nelson

From time to time we may present you with a listing in *The Amstrad User* which has a large amount of DATA lines to type in. To many it may seem rather a daunting task faced with such a large quantity of characters. It is easy to lose one's place and certainly a breeding ground for bugs. This listing will make the chore a little easier. It is not very user-friendly, however it works well and any better methods of presentation can be left up to you. On execution, the program presents you with some brief instructions. The rest is up to you.

```

100 ' DATA Input Program
110 ' by MANTIS 87. (SuperBug!)
120 ' The Amstrad User, August 1988.
130 '
140 KEY 138, ",",:KEY 140,"mode 2:ink 0,0:ink 1,13:border
0:paper 0:pen 1:list"+CHR$(13)
150 ' Mantis symbol (254,255)
160 FOR x=&A6EC TO &A6FB:READ a$:POKE x,VAL("&"+a$):NEX
T
170 DATA 00,00,FF,7F,05,09,12,24,77,1C,88,C8,40,7E,01,3
E
180 ' Instructions
190 MODE 1:INK 0,0:INK 1,13:BORDER 0:PAPER 0:PEN 1:CLEA
R
200 PRINT TAB(11);CHR$(254);CHR$(255);" MANTIS DATA INP
UT":PRINT
210 PRINT" This program allows you to type in datastate
ments from a magazine listing and save it as 'DATA.DAT
'. The file can be merged with your own programs to re
ad the data in."
220 PRINT"Start off by answering the questions, then
type in the data. Line numbers are incremented by 10 pl
us 'DATA' and commas are automatically inserted. When ty
ping
230 PRINT"Hex numbers, a 'E' will be changed to '0E'
to keep things tidy. Pressing Enter gives you '00' (Hex)
or '0' (Dec).
240 PRINT"At the end of each line, the computer will
beep to let you know it's keeping up. The checksum will
also be printed at this stage. Press Enter for the mic
ro's choice or enter your own. (The computer should usu
ally be right)
250 PRINT"Enter '***' to finish early. (The line you a
re on will be wiped. Finish on the next line if you're
unsure.)
260 PRINT:PRINT"Press any key"
270 WHILE INKEY$(">"):"":WEND:WHILE INKEY$="" :WEND
280 ' Enter variables
290 MODE 2:INPUT"First Line Number:",st:x=st-10
300 INPUT"Last Line Number:",Ln:dn=(Ln-st)/10
310 DIM Ln$(dn+1),Ln2$(dn+1):dt=0
320 INPUT"How many numbers per line? (Not counting chec
ksum):",nm
330 INPUT"In (H)ex or (D)ecimal: ";hd$:hd$=UPPER$(hd$)
340 IF hd$="D" THEN hx1=0 ELSE hx1=1
350 INPUT"Do you want a Checksum? (Y/N):",a$:a$=UPPER$(
a$)
360 IF a$="Y" THEN chk=1 ELSE chk=0:GOTO 390
370 INPUT"In (H)ex or (D)ecimal: ";hd$:hd$=UPPER$(hd$)
380 IF hd$="D" THEN hx2=0 ELSE hx2=1
390 MODE 2:WINDOW 1,80,25,25:WINDOW#1,1,80,1,23
400 ' Input data
410 WHILE x<Ln AND a$(">")***":x=x+10:tt=0:cr=0
420 PRINT#1,x;"data ";
430 Ln$(dt)=Ln$(dt)+STR$(x)+" data "
440 FOR y=1 TO nm
450 INPUT"DATA>",a$:IF hx1=0 THEN 470
460 IF a$="" THEN a$="00" ELSE IF LEN(a$)<2 THEN a$="0"
+a$
470 a$=UPPER$(a$):IF a$="" THEN a$="0" ELSE IF a$="***"
THEN y=nm+1:dn=dt-1:Ln$(dt)="":GOTO 500
480 PRINT#1,a$,";":IF chk=0 THEN 500
490 IF hx1=1 THEN tt=tt+VAL("&"+a$) ELSE IF hx1=0 THEN
tt=tt+VAL(a$)
500 Ln$(dt)=Ln$(dt)+a$+"",
510 NEXT:cr=1
520 PRINT CHR$(7);:IF chk=0 THEN Ln$(dt)=LEFT$(Ln$(dt),
LEN(Ln$(dt))-1):PRINT#1:GOTO 570
530 PRINT"Checksum :Dec. ";tt;":Hex. &"HEX$(tt);:INPUT"
: ",a$
540 IF a$="" AND hx2=1 THEN a$=" "+HEX$(tt,4) ELSE IF a
$="" AND hx2=0 THEN a$=STR$(tt) ELSE a$=" "+a$
550 PRINT#1,a$
560 Ln$(dt)=Ln$(dt)+a$
570 Ln2$(dt)=Ln$(dt):dt=dt+1
580 WEND
590 MODE 2:INPUT"Keep the Data ";a$:IF UPPER$(LEFT$(a$,

```



```

1))="N" THEN RUN
600 INPUT"Send data to (S)creen, (P)rinter, (D)isc or (
A)dd to, (C)hange data:",a$:IF a$="" THEN 590
610 a=INSTR("DPSAC",UPPER$(a$))
620 ON a GOTO 650,720,770,830,910
630 GOTO 590
640 ' Save to disc
650 OPENOUT"data.dat
660 FOR z=0 TO dn
670 PRINT#9,Ln$(z)
680 NEXT
690 CLOSEOUT
700 GOTO 590
710 ' Print data to printer
720 FOR z=0 TO dn
730 PRINT#8,Ln$(z)
740 NEXT
750 GOTO 590
760 ' Print data to screen
770 FOR z=0 TO dn
780 PRINT Ln$(z)
790 NEXT
800 WHILE INKEY$="" :WEND
810 GOTO 600
820 ' Add data
830 MODE 2:INPUT"Last line:",Ln:dn=(Ln-st)/10
840 ERASE Ln$:IF cr=0 THEN x=x-10
850 DIM Ln$(dn+1)
860 FOR z=0 TO dt:Ln$(z)=Ln2$(z):NEXT
870 ERASE Ln2$:DIM Ln2$(dn+1)
880 FOR z=0 TO dt:Ln2$(z)=Ln$(z):NEXT
890 MODE 2:WINDOW 1,80,25,25:WINDOW#1,1,80,1,23:GOTO 41
0
900 ' Find line
910 INPUT"Which line ? (Enter to abort):",wL$:IF wL$=""
THEN 590
920 FOR z=0 TO dn:IF MID$(Ln$(z),2,LEN(wL$))=wL$ THEN w
L=z:z=dn
930 NEXT
940 ' Change last line
950 MODE 2:PRINT"Use Copy Key. Enter to abort":PRINT:PR
INT Ln$(wL):PRINT
960 PRINT LEFT$(Ln$(wL),LEN(wL$)+7);
970 Ln$(wL)=LEFT$(Ln$(wL),LEN(wL$)+7)
980 LINE INPUT"",a$:IF a$="" THEN Ln$(wL)=Ln2$(wL):GOTO
590
990 Ln$(wL)=Ln$(wL)+a$
1000 CLS:PRINT Ln$(wL):PRINT:INPUT"Correct ";y$:IF UPPE
R$(y$)<>"Y" THEN Ln$(wL)=Ln2$(wL):GOTO 600
1010 Ln2$(wL)=Ln$(wL):GOTO 600

```

DOUBLE HEIGHT CHARACTERS

by Carl Allen

Over the past few years we have published many double height character routines, however this one has to be the best. It's fast and is easy to execute. After running the program by typing PRINT CHR\$(254) you will put the computer into double height mode. Your first indication of that is that the Ready prompt is in double height.

If you start typing characters they appear in normal size, if you ask the computer to print something on the screen, ie. PRINT"HELLO THERE", it will appear in double, as well as the Ready prompt. If you wish to see a listing of your program it will also print it in double height. To turn this double height effect off, you simple type PRINT CHR\$(255).

```

100 ' Double Height Letter Program
110 ' by Carl Allen (c) 1986
120 ' The Amstrad User, August 1988.
130 '
140 MEMORY 41999
150 FOR i=42000 TO 42189:READ a$:v=VAL("&"+a$):csum=c
sum+v:POKE i,v:NEXT i
160 CALL 42000:PRINT CHR$(255):RUN"arprog"
170 DATA 2a,5b,bb,22,e1,a4,21,27,a4,22,5b,bb,3e,c3,32,
5a,bb,3e,cf,32
180 DATA e0,a4,c9,f5,e5,d5,c5,32,e4,a4,fe,20,38,35,fe,
ff,20,07,3e,00
190 DATA 32,e3,a4,18,25,fe,fe,20,07,3e,ff,32,e3,a4,18,
1a,3a,e3,a4,fe
200 DATA 00,28,08,3a,e4,a4,cd,79,a4,18,0b,c1,d1,e1,f1,
3a,e4,a4,cd,e0
210 DATA a4,c9,c1,d1,e1,f1,c9,fe,0a,20,ec,3a,e3,a4,fe,0
0,28,e5,3e,0a
220 DATA cd,e0,a4,18,de,47,cd,a4,a4,cd,78,bb,cd,87,bb,2
2,ce,a4,7d,fe
230 DATA 01,20,04,2c,22,ce,a4,2d,cd,75,bb,3e,fe,cd,5d,b
b,2a,ce,a4,cd
240 DATA 75,bb,3e,ff,cd,e0,a4,c9,cd,06,b9,f5,78,cd,a5,b
b,06,08,11,d0
250 DATA a4,7e,12,13,12,23,13,10,f8,f1,cd,0c,b9,3e,fe,2
1,d0,a4,cd,a8
260 DATA bb,3e,ff,21,d8,a4,cd,a8,bb,c9

```

**Did you know that your type-ins
could win you a Printer
or a Disc Drive?**

Turn to page 39 for details.

MOTOS

Stephen Basford had a poke in the June mag., but unfortunately part of the listing disappeared. This is a modified version sent in by Stephen that has some added features. You can have as many lives as you like or make them infinite, infinite power, infinite jumps and by pressing the Esc key you can jump levels. Press Esc again and then die to jump to the next level. It's entered using Method 1.

```
1 ' Motos - tape
2 ' by S. Basford
3 ' The Amstrad User, August 88
10 MODE 1
20 FOR c=&BE80 TO &BEC7
30 READ h$:d=VAL("&" + h$)
40 POKE c,d:tot=tot+d:next
50 IF tot<>5680 then 400
60 INPUT "No of lives: ";v
70 INPUT "Inf. Lives [Y/N]";a$
80 INPUT "Inf. Power [Y/N]";b$
90 INPUT "Inf. Jumps [Y/N]";c$
100 INPUT "ESC level [Y/N]";d$
110 POKE &be97,v
120 IF a$="n" THEN POKE &BE9C,
61
130 IF b$="n" THEN POKE &BEA1,
```

```
144
140 IF c$="n" THEN POKE &BEA6,
144
150 IF d$="n" THEN POKE &BEAB,
209
160 IF d$="n" THEN POKE &BEAC,
30
170 CLS:PRINT"Loading..."
180 CALL &BE80
190 DATA 21,00,40,11,be,37
200 DATA 3e,16,cd,a1,bc,30
210 DATA f3,21,96,be,22,24
220 DATA 40,c3,00,40,3e,05
230 DATA 32,79,0b,3e,00,32
240 DATA fb,05,3e,00,32,df
250 DATA 06,3e,00,32,ea,06
260 DATA 21,d8,06,22,60,05
270 DATA 21,be,be,11,9a,0a
280 DATA 01,0a,00,ed,b0,c3
290 DATA 00,04,53,50,42,40
300 DATA 48,41,43,4b,45,44
310 PRINT"Data Error"
320 END
```



Michael Swain has sent in this poke for infinite lives in Firebird's game. It's entered using Method 1.

```
1 ' Thrust II - tape
2 ' by Michael Swain
3 ' The Amstrad User, Aug 88
10 FOR a=&BE80 TO &BE95
20 READ d:POKE a,d:NEXT
30 CALL &BE80:RUN""
```

```
40 DATA 243,42,9,0,34,150,190,
33,143
50 DATA 190,34,9,0,251,201,245,
175,50
60 DATA 187,38,241,195
70 END
```

Peter Featherstone has sent in this poke for Mastertronic's FEUD game of wizardly combat. It gives you infinite energy and invulnerability to the herb keeper and Leanoric and is entered using Method 1.

```
1 ' Feud - tape
2 ' by Peter Featherstone
```

```
3 ' The Amstrad User, Aug 88
10 FOR f=&5a00 to &5a1e
20 READ a$
30 POKE f,VAL("&" + a$)
40 NEXT
50 CALL &5a0c
60 DATA af,32,cd,1f,3e,c9
70 DATA 32,57,0e,c3,00,04
80 DATA 21,00,50,11,4c,01
90 DATA 3e,16,cd,a1,bc,3e
100 DATA 5a,32,08,50,c3,00
110 DATA 50
120 END
```

CHEAT MODE

POKE METHODS FOR TAPE

Here is how to input the majority of Cheat Mode tape pokes. The instructions for each poke tell you which of the two different methods to use. If you have a 664 or 6128, first type 1 tape.

Method 1

Rewind the game tape to the beginning. Now type in the poke listing. Then type RUN and press the Enter key. (Don't use the key marked CTRL or Control; that would stop the poke from working.) Press the Play key on the cassette deck, then any key on the main keyboard - the spacebar will do nicely. The tape should now start to play through in the normal way.

Method 2

For this method you have to skip the first bit of the game program. To do that, start by rewinding the game tape to the beginning. Now type in the listing. Then type CAT and press Enter. Start the tape by pressing Play and then any key. Then watch the screen.

Soon you'll get the message FOUND SOMETHING BLOCK 1. It doesn't matter what the something actually is; this will vary from one game to another. If the Cheat Mode instructions just tell you to skip the first block, you should stop the tape here.

If the instructions tell you to skip several things, stop the tape when the found message comes up for the last thing you're trying to skip. Once you've stopped the tape, press Escape, type RUN and press Enter. Now press Play on the tapedeck and any key on the keyboard to start the tape running.

FREDDY HARDEST

Phil Howard has sent in this poke for Imagine's Rave game. It's entered using Method 1 and gives you infinite lives.

The password to allow access to the second part of Imagine's Rave is 897653.

```
1 ' Freddy Hardest - tape
2 ' by Phil Howard
3 ' The Amstrad User, August 88
10 DATA 00,2a,0f,bc,22,1d
20 DATA bd,21,e0,bc,36,c3
30 DATA 23,36,15,23,36,be
40 DATA c3,19,32,af,cd,1c
```

```
50 DATA bd,3a,00,be,3c,32
60 DATA 00,be,fe,02,c0,21
70 DATA 2a,be,22,5c,34,c9
80 DATA dd,21,5b,aa,11,00
90 DATA 01,cd,ea,a9,21,3
100 DATA be,22,0a,ab,c3,85
110 DATA aa,3a,7a,aa,fe,0c
120 DATA 28,0f,3e,a7,32,75
130 DATA 66,18,05,3e,a7,32
140 DATA fa,8a,c3,00,80
150 MODE 1:y=0:MEMORY &3000
160 FOR x=&BE00 TO &BE52
170 READ a$:a=VAL("&" + a$)
180 POKE x,a:y=y+a:NEXT
190 IF y<>&2003 THEN 210
200 LOAD"":CALL &BE00
210 PRINT"Data Error"
220 END
```

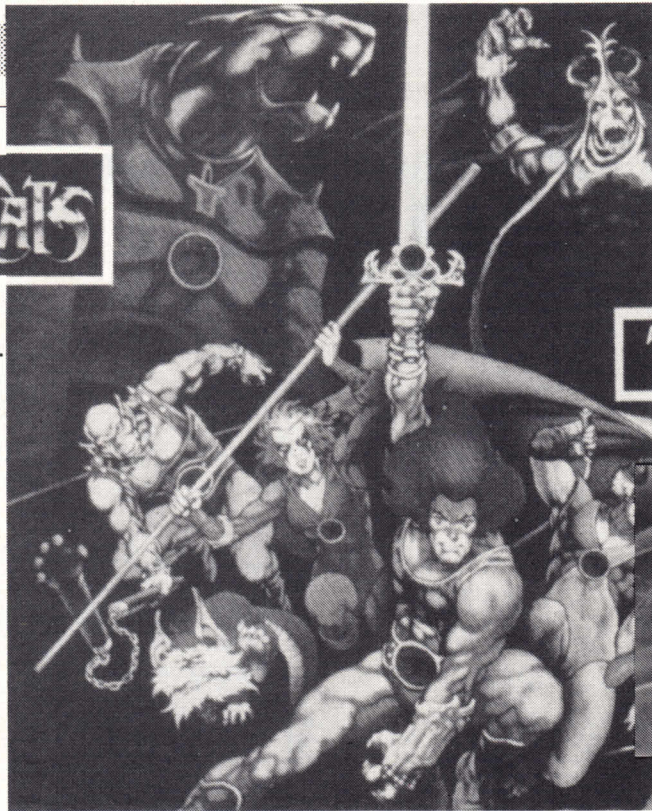

CHEAT MODE



Here's a poke for infinite lives on Elite's Rave game. Use Method 1.

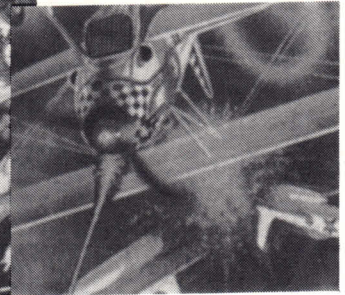
```

1 ' Thundercats - tape
2 ' by GH
3 ' The Amstrad User, August 88
10 OPENOUT!
20 MEMORY &7CF
30 CLOSEOUT
40 LOAD"tcats"
50 POKE &8E3,0
60 POKE &8E4,&BE
70 FOR n=0 TO 13:READ a$
80 POKE &BE00+n,VAL("&"a$)
90 NEXT
100 CALL &7D0
110 DATA e5,21,00,00,22,33,78
120 DATA 22,34,78,e1,c3,d6,69
130 END
    
```



Dr Destructo

Jonathan Adams has sent in a brief tip which allows you to move to the next level. Pause the game, hold down the shift key and type in "Cave Canem". From now on whenever you pause the game you can press "z" to go to the next level.



LIGHT FORCE • LIGHT FORCE • LIGHT FORCE
 LIGHT FORCE • LIGHT FORCE • LIGHT FORCE
 LIGHT FORCE • LIGHT FORCE • LIGHT FORCE

Andy Worrall has sent in this poke for FTL's shoot-em-up. It gives you extra lives and shields. It's entered using Method 1.

```

1 ' Lightforce - tape
2 ' by Andy Worrall
3 ' The Amstrad User, August 88
10 CLS
20 PRINT "Lightforce"
30 INPUT "How many lives ?","lif
40 IF lif<1 OR lif>255 THEN 10
50 CLS:PRINT"Turn on Shield ?"
60 a$=INKEY$:IF a$="" THEN 60
70 If a$="y" THEN shields=1
80 n=&40
90 POKE &80,ASC("L")
100 POKE &81,ASC("F")
    
```

```

110 READ x$:IF x$="end" THEN
140
120 POKE n,VAL("&"x$)
130 n=n+1:GOTO 110
140 POKE &58,lif
150 IF shields then POKE &62,0
160 CALL &40
170 DATA 21,80,00,06,02
180 DATA 11,30,09,cd,77
190 DATA bc,21,30,,09,cd
200 DATA ,83,bc,cd,7a,bc
210 DATA 21,85,62,36,05
220 DATA 21,c3,65,36,29
230 DATA 21,6e,6d,36,26
240 DATA 21,1c,96,11,a4
250 DATA a9,01,c,8c,ed
260 DATA b8,0e,ff,21,31
270 DATA 73,cd,16,bd,c9
280 DATA end
290 END
    
```



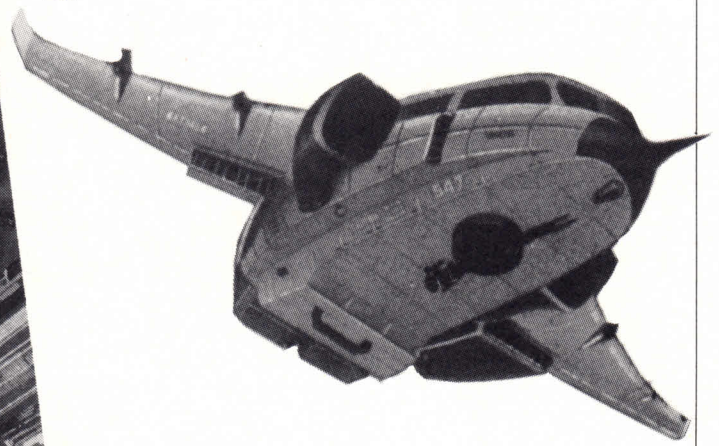
Sudo and Psycho have sent in this poke for infinite lives and invulnerability in Firebird's kill-o-zap game. It's entered using Method 1.

```

1 'Mission Genocide - tape
2 ' by Sudo and Psycho
3 ' The Amstrad User, August 88
10 MODE 0
20 MEMORY &85FF:LOAD"!",&600
30 FOR N=0 TO 12:READ A$
40 POKE &8623+N,VAL("&"A$):N
EXT
    
```

```

50 N=0
60 READ A$:IF A$="-1" THEN 90
70 POKE &BE80+N,VAL("&"A$):N
=N+1
80 GOTO 60
90 CALL &8600
100 DATA 21,80,BE,E5,21,40
110 DATA BF,11,00,00,C3,A1,BC
120 REM INFINITE LIFE
130 DATA 21,C7,A0,36,00
140 REM INVULNERABILITY
150 DATA 21,B2,A0,36,C9
160 REM LEAVE LINE 150
INTACT
170 DATA C3,2C,86,-1
180 END
    
```



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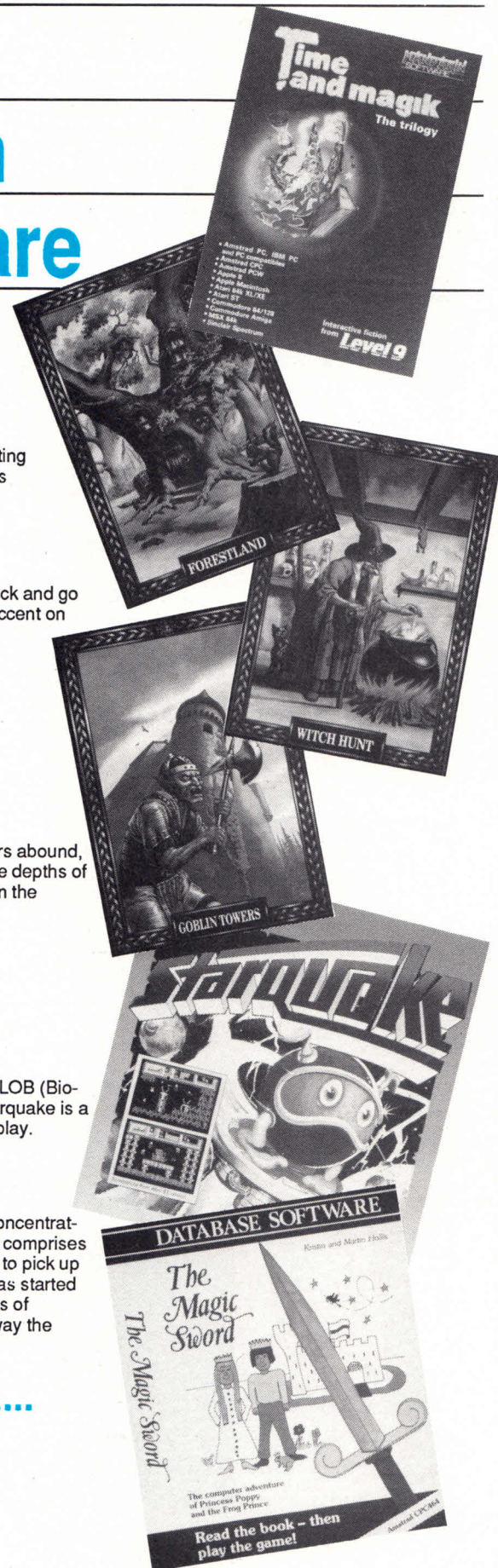
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 **Pactronics**

A MATTER OF TRIVIA

The success of Trivial Pursuit as a board game has followed through to the Amstrad screens. We look at both CPC and PCW versions.

The board game Trivial Pursuit captured the imagination of millions when it was first released a few years ago, and captured millions (of dollars) for its Canadian co-inventors. Like many successful board games, the rights to publish the game for conversion to a computer program were snapped up. In the case of the Amstrad, Oxford Digital did the programming and Domark Ltd (UK) published the result.

There are a number of versions around, with extra question and answer discs to push the limits of trivia knowledge further. These extra 3" discs are capable of being run on either the CPC or PCW. All

versions follow the original board game very closely, but there are some 'extras' which help to make the game more playable on the computer. These include a score chart and music. On the CPC version the "name that tune" type of questions are quite clear, but on the PCW with its much smaller speaker, the sound is less than perfect. But as the programmers say about the PCW - they were never designed to play music and it is probably better to have some than none at all. Blocks of questions are held on both sides of the disc supplied and the players have the opportunity to select a batch before commencing play.



A little character called TP is the master of ceremonies, and struts around the screen, tapping his foot if you don't give a quick answer. The main screen consists of the board layout. The CPC version is of course coloured, and the PCW version has different patterns to identify the various colours. The number of squares to move in a go is determined by TP throwing a dart, after which the direction of the move is controlled through the cursor keys.

The second screen is where the questions are asked and takes place in TP's lounge in front of a glowing fire. The picture is cleverly functional too. A burning candle shows how much time is left to answer the question and a clock in the corner of the room indicates the length of time the game has been in operation.

The questions are asked on a small screen which descends from the ceiling. These can be plain text with or without music and graphics. The idea is to shout the answer out aloud then hit the space bar to reveal the answer. You can cheat when playing by yourself you tell TP that you answered the question correctly (when you didn't), but do it at your own risk in a roomful of onlookers or other players!

In Australia, the PCW version is currently available in the standard Genus™ edition suitable for adults. For the CPCs there are three discs available, the Young Players version for children of 7 and upwards, the Baby Boomer version which centres questions around the 1960s and 1970s, and the standard Genus Edition. All the versions can be played either through the keyboard or by joystick. In the case of the PCW either the Kempston PCW joystick interface or the Cascade Joystick Interface will work automatically.

If you have trouble getting a copy of Trivial Pursuit, they are available through The Amstrad User (see the software list for your machine elsewhere in this issue).

The PCW was always intended as a machine for the serious minded, so the first things to go by the board at the design stage were colour graphics and sound effects. Fair enough, you say, and no great loss to many word processing fans.

DK'Tronics have made a name for themselves with hardware additions for micros, and now they are turning their attentions to enhancing the capabilities of the PCW. Their programmable joystick and sound controller allows you firstly to attach a joystick to programs that can use them, but also to generate a whole range of high quality harmonies, tunes and sound effects purely from software control.

FITTING THE CONTROLLER

The joystick sound controller unit slots onto the expansion port at the back of the PCW, and sensibly the socket has a special notch so that you can't fit it the wrong way round. Absolutely no hardware modifications have to be made to the PCW to fit the DK'Tronics controller. The unit has a through connector, which means that if you are already using the PCW expansion port for a printer interface, for example, you can still use it even with the joystick/sound controller plugged in too.

Included in the price is a loud-speaker with a standard earphone plug and a metre or so of flex, which fits into the controller. A volume control on the controller unit allows you to easily annoy the neighbours in the small hours.

On top of the controller unit is a standard D-type joystick connector. No joystick is provided in the package, although any standard one should work.

USING THE SOUND CONTROLLER

The sound controller can generate notes on up to 3 channels, so is capable of producing sophisticated chords and sound effects. A demonstration disc plays a passable rendition of Scarborough Fair, if not quite up to Simon and Garfunkel's standards. Also provided on the

SOUNDS GOOD

From the dK'Tronics (now RAM) stable, with a long association for producing peripherals of all shapes and sizes for Amstrad computers, comes a PCW Joystick and Sound interface

demonstration disc is a variety of sound effects: Big Ben chimes, explosions, ricochets and wailing bombs all provide a good start for you to base games on.

The sounds are produced in response to commands from a BASIC (or machine code) program. It follows then that to use the package for anything other than playing Scarborough Fair ad nauseum you will have to know how to program. Also a knowledge of how musical harmonies are built up will prove not inconsequential.

USING THE JOYSTICK

By contrast to the sound controller, which requires considerable skill to use, the joystick is simplicity itself. Just plug a standard joystick onto the D-connector of the unit and it works. Joysticks have five functions in life; they can go up and down, left and right, and they can fire.

Normally when you move the joystick lever to the left, the controller generates a signal much as though the left-arrow key had been pressed on the keyboard, et cetera. But more than this, the DK'Tronics unit is "programmable", which means that should you want you can change by software control which keys the joystick simulates.

A simple program supplied on the delivery disc allows you to redefine the keys without yourself knowing how to program - it just says "What key do you want the fire button to produce", and so on. These settings persist until they are

changed or the power is turned off.

SUMMING UP

For people who want to push their PCW beyond simply running business programs, the joystick and sound controller unit opens up exciting possibilities. At \$127.50, programmers will find it an exceptionally useful package, but unfortunately the manual does nothing to open up the world of PCW sound to novices.

Finally, don't forget that if you only want the programmable joystick controller, it is available separately at \$90.00.

TECHNICAL DETAILS

For those in the know, the heart of the sound controller is the AY-3-8912 3-channel programmable sound generator chip. (The same one found inside the CPC machines). It can be programmed from within Mallard BASIC by using the OUT command to send a stream of bytes of data to port numbers 170 and 171. Alternatively, machine code can be used.

For hardware fans, the manual provides a pin-out of the joystick port and some brief details on how to build your own circuits so that the joystick controller can drive them. Since the joystick port is programmable, from software control you can set almost any of the pins on the port to be high or low, thus controlling external hardware. One example provided is a driver for a 7-segment LED display.

TYPE-INS

We present two type-ins this month. The first is a classic sliding tile game to keep you occupied until the early hours. The second can be used to wake you up after your long night

SLIDE GAME

by A. King

As if you didn't spend enough time on your PCW as it is, here's the chance to while away an infinite number of hours with a simple but addictive game. It is a version of the classic sliding-square children's puzzle. You are given a series of letters in random order on sliding panels in a rectangular frame, and of course there is only one space. All you have to do is shuffle the letters into the right order.

The advantage with this computer version of the game is that you can vary the size of your rectangle up to 10 squares by 6 squares. It starts by filling up the tiles randomly with capital letters and when it runs out of those it starts on the lower case alphabet. After that it even goes on to use other vague symbols like 'f's and ' / 's. Set yourself the challenge of which order you are going to arrange the tile in - alphabetical, reverse alphabetic, making a word, whatever you like; you're only playing against yourself.

The only problem in typing the listing is in line 350 - the two ^ symbols are up arrows. By pressing [EXTRA]+U you get a ↑, the printer prints the ↑ as a ^. Once running it is simple to use; the program asks you first for a "Seed". This is an integer (a whole number from 1 to 32767) which Basic's RANDOMIZE command takes and uses to make sure you get a properly random pattern. It will then ask you for the size you want the frame to be. You just type in two numbers separated by a comma. The first can be up to 10 and the second up to 6.

After a short pause for thought the PCW displays the letters. Using the cursor keys, you move the cursor to one of the letters adjoining the space, press the space bar and the letter moves into the space.

When you have met your self-appointed challenge of

getting the tiles into the order you want, (or you want to give up!) you simply press [STOP] to get out of the program. **Be Warned** - unless you start with a simple two by two frame, you could be in for sleepless nights.

```

100 ' Slide Game
110 ' by A. King
120 ' The Amstrad User, August 1988.
130 '
140 DEFINT A-z: DIM a(10,6), c(60): e$=CHR
$(27): DEF FMat$(x,y,a$)=e$+"Y"+CHR$(32
+y)+CHR$(32+x)+a$
150 PRINT e$;"E";e$;"H": INPUT "Seed : "; a
: INPUT "Size : "; lx, ly: RANDOMIZE a
160 GOSUB 260: GOSUB 300
170 PRINT FMat$(xe#6+25, ye#4+2, e$+"p"+"
"+e$+"q")
180 a$=INKEY$: IF a$="" THEN 180: ELSE a
=ASC(a$): c=0: xm=0: ym=0
190 IF a=31 AND yp>1 THEN ym=-1
200 IF a=30 AND yp<ly THEN ym=1
210 IF a=1 AND xp>1 THEN xm=-1
220 IF a=6 AND xp<lx THEN xm=1
230 IF a=32 THEN GOSUB 340
240 GOSUB 390: PRINT FMat$(xp#6+25, yp#4+
2, a$): xp=xp+xm: yp=yp+ym
250 GOSUB 390: PRINT FMat$(xp#6+25, yp#4+
2, e$+"p"+a$+e$+"q"): GOTO 180
260 FOR j=1 TO lx*ly
270 r=INT(RND*(lx*ly)-1)+1: IF c(r) THEN
270
280 rx=INT(RND*lx)+1: ry=INT(RND*ly)+1: I
F a(rx, ry)>0 THEN 280
290 a(rx, ry)=r: c(r)=1: NEXT: RETURN
300 FOR x=1 TO lx: FOR y=1 TO ly: dx=25+x
*6: dy=2+y*4
310 IF a(x,y)=0 THEN xe=x: xp=x: ye=y: yp=
y: GOTO 330
320 PRINT FMat$(dx, dy, CHR$(a(x,y)+64))
330 NEXT: NEXT: RETURN
340 a=a(xp, yp): IF a=0 THEN PRINT CHR$(7
): RETURN
350 IF SQR((xp-xe)^2+(yp-ye)^2)>1 THEN
PRINT CHR$(7): RETURN
360 PRINT FMat$(xp#6+25, yp#4+2, " "): SWA
P xe, xp: SWAP ye, yp
370 PRINT FMat$(xp#6+25, yp#4+2, e$+"p"+C
HR$(a+64)+e$+"q"): a(xp, yp)=a: a(xe, ye)=0
380 RETURN
390 a=a(xp, yp): IF a=0 THEN a$=" " ELSE
a$=CHR$(a+64)
400 RETURN

```


PCW Year Disc #1 now available!

All the PCW Type-ins
we've published from
Issues 25 to 40
on one disc
PLUS
**FREE Public Domain
Software**

If you are a regular reader of The Amstrad User you will know what the Type-ins are all about, but you may not be familiar with the CP/M Public Domain Software. Here's a run-down:

BANNER	Prints huge signs and messages.
CHESS	A multi-level version of this challenging and classic game played against your PCW.
CPM2	Switches CP/M Plus to CP/M 2.2.
CPM2DEL	Switches back to CP/M Plus.
CRUNCH	Squeezes files
D	A disc directory program.
NULU151	A library unpacking utility.
PCWUKM7	Communications software.
UNCR	The opposite of CRUNCH.

Our thanks to the PCW Australia Group for supplying most of the above PD software and please remember, when it comes to PD software, you're on your own!

THE
AMSTRAD
USER

PCW Year Disc
Number 1

Side 1			
AUTOMENU (27)	1K	FINANCE (37)	15K
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BASICPIP (35)	1K	GRAPHS (30)	3K
BASKIT (27)	2K	GSXPREP (25)	1K
BIGTIME (36)	3K	HANDTYPE (40)	2K
BIOS (29)	2K	INDEX (32)	1K
CONNECT4 (31)	8K	INIT (39)	3K
DISLABEL (35)	1K	INVADERS (37)	2K
DIYDBASE (35)	3K	KEYFIND (36)	1K
DUCKSHOT (36)	1K	LABELS (28)	10K
EASTER (30)	1K	LDCOUNT1 (33)	2K
ENIGMA (32)	1K	LDCOUNT2 (38)	2K
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		MOVING (30)	1K
		PAGEDISP (36)	1K
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		RAFFLE (33)	1K
		SORTER1 (39)	1K
		SORTER2 (39)	1K
		SQUASH (37)	1K
		STYLER (35)	2K
		SUPER1 (25)	5K
		SUPER2 (26)	14K
		TELETYPE (37)	1K
		TWOCOLS (30)	2K
		VOCAB (38)	1K

Issue Number in brackets

Reference to the original magazines will provide more information on using the above Basic programs

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PCW PROMPT

by T. J. Rochester-Farrell

For anyone who really wants the PCW to organise their life, here is the ultimate program. You can type in your busy schedule with times when you have to do various important tasks (like 7pm. WATCH NEIGHBOURS) and then as long as you don't switch the PCW off or use it for any other purpose, the program will remind you at the correct moment.

First all you have to set the PCW clock to the right time. You can do this using the ordinary CP/M utility DATE.COM as found on your CP/M discs (type DATE [RETURN] at the A> prompt and follow the prompts).

Then run the alarm program. When prompted just type in the number of messages you require and enter the message, the hour and the minute you require for each of the alarm calls one after the other. The PCW will show the time on the screen and at the correct moment it will beep and flash away at you until you press any key. Then you will see your instructions printed on the screen. You can use messages of up to 255 characters (including spaces) so the instructions can be pretty detailed.

WHILE YOU'RE AWAY

The ultimate gimmick though is that you can use it to run programs on your PCW while you aren't there! By entering an x as your last command, instead of beeping the program pauses until the time that you specify, and at the appointed hour exits to CP/M.

If you were to write a Submit file (say called ALARM.SUB) containing first the line BASIC ALARM and then on the next line the name of any program you wanted to run in CP/M, you could set up the program to run in the middle of the night. You will need SUBMIT.COM, BASIC.COM, the CP/M program you want to run and the Basic alarm program on the disc in the drive.

Type SUBMIT ALARM. Basic will load and the alarm program will run. Type in x when asked for the message, and the time you want the next program to start. Then go away. When the correct moment arrives the alarm program closes Basic down and returns you to CP/M and the rest of the Submit file is run, ie. your CP/M program.

This might well be useful for someone wanting to use a modem in the middle of the night when the phone rates are cheaper, or just to surprise somebody late at night!

```
100 ' PCW Prompt
110 ' by T.J. Rochester-Farrell
120 ' The Amstrad User, August 1988.
130 '
140 esc$=CHR$(27):cl$=esc$+"E"+esc$+"H"
: on$=esc$+"f":PRINT cl$
```

```
150 DEF FNat$(x,y)=esc$+"Y"+CHR$(31+y)+
CHR$(31+x)
160 PRINT"          TYPE MESSAGE          ( u
p to 255 characters inc. spaces)"
170 PRINT : PRINT"          ENTER x
FOR TIME TO FINISH"
180 PRINT : PRINT"          ENT
ER TIME AS 24 HOUR" : PRINT
190 INPUT"NUMBER OF MESSAGES REQUIRED "
;n
200 FOR q=1 TO n
210 INPUT"MESSAGE ";a$(q)
220 INPUT"HOUR";h(q)
230 INPUT"MINUTE ";m(q)
240 NEXT
250 PRINT cl$
260 PRINT of$
270 FOR q=1 TO n
280 PRINT h(q)" "m(q)" "a$(q)
290 NEXT
300 FOR u=1 TO 2222 : NEXT : PRINT cl$
310 DEF FNt(x)=x-INT(x/16)*6
320 FOR t=1 TO n
330 WHILE h<>h(t) OR m<>m(t)
340 h=FNt(PEEK(64502!))
350 m=FNt(PEEK(64503!))
360 s=FNt(PEEK(64504!))
370 PRINT FNat$(5,5) h m s
380 WEND
390 IF a$(t)="x" OR a$(t)="X" THEN 480
400 WHILE INKEY$=""
410 PRINT CHR$(7)
420 OUT 247,240 : OUT 247,240
430 FOR a=1 TO 500: NEXT
440 WEND
450 PRINT FNat$(12,8+t+t)" DON'T FORGET
AT "h" "m" "s" "a$(t)
460 FOR e=1 TO 1111 : NEXT
470 NEXT t
480 PRINT on$ : SYSTEM
```

Have you written a good program lately? If so send it in. Or better still, enter it into our program competition.

Turn to page 39 for details.

PCW 8256, 8512 & 9512 SOFTWARE

Games for PCWs

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NewWord2 - only one available, was \$275.00 but now \$150.00

Tasword 8000	79.95
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-----------------	-------

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SCANNER - Master Pack - consisting of a scanning device which attaches to a PCW printer head to copy photos or other art work, Master Scan software to run it and Master Paint, a powerful graphics package. This pack is compatible with Desktop Publisher, Fleet Street Editor and Newsdesk International	279.00
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TIP-OFFS

From all the feedback we have been getting it would seem most PCW owners are stranded on a desert island with only a PCW. This month's anthology is on making LocoScript layouts

1 HARD OPTIONS

A feature of word processors is their ability to handle hard and soft characters to keep your line-breaks neat and tidy. Experienced PCW owners use them all the time and it's a good habit to get into.

Things separated by hard characters can't be split at the end of a line; for example, typing D.J. Smith near the end of a line could result in the D.J. and Smith being split if you subsequently edit the text. (*As happened*

to us). But putting a 'hard space' between the D.J. and Smith (obtained by pressing the [+] key and then the space bar) means they'll never be split.

Similarly, 'hard hyphens' ([+] and a hyphen) should be put in phrases like 'rip-off' and 'cock-up' to keep the two halves of the word on the same line. If you just put a normal hyphen you could find that editing later on gives you "rip-" at the end of one line and "off" at the beginning of the next, which can look strange.

2 SOFT OPTIONS

Soft characters only appear if a word or phrase needs to be broken over two lines - for example, the phrase:

"Calcutta/Madras/Bombay/Bangalore" is treated as one word and will be put wholly on one line, possibly leaving a huge gap on the previous line and making the layout uneven. The answer is to put soft spaces ([-] and a space) after each slash - LocoScript will then break the phrase after one of the slashes if it needs to.

Soft hyphens ([-] and a hyphen) should be put liberally into long words in all documents. Soft hyphens only appear when they are wanted; if the word fits onto one line they'll come out. So, whenever you require the services of a lengthy word, put soft hyphens in at

appropriate places: deoxyribo(soft hyphen)nucleic acid, etc. Those hyphens will only show when the word has to be split.

Normal hyphens and spaces are a mixture of soft and hard: they will always appear, but words may be split at the space or hyphen if required.

To sum up:

After *initials* put hard spaces: I V A Richards should be I(hard space)V(hard space)A(hard space)Richards.

After *slashes* put soft spaces: red/green/puce should be red/(soft space)green/(soft space)puce.

In *hyphenated phrases* put hard spaces: tip-off should be tip(hard hyphen)off.

In *long words* put soft hyphens: anthropomorphological should be anthropo(soft hyphen)morpho(soft hyphen)logical.

3 HALF-SIZE TYPE

By writing text entirely as super script seventeen pitch and selecting half line spacing you can produce a neat half-size type which is great for footnotes or the list of directors at the bottom of your business letter templates.

For footnotes, the reference number in the text is entered as [+]SR[+]B[+]P17 (which gives you the superscript and bold modes) followed by the number, then [-]SR[-]B[-]P. In LocoScript 2 you can get superscript numbers directly from the 'symbol' mode ([SHIFT]+[ALT]+[F7]) and then type the number).

For the footnotes themselves enter [+]SR[+]B[+]P17[+]LS¹/2, type the number and then [-]B, follow it with the text, and finish off with [-]SR[-]P[-]LS.

4 HEADERS & FOOTERS

A good place to experiment with LocoScript exotica is in the headers and footers of the template for your business or personal letters. In LocoScript 1 you get to the headers and footers by pressing f7=Modes (Edit header) and cursoring to the first header or footer, then f7, then f8, and select 'First page differs'. In LocoScript 2 it's f1=Actions (Documents setup) followed by f5 (Header/footer options) and the 'first page only' option. You'll also have to select 'One page document: footer first page enabled' too.

A suggested layout is below. The bullets on the address line are only obtainable in Loco 2 ([EXTRA]+M) but in Loco 1 you could try something like [+]SR[+]B.[-]SR[-]B. The footer can contain your company directors and can use the small 'footnote' type described above.

5 CENTRE TESTERS

For many applications (menus or concept programs, for example) a page full of centred lines looks very impressive. However, it can be

tedious entering the centring command ([+]**C** in Loco 1 and [+]**CE** in Loco 2) at the beginning of every line. It is easier to set a 'centre tab' in the middle of the page - then at the beginning of each new line you just hit the tab key and everything will be centred.

To set your centre tab, make a

brand new layout from the 'Layouts' menu and move the cursor to the centre of the dotted ruler line; in Loco 2, choose the relevant option from the 'tabs' menu (or press the [+]**+** key three times) and your centre tab is set. In Loco 1, press the [f5] key. Exit back to the document and off you go.

6 IN REVERSE

To clean up your screen you can set the PCW to suppress those codes - the (+**Italics**) and (+**Bolds**) - by selecting Options ([f8] Loco2, [f1] Loco1) and hitting [-]. However, you often find to your dismay that one of the codes to turn italics off has been missed out somewhere, making the rest of the text come out italicised too. A neat solution is to set up a phrase (under I, say) consisting of [+]**I**[+]**RV** and one under J containing [-]**I**[-]**RV**. Whenever you want to put a phrase into italics, press [PASTE]**I**, and to turn it off [PASTE]**J**. It's just as quick as the usual method of [+]**I** and [-]**I** but makes all italic text highlighted, so you can't fail to spot any mistakes. A similar procedure could be used for setting and cancelling bold commands.

7 UNDERLINING

Using [+]**UL** and [-]**UL** with your headings makes the underline very close to the letters; you can produce a line slightly lower down as follows.

At the start of the heading text turn the 'codes' off on the options menu ([f8] Loco2, [f1] Loco1) and type [+]**LS**¹/₂[+]**LP**8. Then type the heading, hit return, and move the cursor underneath the beginning of the heading.

Enter [+]**LS**1[+]**UL**, press space until the line is as long as the heading, type [+]**JUL**[-]**LP** and carry on with the main text.

Instead of [+]**UL**, spaces, and [-]**JUL** you can substitute [+]**JSB** (for subscripts), then equals signs (or asterisks or any of LocoScript 2's exotic characters) and [-]**JSB** for a variety of effects.

8 LOCOSCRIPT2 LAYOUTS

Owners of LocoScript 2 have a couple of sneaky shortcuts open to them when setting up layouts. The first involves tabs.

When you are editing layouts the officially approved method of setting up tabs is to press the 'f3=Tabs' key to get a menu showing Simple, Right, Centre or Decimal tab. Then use the cursor keys and [ENTER] to pick the one you want. However, instead of using the menu at all you can just put the cursor at the column on the layout where the tab is to be and press the [+]**+** key. Press [+]**+** once for a Simple tab, twice for a Right, three times for a Centre and four for a Decimal.

The second is for setting the margins. Normally you would put the cursor at the position where the left or right margin is to be moved to and use the menus to shift the margin. Instead, put the cursor right on the current margin position and use the [+]**+** and [-]**-** keys. Pressing [+]**+** moves the margin rightwards, and [-]**-** moves it leftwards one column at a time. The margin will keep on moving as long as you keep the [+]**+** or [-]**-** key held down.

(More Tip-Offs please - Ed)

UPDATE INFORMATION FOR LOCOSCRIPT II USERS

We are pleased to advise that following negotiations with Locomotive Software in England, we have been given permission to provide upgrades of LocoMail or LocoSpell for LocoScript 2 users who have LocoScript 1 compatible copies. In addition we can also provide updates to LocoScript 2. The current version being offered is 2.16. Please note that this particular update service is for existing LocoScript 2 owners only. If you have LocoScript 1 and want to upgrade to Loco 2, you will need to purchase the new software package (current price \$75.00).

To obtain your upgrade or update to each piece of software you must do the following:

1. Locate your **original** disc - not a back-up.
2. Place in a padded post bag, enclosing a cheque or

money order for \$18.50 for each disc being returned (or quote your Bankcard, Mastercard or Visa credit card number and expiry date).

3. Include a note of your name and address to which the upgrade or update is to be sent and the item or items you are returning for upgrade or update.

4. Seal the packet, write your name and address on the reverse side and send by CERTIFIED MAIL to:

**Locomotive Upgrades
The Amstrad User
1/245 Springvale Road
Glen Waverley
Vic 3150**

PLEASE NOTE: Returning your **original** disc provides proof of purchase. Under no circumstances will we provide upgrades or updates on copies or your own blank discs. Your original disc(s) will be returned to Locomotive Software in Surrey, England along with your name and address for registration purposes.

The cost of upgrading either LocoSpell or LocoMail is \$18.50 each. The cost for updating LocoScript 2 is also \$18.50.

DIY DESKTOP PUBLISHING - 2

Rob Ainsley continues looking at desktop publishing with a few thoughts on layout style

So you've decided to start your own DTP production. But between having the bright idea for a parish magazine or club newsletter and getting the printed copies in your hand is a lot of hard work. Even worse, there's a lot of hard thinking to be done.

First, you need to work out the 'look' of the thing. The more columns per page, for example, the more newsy the publication looks;

two or three is an ideal balance for most PCW productions between legible and being newsy.

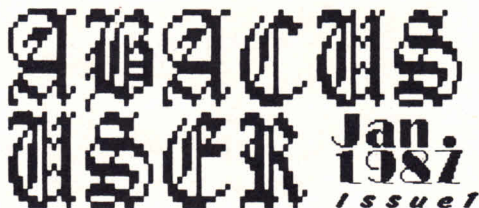
The title of your publication is obviously important - one to three word titles ('The Llama User') are often snappier than long ones ('Putting Your Llama to Work') and anyway a title longer than three words may end up looking cramped. The problem with DTP programs is that none of them have

fonts smooth enough at very large sizes to use for a headline - you could commission a handmade one from an artistic friend, but your best bet may be to get some letraset rubdown lettering from a newsagent and make up the title with that. You can always re-use it next time, of course. A scruffy title is a great way to make a newsletter look cheap and nasty.

IT PAYS TO ADVERTISE

Every publication has to be carefully targetted to its market to succeed, whether financially or otherwise.

Advertising is a smart way to finance yourself; you could do a mock up of your publication (a typical front page with a big news story and a 'you can advertise here' box, perhaps) and tout for business round a few shops and businesses taking your dummy issue or 'media pack' with you. For your Westwang News, you could call on all the local shops; for your Llama Breeder's Monthly, you would have more success with specialist Llama-orientated businesses, which would



← An example of a bad layout - if you use too many fonts and images the message of the actual text gets lost.

hello there!

Welcome to Abacus User from Verybiggler Publications, the new independent newsletter for the world of the abacus! Inside you'll find lavish praise and sycophantic reviews of a host of products, all made by us. Read on!

Inside

IN THIS MONTH'S Abacus User we review Verybiggler Productions' sensational new frictionless balls, and the amazing new teflon wires.

Also we answer some queries and print a lot of letters made up by our own staff all praising our own products.

There's also a seasonal review of some dreadful product which we have had to print just to put a stop to all the turgid press releases we keep getting about it. (continued on page 94)

This issue of ABACUS USER was designed, written, edited, typeset, conceived, performed, fabricated and cobbled together by: Verybiggler Publications Misrepresentation House Refs RA1 187

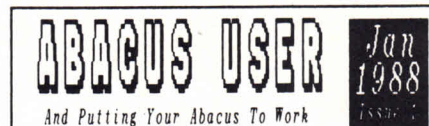
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The world of the abacus

Notice

Abacus User is an independent publication and has nothing at all to do with anything. While the entire staff (well, both of them) make great efforts to ensure that everything they write is sycophantic and will please our advertisers, they nevertheless cannot (continued page 94)



Hello there!

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IN THIS MONTH'S Abacus User we review Verybiggler Productions' sensational new frictionless balls, and the amazing new teflon wires.

Also we answer some queries and print a lot of letters made up by our own staff all praising our own products.

There's also a seasonal review of some dreadful product which we have had to print just to put a stop to all the turgid press releases we keep getting about it.

There's also a lot of boring adverts, all amazingly enough for products made by us, and a bunch of embarrassingly bad cartoons - all using puns on the word 'balls', 'beads', and a lot of racial references to the Japanese scrobban.

We also have included some four hundred line abacus listings for you to try with only a few typing errors and most of the lines on the page.

Abacus User is an independent publication and has nothing at all to do with anything. While the entire staff (well, both of them) make great efforts to ensure that everything they write is sycophantic and will please our advertisers, they nevertheless cannot accept responsibility for misprints, inaccuracies, or, OK then, fibs or lies.

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be further afield including mail order advertisers all around the country. If there are any rival publications around, see what adverts they carry and try to persuade the advertisers in question to support you instead.

The production time could be anything from overnight to months and months. As a rough guide, if you are familiar with your DTP program, and you have your articles (and digitised or scanned pictures if using them) already on disc somewhere, and have your black and white photos ready for screening, you could lay out and print out your master pages in something like an hour or two each. An average small newsletter of, say, eight A4 pages reduced to two folded sheets of A4 could be done in a hectic weekend - if the material (except last minute news) was all on disc already.

SUB STANDARD

It's great to be able to farm material to your roving reporters, but you'll probably still have to type in and 'sub' the articles yourself, which can end up being more tedious than writing the thing yourself in the first place! If you're lucky, you might have other PCW owners writing for you who can provide their articles on disc. Sub-editing material written by someone else can stretch from checking through for typing errors, to rewriting the whole article to be consistent with the style of publication.

Getting your text to fit the available space is never easy. You mark out the area on the page layout plan of your DTP program until the thing fits into the box it's supposed to, but if this involves major changes it can be tedious.

In fact, this is an important point when deciding which DTP package to buy. As you know, the four packages available are NewsDesk International (from Electric Studio), Fleet Street Editor Plus (Mirrosoft), The DeskTop Publisher (Database Software) and Stop Press (AMS). Of the four, NewsDesk and Stop Press

are very 'graphics orientated' and don't allow you to edit the text once it has been placed on the page. To edit with these you have to erase the entire article from the page, go back to a word processor and edit the file, go back to the DTP program and re-insert the modified article, hoping it now fits, so if you enjoy fine tuning text on the page and trimming phrasing to fit these won't suit you. Fleet Street and The DeskTop Publisher do however allow you to do this on screen editing of text to fit the space available.

The only real answer is experience - you quickly get to know how much space x words will take up and can make major changes to the original article while editing back in LocoScript. When it's approximately the right length you can then organise it into your DTP program. As a rough guide, a two-column A4 page with a couple of headlines and one small graphic will have around 400 hundred words. Unfortunately there's no word counter in LocoScript, (we have published a couple in The Amstrad User which will do this) or alternatively you could use LocoSpell. All serious Desk Top Publishers should use some kind of spell checker.

Before you do commit the text to a box in your DTP program, it's a good idea to print it out in draft quality and check for howles. What the eye can miss on screen that is blindingly obvious in black and white is amazing. It's better to proof read text at the word processing stage before you actually print out the master DTPed page - these are notoriously slow to print out in high quality and it's frustrating to have to do it all over again just because you missed out a word.

LOOK GOOD

There are a few common sense points about the overall look of the pages. Stories should be split up into short paragraphs of 50-100 words and every few paragraphs there should be those cross-headings so beloved of the tabloids;

without these, large expanses of text can be very hard on the eye. Mixing more than one or at most two different fonts on a page can end up looking like a real mess; 'clip art' graphics should be used sparingly, no more than a couple per page, and they look horrible when enlarged; that 'oldie worlde' Gothic script that all the font packages boast should only be used for grave subjects, and if used in an all uppercase headline it looks wrong. Reversed-out blocks (white letters in a solid black box) can provide contrast effectively. In general, variety in headlines is more effectively achieved by using different styles and sizes of a single font (italic, bold) than by different fonts. If you take a good look through the pages of The Amstrad User, you will notice only 3 different fonts are used (excluding ads.). Narrow Helvetica for the headings (stretched or normal), Helvetica for the listings (the ones not done on the dot matrix printer), and Palatino for all other text.

If you do see a fatal mistake on the master just as you set off for the printers, you can do a 'patch' - for example, if you realise with horror you've put "We're pleased to say Father brown is not recovering" instead of "...now recovering" the quickest way to rectify it is to print out the word 'now' separately, cut it out and paste it very firmly over the offending word. (When ever you see single words or lines apparently askew in magazines or papers they've probably been patched over some horrendous error underneath. Unfortunately the more embarrassing the error, the more likely the patch is to fall off. *That's why we don't use that method - Ed.*)

Eventually you can take your masters to the printers and in a couple of days you should have your opus back. Distribution is another matter completely - club newsletters could be mailed, company or community newsletters delivered by hand, and parish magazines sold or given away in local shops.

NOVEL IDEAS

Lisa Eveleigh has some sound advice for budding authors culled from her experience as a literary agent.

Everybody has at least one novel inside them, so the saying goes - with the advent of word processors in general and the PCW in particular many people are having a go at bringing that novel out. Writing a book is an exciting prospect, particularly if it is to be your first, but if you don't get the basic approach right you could be in for frustration and heartache.

It seemed only fair to write this article on a word processor, so having created, named and entered a file I am imagining myself as a writer of fiction. Unfortunately it is all too easy to do just that, because we've all seen Hollywood's version of the Writer at Work. A romantically undernourished individual is struggling in isolation with his craft.

The props are an ancient and venerable typewriter or fountain pen. An overflowing ashtray and waste paper basket speak volumes. After days and nights of torment, our hero delivers his manuscript, gets the girl and wins the Nobel prize for literature. It's a common fantasy and a compelling one because it does seem within the bounds of possibility. You don't have to be young, fit or beautiful to do it and no teamwork is required. Writing is something you do by yourself, for which life itself is the only training.

Substituting a screen for the traditional blank sheet of paper hasn't made much difference to the nitty gritty of writing. The new technology can of course make the painful

process of editing less messy, but it can't write the book for you. One of the things that amazed me when I started to work in publishing was quite how many people can and do find from somewhere the sheer stamina, discipline and dedication to sit down and complete a novel, often whilst doing full-time jobs and bringing up families. They quite rightly feel an enormous sense of personal achievement and are depressed and sometimes infuriated when they receive a 'no'.

Undoubtedly some of the disappointment and frustration could be avoided if writers spent more time studying the market. Publishing is an industry like any other and financial considerations rank very high on an editor's list of priorities. Publishers have to cost books and have a very clear idea how many they will be able to sell before they can enter into a contract with an author, so it is logical to present them with something that they can see a market for. This doesn't mean that the only books which stand a hope in hell are by Jeffrey Archer, Judith Krantz or others in the teeth, tits and trinkets department. These books sell, and they make enough money for their publishers to be able to afford to back less blatantly commercial novels, therefore keeping the industry healthily diverse. But by careful study of bookshop shelves it is possible to see likely avenues for your particular talents and the publishers most likely to be receptive to your work. Writers often consistently approach the wrong publisher precisely because they haven't done this kind of homework, and finding no joy, may give up entirely.

It is also very important to read. This may seem to be stating the obvious, but unless you have acquainted yourself with the best of every kind of fiction you cannot hope to succeed; and it would be tragic to find that your idea has been brilliantly executed by A.N. Other. Careful reading can also teach you how to construct a plot and cope with time-jumps.

WRITING NON-FICTION

For non-fiction writers or dramatists there are slightly different procedures. A publisher looking for a new book on a particular subject will initially approach known experts in the field who have recently had an article published in a journal, or have been discussing their work on television. If they are able and willing to write a book the publisher will then commission them to do so, and will make a contract on the basis that they will be paid usually one-third of their advance on signature of their contract, to cover their research expenses. The rest is paid on delivery and publication. But how do you interest a publisher in your idea if they haven't heard of you? The preliminary letter should accompany an outline of the book you have in mind, give the sources of the research material you hope to use, indicate how long you think it would take you to write, and show why you are particularly well-equipped to write the book.

Playwrights should send a preliminary letter to either the theatre of their choice - or to an agent - briefly outlining the themes of the play and enclosing a curriculum vitae. You may then be asked to send either the whole play or a section from it, and it is vitally important that you present this in the accepted form. One side only of A4 paper again, but names of characters should be typed in capital letters, and double space each speech from the previous one. Double space the stage directions from the dialogue but single space the lines of the stage directions themselves.

SECRET AGENTS

Alternatively writers may choose to use the services of a literary agent instead of approaching publishers themselves. You will find both agents and publishers listed alphabetically in "The Writers' and Artists' Yearbook", a copy of which will be in your local library. Published annually, this is an invaluable general reference book. You can also contact the Australian Book Publishers Association in Sydney who have a directory of members.

A good literary agent will know which publishers are looking for what kind of books and will have wide experience of the industry as a whole. Authors fortunate enough to be offered a contract and dealing with publishers for the first time frequently don't know whether terms they have been offered - advances, royalties, percentages of sub-rights - are reasonable or whether to ask for more. If an agent agrees to represent you, they will hope to place your book with the most suitable publisher for you, obtain a realistic advance, negotiate a fair contract and ensure that your advance and royalties are paid promptly and in full. Not surprisingly, writers are increasingly sending manuscripts directly to agents. So it is fair to say that for the unpublished writer, the same guidelines apply whether approaching an agent or publisher. Agents only charge a fee when they sell a book. Commissions can vary from ten per cent, to twenty per cent in the case of foreign sales.

WAIT A MINUTE Mr. POSTMAN

However proud you are of your lengthy printout, it will make the waiting less agonising if you resist the temptation to parcel it up and send it off in its entirety. How do you make the first approach? Publishers and agents much prefer to see a preliminary letter accompanied by a brief synopsis, which should say something about the style of the novel and give the plot.

This should be written with care, as it is possible to tell a good deal

about the writer from such a letter; your aim should be to intrigue the readers and make them want to know more. Try to avoid saying that your prose style compares favourably with Hemingway's, that your mother thinks your book is great, or that since Conan Doyle didn't fully understand Sherlock Holmes you feel you must correct this by re-writing his works with more care and insight (I recently gagged over that one). It is only courteous to enclose a stamped addressed envelope, which also serves to prompt a speedy reply.

If your letter has been successful and you have found a receptive publisher or agent they will ask to see either some sample chapters or the whole book. Writers frequently don't believe that you can appreciate the scope of their novel from the first three chapters and are a trifle testy if asked to send these. In my experience this is a good system, because if the writing doesn't hook you in the first few chapters then it isn't going to, so it's better to tell the writers that as quickly as possible, thus saving them the grim business of watching every post. You should present all your work on A4, typed on one side of the paper only and double spaced. Never ever send your only copy out - it might get lost in the post.

DON'T CALL US...

Getting a positive response to your chapters doesn't mean that a decision to publish has been made - it's simply an indication of interest. At this point some writers feel inspired to dedicate their books to their friends, get their manuscripts bound and provide a paragraph entitled "About the Author", which is rather premature and tends to make the recipients giggle. It's also not a good idea to keep phoning to ask whether the book has been read unless you really have been kept waiting months and months, in which case the publisher is at fault. If it's only a matter of weeks such phone calls will not endear you to the readers who are quite likely to



Apart from producing Australia's biggest selling magazine for Amstrad computers, Strategy Publications also uses its resources to provide a type-setting service to local industries.

We are now pleased to extend this service to readers of The Amstrad User in offering Personalised Stationery at competitive prices.

For just \$49.95 (including postage) we can supply for yourself or as a gift 100 sheets of Ivory coloured high quality A4 paper with nominated address and telephone number printed in one of the styles shown below. In addition, 50 envelopes of the same colour are provided.

Choose your style from these four:

STYLE No. ONE	NB. Text will be centred near top of sheet
23 Meadowbank Road Primrose Hill Victoria 3150 03 - 123 4567	
STYLE No. TWO	23 Meadowbank Road Primrose Hill Victoria 3150 03 - 123 4567
STYLE No. THREE	
23 MEADOWBANK ROAD PRIMROSE HILL VICTORIA 3150 03 - 123 4567	STYLE No. FOUR
The above styles are roughly half actual size	23 MEADOWBANK ROAD PRIMROSE HILL VICTORIA 3150 03 - 123 4567

HOW TO ORDER

1. Write very clearly (or type) onto a blank piece of paper the address and telephone number you want to see on the new letterhead.
2. Select the style you want and indicate on the same piece of paper.
3. Attach the above details to written confirmation of your order which should include the delivery address, your credit card number (Bankcard, Mastercard or Visa) and expiry date. Alternatively, you can pay by cheque or money order.
4. Phone orders cannot be accepted.

If you are not sure about anything, please ring us before proceeding. We are happy to provide a sample sheet if required.

Send your order to:

Strategy Publications,
1/245 Springvale Road, Glen Waverley
Vic. 3150 • (03) 233 9661

UNTOLD RICHES?

What can you expect if you succeed in making it into print? Well, unless you write a string of bestsellers the financial rewards are likely to be pretty modest. The majority of published writers earn under the national average income from their writing. Literary writers are getting higher advances now, but these are still confined to the Booker prize-winners and finalists. Oh dear - no money in it either - it does all sound rather prosaic, and these publishers and agents seem exacting individuals, don't they? But no-one who works with writers can remain impervious to the elation of an author whose talent has found recognition. The publication of first novels - which Martin Amis recently called 'The Holy Grails' of our industry - generates tremendous excitement which the publishing folk who work with their authors share and enjoy - so in that way maybe it is like the movies after all.

have a large number of manuscripts facing them. As reputable agents and publishers do not charge reading fees they are giving you their professional opinion for nothing - and this is another reason why return postage is considered so helpful. Good agents and publishers are very busy and since the publishable output from unsolicited manuscripts is tiny - only about 0.2 per cent of all books written are published - the time and expense involved in reading them far outweigh the results.

Rejection letters vary; they can be heartbreakingly brief, encouragingly brief, or they can offer constructive criticism and suggestions for revision. Agents and publishers will only do this if they feel that the author shows some promise, when they might ask to see the next book. However, any form of rejection is an anathema to the aspiring author because of the very nature of writing, which is an activity intrinsically bound up with the ego - reject the fruit of my labours and you are rejecting me. This is well understood by professionals who deal with established writers every day, so writing back by return of post suggesting that the reader has not fully understood your work gains nothing. However, publishers and agents are always impressed by a sensitive and thoughtful response to their comments - and it can encourage them to ask to see more.

If on the other hand the publishers feel strongly enthusiastic about

your book, that it will complement the rest of their list and sell reasonably well they will make you an offer. Should revisions prove necessary you will work with an editor. If you have sent your manuscript to an agent, and after meeting and talking they have agreed to represent you, they will send the book to publishers on your behalf unless it is felt that the book needs more work, and they will advise on this as generally agents prefer to send books in as finished a form as possible. The reputation of literary agents stands or falls on the writers they represent, so they have to be very good indeed. Publishers trust a good agent's judgement and will give priority to the manuscripts that they send and take less time to consider them.

FAVOURITE SUBJECTS

The impetus to write varies from individual to individual, but it seems that a large number of people naturally start to write about themselves. Of course it's sensible to write about what you know, but autobiographical novels have to be very very unusual indeed to find a publisher. Similarly, the only straight biographies which tend to find their way into the bookshops are those of the famous - or infamous. This is particularly heartrending at the moment because many of the young men who fought in World War II have now reached retirement age and at last have the time to draw on their war diaries

and write their memoirs. There will undoubtedly be a demand for these first-person accounts in years to come, but at the moment it's the General's reminiscences that the publisher will buy, not Tommy Atkins'.

Generally speaking, since first novels do not make a profit, the publisher sees money spent on them as an investment for the future and hopes to build up a good relationship and publish the author's work for many years. For that reason, it is very difficult to place a novel by older writers. There are notable exceptions like Lena Kennedy, whose first novel was published when she was 67. However, she had been scribbling away for years, had lots of novels to hand and was such a lively character that she was extremely promotable - and immensely successful.

So what are publishers and agents looking for? Well-written books of all kinds, has to be the answer. In fiction, style, tone and language has to be inextricably linked to the subject matter so that the book just flows along, involving you completely with the characters and the world that has been created. If you can make the reader think 'I've felt that' or 'Yes, that's exactly how newly-cut grass smells' you are succeeding. The books that send a tingle down one's spine frequently seem to have the age-old themes of innocence and love lost or gained, families dividing or uniting running through them whether or not these things are central to the plot. This must be because at bottom, we read to have our own experiences confirmed and articulated. So whilst you do have to 'look into your heart and write' you also have to observe and think and - above all - read and learn from the work of other writers if you want to be a published writer yourself.

• Lisa Eveleigh looks after unsolicited manuscripts at A. P. Watt Ltd, which is the oldest literary agency in the world. (Based in the UK). Founded in 1875 it has represented a very large number of the most distinguished authors of the past century as well as a great many successful contemporary authors.



“Give me up to 300 lines
and I may give you one of
the best ...

... a printer, either a DMP
2160 or a DMP 3160, or a
5.25" disc drive”

Yup, The Amstrad User is offering any one of the above prizes in a Programming Competition starting this month. The choice of prizes is given to accommodate the winner of either a CPC, PCW or PC entry.

All you have to do is write a program in Basic for any of the Amstrad range of computers, but you mustn't let it go over 300 instruction lines (REMs are not included in the count). It can be as small as 10 lines if you like.

All entries will be assessed and awarded points on:

- a) Originality
- b) Clarity
- c) Speed
- d) Ease of use
- e) Documentation

You may enter as many times as you like as long as each entry is submitted separately. All entries will be returned if accompanied with a suitable self addressed and stamped padded bag.

Apart from the program itself, which must be submitted on tape or disc, all entries must include:

- a) An overview of the program, ie. what it is supposed to do.
- b) Full operating instructions

Entries can be on any subject - eg. game, utility, application, educational - the choice is yours. It can also be a team effort, in which case one person should be nominated on the entry to choose and accept the prize.

The Competition closes at 5.00 pm. on Monday 31st October 1988. Any entry received after that date will be excluded. The one winner will be announced in Issue 47 December 1988.

And here's the last bit. The judges decision will be final and there will be no post-mortems. All programs will become the property of The Amstrad User and may be published in later issues. Apart from documentation relating to the entry, no other correspondence will be entered into. The Editor reserves the right to cancel the competition if the number and quality of entries does not warrant the choice of prizes offered. (*That means if he gets ten crummy tattslotto checkers it's all off!*)

Mail your entries to:

Program Competition
The Amstrad User
1/245 Springvale Road
Glen Waverley
Victoria 3150

GROUP BEHAVIOUR

Alec Rae reassures LocoScript expatriates that they can still organise CP/M files into groups.

Things can get pretty confusing when your disc has got 200 files on it, particularly if they are all called LETTER.MUM, LETTER.DAD and so on. LocoScript has a clever way of dealing with this problem by splitting the disc into 8 user groups. These are the neat columns that you use to divide up your documents to make your discs really organised, each with a TEMPLATE.STD. Using these groups is second nature to all LocoScribes, but it may surprise you to learn that the same useful filing system is available in CP/M.

User groups are like drawers in a filing cabinet. In CP/M you can keep files in up to 16 different groups on the disc (as opposed to LocoScript's mere 8) - these are rather confusingly numbered 0 to 15. If you don't tell CP/M everything you do goes into user group 0,

so when you type DIR you may have to plough through a vast directory. Double density discs (9512 discs and 8512 'B' discs) store up to 256 files, so it can get pretty traumatic. Splitting your files into user groups

groups. To do this you have to pull out the ever faithful PIP. Just as you can use PIP to copy files to a new disc you can use it to copy the file to a new group on the same disc and then (if you want to) erase the old version.

You all know (don't you?) that to copy a file from say, disc A to disc B you use

```
PIP B:=A:SECRET.LET
```

Well, to copy the file from group 0 of disc A, where you probably first created it, to group 15 of disc A you would use the command

```
PIP A:[G15]=A:SECRET.LET[GO]
```

Then, assuming you don't want to keep a version in group 0 too you have to erase the letter from there

WHERE HAVE ALL THE FILES GONE?

What sometimes does worry people is that in CP/M you can't see where all the files are. If you type DIR all you will get shown is the files in the user group you are in, unlike LocoScript where you can see all groups at a glance.

You can see all the files on a disc but it takes a little work using DIR. As it is one of the special functions of DIR you will need to have DIR.COM on the disc or in the M drive. Then type DIR [USERS=ALL]. The computer thinks for a moment, prints up 'Scanning.' and 'Sorting...' and then out come all the files from all the user groups complete with the size of the files and a lot of other interesting detail.

If you have a lot of files (more than a screenfull) it thoughtfully stops at the end of each screen and waits until you press [RETURN] before continuing. You can use the usual CP/M trick of pressing [ALT]+P to make the screen output come out on the printer for a permanent hard copy of long directory listings.

If you simply want a quick check on what user groups are in use it is easier to use the SHOW command (assuming you have SHOW.COM on the disc or in M drive). By typing SHOW [USERS] you get a list of all the groups that contain files and how many files there are in each group.

```
A>A:show [users]
A: Active User : 0
A: Active Files: 0 1 2 3
A: # of files : 10 6 4 13
A: Number of free directory entries: 28
A>|
```

▲ The quick way to find if files are there in User Groups other than Group 0. Use SHOW [USERS] to find out which groups have files in them and how many are in each. In this case groups 0 to 3 have a total of 28 files in them.

keeps things neat and tidy.

Normally you are in user group 0. When you first start up with CP/M and if you see an A> prompt this means you are in effect in group 0 on disc drive A. Type A1:, 1A:, 1: or even USER 1 and you will be mysteriously transported into user group 1. Remember the colon after all the shorter versions or you will just get an annoying 'A1?' back. Try DIR and you get the message 'No file'.

A MOVING EXPERIENCE

The first thing to get to grips with is moving files between different user

(make sure you are in group 0 by typing 0: if necessary and then ERA SECRET.LET) and the operation is complete. You naturally need the file PIP.COM on your disc or M drive.

In this way, once you have finished a correspondence with somebody you can shuffle those files out of the way into an obscure group number. You can get at them if you need to refer back, but they won't get in the way of your daily operations.

The parallels between LocoScript's user groups and CP/M's are

no coincidence, for they are in fact exactly the same thing. If, once you have started CP/M up, you put a LocoScript disc in the drive you will see what this means: type 1: to get to user group 1, DIR and all the LocoScript documents stored in LocoScript group 1 (the *second* group - numbering starts from 0 don't forget) are listed.

DOING THE LOCOMOTION

PIP's extra speed in CP/M file handling means that it might be worthwhile using this method to sort out your LocoScript discs. You can carry out group movements of LocoScript files that you normally would do with PIP.

Say you want to move all the files in group 0 of a LocoScript disc into group 7. If you have got more than a few files this could take a long time in LocoScript with six or more key presses for every file you move. But it is easy in CP/M using PIP with its 'wildcards' - those natty little symbols that allow you to copy groups of files at once.

In PIP commands, an asterisk

IN LIMBO

One of the weirdest uses of user groups is LocoScript's Limbo files. If you edit a file in most word processors it will automatically rename the old copy of the file as a back-up file in case you need to undo the changes - editing HUNCH.LET creates HUNCH.BAK for instance.

On the other hand when you edit (or erase) a file in LocoScript it seems as if it has actually disappeared. In fact it is spirited away into a semi-existence called Limbo where it can be called back under certain circumstances.

What is actually happening is that when you edit a document the old version is moved into Limbo. Similarly erased files are not really erased but moved into Limbo. Try working in LocoScript with the 'Show Limbo' option on and see what happens.

Only eight user groups appear to be available in LocoScript (0 to 7) as the other eight are used to hold Limbo files. User group 8 is used to hold the Limbo files for group 0, group 9 for group 1 and so on.

As the disc fills up LocoScript dumps these Limbo files if it needs to re-use the space. If you took a LocoScript disc that claimed it had 100k free and looked at it in CP/M you might find it saying that the disc was full - because of all the user groups from 8 to 15 are full of files that LocoScript treats as Limbo files but CP/M thinks are important files.

Using a LocoScript disc to store CP/M files on will usually mean going through the user groups from 8 to 15 doing ERA *.* to clear the Limbo files off.

stands for any word so PIP A:[G7]=A:*.[GO] moves all the files in group 0 to group 7. Or say you want to move every file which ends in .LET from group 1 into group 7 of your disc - just type PIP A:[G7]=A:*.LET[G1] and off they go.

In the same way, ? is the wildcard symbol for a single letter or digit. PIP B:[G5]=A:DOCUMENT.0? will

move every file from DOCUMENT.001 to DOCUMENT.009 to group 5 on your B drive and leave everything else untouched.

This is not the only time that it would be worth using CP/M to work on a LocoScript disc. Anyone who has tried to erase a number of files in LocoScript knows what a time consuming exercise it is. If you happen to want to erase all files in the same user group life is simple with CP/M. Just go to the group in question (use DIR to check that you've got the right one) and type in ERA *.* and the job is completed in seconds. Only the files in that particular user group will be erased. You must remember however that this really does erase the files. There is no popping back into Limbo to find them - unless you have an unerase utility program.

PROBLEMS? WHAT PROBLEMS?

One problem lurks to trap the unwary. If you change your user group by typing USER 7, for instance, then the only files you have access to are those in group 7. You may have all your work files stored in group 0 - like PIP.COM, BASIC.COM, a word processor and so on - but because they are not stored in group 7 you can't get at them without changing groups back again.

So what do you do? Store

```

Name      Bytes  Recs  Attributes  Name      Bytes  Recs  Attributes
-----
GOATS    001    2k    10 Dir RW    GOATS    002    2k    10 Dir RW
GOATS    003    2k    10 Dir RW    GOATS    004    2k    10 Dir RW
SHEEP    001    2k    10 Dir RW    SHEEP    003    2k    10 Dir RW
SHEEP    003    2k    10 Dir RW    SHEEP    004    2k    10 Dir RW
SHEEP    005    2k    10 Dir RW    SHEEP    006    2k    10 Dir RW
SHEEP    005    2k    10 Dir RW

Total Bytes = 20k  Total Records = 100  Files Found = 10
Total 1k Blocks = 20  Used/Max Dir Entries For Drive A: 18/ 64

Directory For Drive A: User 1
Name      Bytes  Recs  Attributes  Name      Bytes  Recs  Attributes
-----
SHEEP    001    2k    10 Dir RW    SHEEP    002    2k    10 Dir RW
SHEEP    003    2k    10 Dir RW    SHEEP    004    2k    10 Dir RW
SHEEP    005    2k    10 Dir RW    SHEEP    006    2k    10 Dir RW

Total Bytes = 12k  Total Records = 60  Files Found = 6
Total 1k Blocks = 12  Used/Max Dir Entries For Drive A: 18/ 64

Directory For Drive A: User 2
Name      Bytes  Recs  Attributes  Name      Bytes  Recs  Attributes
-----
GOATS    001    2k    10 Dir RW    GOATS    002    2k    10 Dir RW
Press RETURN to Continue █
    
```

▲ The effect of dividing the sheep from the goats. This is what you see when you use DIR [USERS=ALL] to see all the files on your disc. Each User Group is listed out in handy screenfuls allowing you plenty of time to see what files are in each group. This is what you see if you had transferred all the files starting SHEEP to group 1 using wildcards.


```

A>M:PIP a:(G2)=a:sheep.*
COPYING -
SHEEP.1
SHEEP.2
SHEEP.3
SHEEP.4
SHEEP.5
SHEEP.6
A>era sheep.*
ERASE SHEEP.* (Y/N)? y
A>↑C
A>|
    
```

The basic tool for moving files from one group to another is PIP.COM. Here all the files starting with SHEEP are being copied from Group 0 where they were created to group 1 using wildcards. Then all the files in Group 0 can be erased (if you want) to complete the transfer.

PIP.COM in every user group on the disc? This would be a terrible waste of space, so fortunately there

is a simple way around this. You declare that all these files that you want to be able to use from any user group are 'system files'.

Now when you type a command at CP/M's prompt, this is what happens: suppose the prompt is currently 7A> and you type BASIC[RETURN]. CP/M looks at all the files stored in group 7 of drive A for BASIC.COM. If it doesn't find it, it would normally reply 'BASIC?'. However, CP/M will also look through all the system files in the disc too, so if BASIC.COM is a system file then it will be found and run regardless of what group it's in.

You will need the file SET.COM on your working disc (it can be found on the CP/M master disc). To make the file BASIC.COM a system file just type SET BASIC.COM [SYS] and

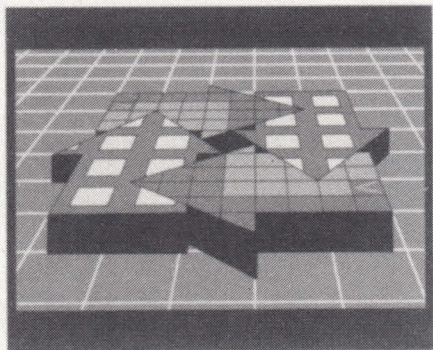
now whenever you type BASIC the familiar Mallard welcome pops up, no matter what group you are working in at the time.

When you type DIR now BASIC won't show up, except bracketed under the obscure message "SYSTEM FILE(S) EXIST". To list the system files out, type DIRSYS, which will also thoughtfully tell you "NON-SYSTEM FILE(S) EXIST" in case you didn't know. To convert a system file back to a normal file you would type SET BASIC.COM [DIR].

System files however have their own little problemette. As well as not showing on the normal directory, system files created don't behave normally when it comes to PIPing. PIP won't copy system files unless you add the option [R] as in PIP M:=A:BASIC.COM[R].

GLENTOP

ADVANCED LOCOSCRIPT
ON THE AMSTRAD
PCW COMPUTERS



Ian Sinclair

This new book from the proven Sinclair stable is designed for the more experienced users of LocoScript, who are making intensive use of the package. Readers will find this book an invaluable aid to using LocoScript. It offers a thorough examination of the more sophisticated features of LocoScript, enabling the software to be utilised to the full.

The outputting of text to the printer is covered earlier on, as are the various ASCII file options. The cut, copy and paste facilities are fully described to enable more elaborate formats to be created. This process is further enhanced by the description of how to produce new layouts and templates. Disk problems are discussed and methods of overcoming them offered.

The use of LocoMail and LocoSpell, the wordprocessor enhancements, are also covered in this book giving the reader an easily understood guide to the complete LocoScript suite of programs. It is probably more relevant to users of LocoScript 1.

It is now available through The Amstrad User at \$39.50 (or \$37.50 if you are a subscriber) plus postage.

Please see ordering details on page 64.

DIY RE-INKER

With many a PCW working at full pace spitting out endless amounts of printed paper, there's a good chance that your ribbon will soon become stone dry. Arnold Goldman has the solution with his nifty 'money-saving' home made re-inker.

Finally, after months of looking for new ribbons that are not overpriced, one of your contributors, Anthony Trost of Queensland, has alerted us to a supply of ribbon ink (March 1988). I immediately ordered a bottle, and then in the next issue of TAU the same firm, AUSSOFT, advertised a mechanical inking device. Unfortunately they cost \$175 and are not for sale direct to Victorian readers. The Melbourne distributor resells them for \$190 plus, and offers to re-ink ribbons for \$10. So, what was needed was a simple do-it-yourself device. I looked at driving the ribbon with an electric drill, but the ribbon drive is by friction and anything pressing against the ribbon caused it to slip. Even a hand drill was impractical. I made a device looking rather like the sketch below, and am able to re-ink a PCW ribbon in 30 minutes. If interested proceed as follows.

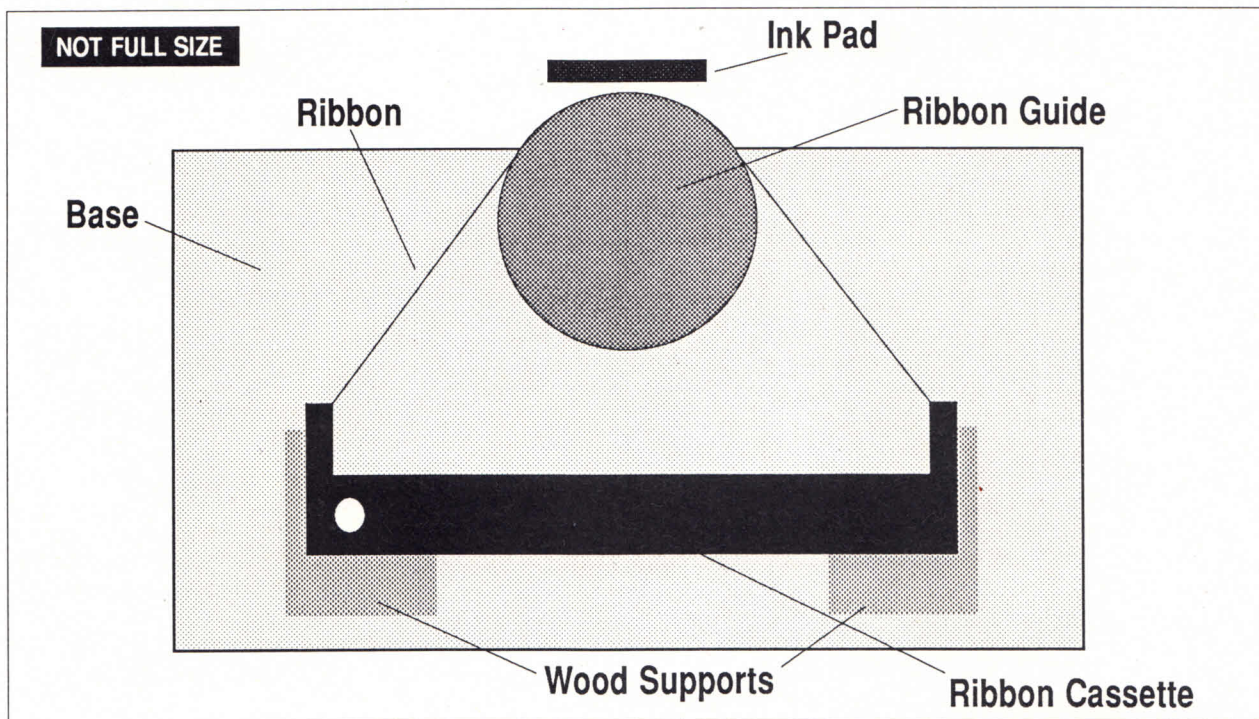
Cut a piece of 12 millimetre particle board about the size shown. It needs to be large enough to clamp in a vice or to a bench top. Then cut pieces of wood to act as supports as shown. A ribbon guide is needed to press the ink pad against. I use the lid from a Kraft peanut butter jar,

but anything around that size will do. Nail the ribbon guide to the base allowing it to overhang the edge slightly. Make a small inking pad using a piece of felt stuck to a small block of wood. I started using a piece of sponge, but the ink soaks through and does not wash off fingers easily. Turn the small knurled knob on the ribbon cassette, and holding the ribbon taut, rub the felt pad over the area in contact with the ribbon guide. Then wind on a bit and repeat. This sounds very tedious, and it is. The time to re-ink a long ribbon was 30 minutes,

and one of the cheaper short ribbons took around 10 minutes. However, unless one is intent on entering the commercial field of re-inking for payment, 30 minutes is not so bad once every few months. At least I hope the re-inked ribbon lasts that long.

Be sparing with the ink otherwise the end result will be blotchy.

So there you are, the only problem is that you can't make it on the computer. You will actually need to go out into the shed and use real materials such as hammer and nails.



ERASE & DEL PLUS MORE P.D.

Chris Collins discusses two more DOS commands and some language tutorial Public Domain Software

Hello, and welcome to this month's Compatible's Corner, where we will be looking at two more DOS commands, ERASE and DEL. We will also take a look at a few more public domain discs.

Firstly a bit of news. I finally got my legitimate copy of PC File+. Version 2.0 has now been released, and has been very much enhanced. The new version is now faster, allows a lot more information per field and per record and also includes graphs. The only fault that I have been able to find to date is that the graphs are only available in CGA mode, so the standard EGA graphics which comes with your PC is not quite enough. Small price to pay and I feel that it will probably be corrected in the next version.

The only other minus with the new program is that it is only shareware in the U.S.A. and Canada. If anyone wishes to purchase the new version, please let me know and I will forward the address for the company where I purchased mine. Cost was US\$45 plus US\$20 for airmail postage.

DOS COMMANDS FOR THIS MONTH

Onto this month's commands. ERASE and DELete can be made almost interchangeable in use. From here on in, any information that I give you will relate to both commands.

The correct syntax's are as follows:

```
ERASE [d:][\][path]filename.ext
DEL [d:][\][path]filename.ext
```

As you can see, both of the commands use the same syntax. As I explain the commands, most of what I say will seem familiar, as all of the DOS commands allow the same options.

As always, any information inside the square brackets are options. So the command line can be explained as follows:

[d:] specifies the drive on which the file exists.

[path] specifies the directory path, if required.

filename[.ext] will specify the filename and extension, if necessary.

Both wild cards * and ? can be used in the filename or extension, if you require them. If you decide to use the following command:

```
ERASE *.*
or
DEL *.*
```

you will be prompted with the following message:

```
ARE YOU SURE (Y or N)?
```

Only answer Y if you are absolutely positive that you wish to erase all files. Use the global commands only if you feel happy within yourself that all is safe.

PUBLIC DOMAIN SOFTWARE

And now onto this month's discs. This month we are looking at four pairs of discs. All four are tutorials on various programming languages. They all come from the same author and all four follow the same format.

I will go through and simply explain one of the tutorials and at the end I will inform you of the languages that they cover.

The first disc set in question is a Modula2 Tutor. This disc set is comprised of two discs, one contains a range of text files that actually make up the tutorial. The second disc contains the source code for the examples used in the tutorial.

The sensible thing to do in the beginning is to print out all of the text files that make up the tutorial. This is made easier for you with a specially written batch file. After that point, it is probably sensible to print out all of the source code of the second disc. The author suggests that you have a lot of paper handy (over 150 pages).

Now, it is simply a matter of working your way through the text files, whilst making reference to the source code provided.

These tutorials are not really for the beginner, they expect that you are proficient in at least one programming language and wish to learn another. They also expect that you will have a compiler for the language tutorial that you choose.

The four programming languages listed below are available in tutorial form:

C, Turbo C, Modula 2 and Pascal

I am led to believe that there is also a Turbo Pascal tutorial available but I have yet to find it. (*Modula2 and Turbo Pascal are languages so much alike that the tutorial for one may be used for the other, Ed*). All four of the tutorials that are available comprise two discs, so any pair would be available at \$16.00 including postage and handling.

BETTING ON YOUR COMPUTER'S RECOMMENDATIONS

The second disc that I wish to look

at this month is one called Cambridge Handicapper. For all you punters out there, this is a suite of programs to help you handicap your horses, dogs and trotters.

This disc contains 5 files of interest. One is a simple documentation file explaining this disc. The second file is PKXARC.COM. This is used to un-archive the three archive files that comprise the programs.

The three archive files are HARNES, HOUNDS and THORO. These are simply for TROTTERS, DOGS and THOROUGHBRED HORSES. Each version is different, as each appears to be geared specifically to the form of racing.

All three files (if you intend to use all three) should be un-archived onto either separate discs, or if you are a hard disk user, into separate sub-directories.

After that, a quick read of the documentation provided is in order. Although not required, this read

will un-earth a couple of pertinent points.

Now onto the program in particular. Make sure that you run it from the batch file provided. This batch file loads a memory resident program that has a lot to do with the correct operation of the program. I didn't try to load the program without it.

All three of the programs are in full colour and come up with a screen form for you to fill in with the performance figures of your chosen horse, trotter or dog. After you have loaded all the pertinent facts, the computer will give you a rating for that horse. After you have finished handicapping all of the horses in a race, you will have a list of horses names and ratings for each of those horses.

The horse with the highest rating is the most likely to win. However, if you decide to wager on the results that this program gives you, I will

not be held responsible for any losses that you might accrue. I tested the thoroughbred program over a few weeks and the results looked promising. BUT, as with any punting program you should always test it for a couple of months, before you decide to wager money on the system. However, have fun with the program.

THE COSTS

Well, this month has seen a variety of programs to fit the bill. As always, any discs mentioned are available from the following address:

C.J. Collins
1 Woods Street, Newport, 3015.

The costs are as follows:
First disc in order \$10.00
Any other discs in same order \$6.00 each.
Until next month.....

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PC NETWORK

Sagesoft is best known for its series of business software applications. But recently the company has moved into the hardware market.

No it doesn't keep the birds off your herb garden, neither would it have retained Bertrand Russell. This offering is a so-called local area network, or LAN for short - a nice case of the jargon meaning what it says for a change.

LAN first appeared in the late 1970's. They allow computers to talk to each other within a relatively small area, such as the same office or building. But they also have a big brother called wide area networks (WANS), which link computers over much larger distances and are used for national and international links. WANS commonly use the public telephone service for transmitting and receiving data, which travels in standardised bundles or packets via a packet switch service.

Local networks are particularly attractive for small to medium-sized organisations. Not only do they allow remote access to data and programs over small distances, but they make for a more efficient and co-ordinated use of both hardware and software.

One advantage of LANs is that workloads can be distributed as required among different computers, avoiding bottlenecks. Another is that tasks can be assigned to specific machines with particular capabilities. Finally, hardware of different types and from different manufacturers can be linked up cost-efficiently. If a device goes down, or it's taken away, another unit can step in almost immediately.

EASY INSTALLATION

The basic SageNet package consists of cabling and boards to link two PCs five metres apart. For each additional PC you need an extra board plus cabling, which can be supplied in longer lengths. A maximum of 63 stations is possible, although the default configuration is ten to avoid the system checking for more stations on start-up.

The boards for each computer are very straight forward to install, even if you have never done it before, and full illustrated instructions are given for both the Amstrad PC and for other IBM look-alikes. As for cabling, all the PCs in the network are basically linked in series - the thin grey line, so to speak.

To remove a computer, all you do is disconnect it and plug together two cable ends to maintain the chain. Adding a new machine is just as easy. This is important in networks, where you don't want the whole system to be paralysed for long periods just because, for example, one computer goes down.

SETTING UP THE NETWORK

To complete the installation, a program called Netload sets up the network software automatically. Netload will ask for unique names for each networked machine and peripheral device. Thereafter the system is booted up from hard or floppy disc by pressing the Alt and the right-hand shift keys together.

The software for operating the

network must be loaded into each machine on start-up, where it stays in memory. After this the PC can be used as normal in single-user mode, to run other programs, for instance. Pressing Alt and the right-hand Shift key takes you straight to the main network menu. And pressing Escape flips back to the operating system.

The standard network software takes up 125k of ram in each station. This could lead to problems running other programs. However, I encountered no real difficulties with one or two standard word processing and graphics packages.

All the network's utilities are menu-driven, with the options appearing in windows. The main facilities provide for file handling, printing, mail and security.

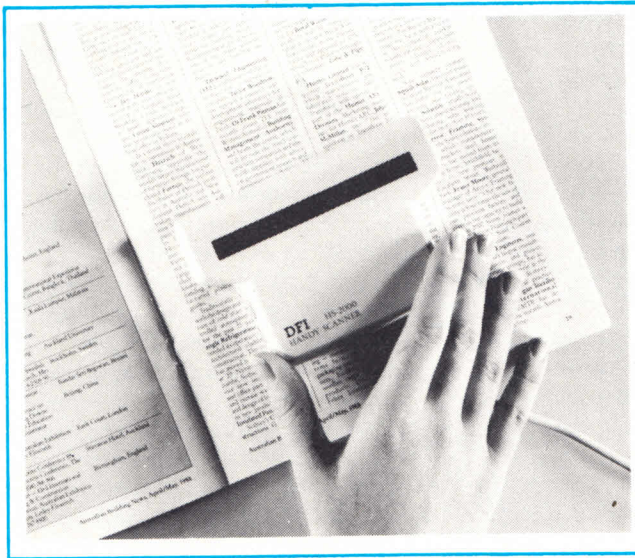
FILE HANDLING

From the 'files' option on the main menu you can look at a directory of any remote station, transfer files between your own station and another, and rename or erase a remote file if you have access rights. With the electronic mail service you can send a message to another station, read incoming mail or send pre-prepared text files.

File transfer is a good example of background activity. Another station can be moving a file from a station to your own disc while you are running your own applications program. Unfortunately this can slow down your current program quite markedly. If you're word processing the screen update virtually ceases until the transfer is completed.

With networked 8-bit machines sharing a serial line, this kind of interference is inevitable. In practice it would be a real nuisance if another user decided to dispatch masses of stuff down to your station without your knowledge (if he does, tell him to get a job writing brochures for a double glazing firm). Anyone who has attempted to do word processing operations on large company local area networks will be accustomed to long periods when

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the terminal is apparently asleep for reasons never satisfactorily explained.

PRINTING

Printing is a more complex activity and requires what the manual calls printer discipline if it's not to become anti-social. If your particular station has a printer, the easiest thing to do is just to disengage it from the network and use it as a normal stand alone or local printer. The whole purpose of the network, however, is to share resources which may be limited and you will not be popular for hogging and importing peripheral for long periods.

Let's assume you're on a remote station called "Orkney" and want to print something out on station "London" which, of course, is equipped with the only decent printer. Luckily at least they gave you a disc drive, electricity supply and food for one month at Orkney. The file, having been created with an application program, is stored on your own disc. Assuming you have London's permission, your file is either printed out immediately or its name is held in a queue if London is otherwise preoccupied.

Another method is divert all the instructions for printing your file, including the file itself, to London, if you cannot store it in your own disc. The procedure is slightly more complicated here, but the idea is to let you print out at London from within your own applications program. As before, your job is queued if London is too busy to attend to it immediately, and you can inspect and otherwise modify the queue at any time.

For some reason, probably to do with memory usage, all the time the SageNet menu is on screen, nothing will be printed out at the station which has the printer. The software can't handle the network and the print queue simultaneously.

And the user who wants to continue to get Christmas cards from his colleagues will also avoid interfering with the print operation

by attempting to print out from inside another program (the result is alternating lines from each file!)

SECURITY

A vital aspect of network usage is security. In a completely open system everyone has access to everyone else's files and can do what they want with them. If this is feasible for you, then you can happily forget all about the security option on the main menu.

Usually, however, some control of access is desirable. SageNet allows, not individual files, but only directories to be protected.

The owner of the directory can specify who has access to a particular directory, the type of access (read only, read and write, delete, and so on) and the password which must be used to enter the directory. Unless they're permanently stored by the system using an option on the security menu, passwords are lost when the computer is switched off. Other options allow you to remove protections and see what protections have been assigned to directories.

The basic 125k network management package (SageNet) is designed for general, all purpose file handling and printing, but you cannot run multi-user software with it. To do this you will need to load additional programs on each station which come supplied with the basic system.

For a total of 133k per machine the user can load three utilities (Sagemal, Redirect and Share) which will let him run a multi-user applications program in conjunction with a maximum of ten other stations. To access the network facilities themselves he must leave the applications program and enter the network main menu.

For a 203k overhead the user has a station which gives him on-line access to the network menu, and lets him share data with other users from within a multi-user program.

At the other end of the spectrum you can scale your facilities to suit memory limitations on individual stations. These might, for instance, be running software which needs lots of memory.

The minimum level of participation in the network allows you to handle incoming mail and file requests only and takes up 55k. When the station is finished with the applications program you can return to full participation in the network by running a utility program (Sagemenu) without the need for a full re-boot.

VALUE FOR MONEY

This package doesn't need much summing up - it's hard to beat for price. Basic menu-driven network facilities for \$574 a station (including tax) is superb value.

Enquiries to Personal Computer Software on (02) 923 2899

Invitation to all Amstrad owners

Anyone who feels they are qualified in contributing articles to The Amstrad User are invited to apply to join a new panel of writers.

Whilst we anticipate and will welcome applications from experienced writers, we will also consider requests from competent non-professionals. A revised payment structure will apply to panel member's published work. In that regard, applicants are asked to indicate their requirements.

In the first instance, we ask candidates to write directly to The Editor giving details of the areas or subjects in which they have expertise. This information should include the machine type (CPC, PCW or PC) and subject preferences. Examples of previously published work (if any) would help.

Please reply in writing to:

**The Editor (Writers Panel), The Amstrad User
1/245 Springvale Road, Glen Waverley, Victoria 3150**

There is a big plus for PC readers this month - Alan Murdoch of Benaraby in Queensland has supplied you with a small but functional database written in Basic2. As a type-in it's not short so we have had to split it over two months. But before you rush to your keyboards to hack in the code it is important to understand the methods by which your PC can store data. This month we look at Sequential files, and will follow next month with Random Access files.

SEQUENTIAL FILES

This is the simplest method where items of data are stored one after the other on the disc. The analogy can be a music cassette where the recordings are made one after the other and in order to access, say, the third song, you have to 'read' through the first two before you can access the third. In the same way, items stored sequentially on disc have to be scanned in that order before the chosen item is found. No doubt you can see that this method, whilst sometimes convenient, is somewhat slow. We'll discuss the pros and cons later. The command in Basic2 for creating a sequential file is

```
OPEN #stream [qualifier] mode filename
```

You will recall from a previous tutorial in this series that the 'stream' is the connector between the program and an output device such as a printer, screen window, or in our case, a disc file. (Up to 15 streams can be set up using the OPEN command).

'MODE' determines whether the stream will be used for extracting information (INPUT) or writing information (OUTPUT). Don't get confused with this. Just remember that you could be taking information from a file and putting it IN to your program work area for subsequent writing OUT through a stream, maybe to disc. You should also remember that by omitting to include a 'qualifier' in your com-

mand when using OUTPUT, the file with the name specified in your statement will be automatically overwritten. You can get over this by using OLD, NEW or APPEND - the latter adds information to the end of the file specified.

```
OPEN #5 NEW OUTPUT "b:\myfile.seq"
```

connects the file 'myfile.seq' (in the root directory on drive B) to the program through the output stream number 3. Should the file already exist it will remain unaltered as the command will be ignored.

We now have a file open ready to receive data. The data is sent via the PRINT #stream command. If you recap on a previous tutorial covering the commands used to print to a screen, you've mastered most of the commands for sending data to a file. Thus:

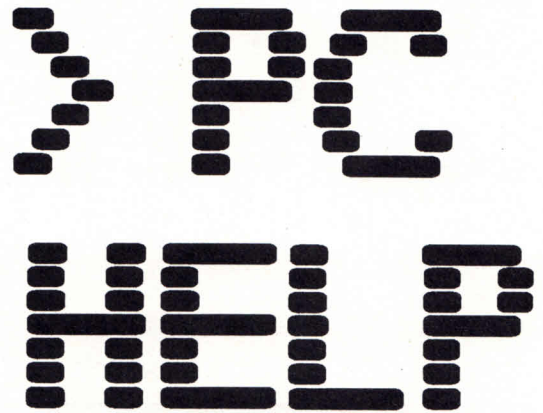
```
PRINT #5, code$,desc$
```

will write the (previously defined) variables code\$ and desc\$ to 'myfile.seq' - well eventually anyway! Your disc drive may not leap into action straight away because data destined to be written to your disc is initially placed in a buffer (a small reserved area of memory). When the buffer is full up the data is then transferred to disc. When you think about it, this makes sense. Not only does it speed up your program but also saves much wear and tear on your disc drive. You will also see why it is not a good idea to remove a disc in the middle of a program, or worse, switch off the machine without ensuring that the contents of the buffer has been cleared.

To close the file we have been using as an example you would use:

```
CLOSE #5
```

Using CLOSE without a stream identifier will close all open streams. Using QUIT will also clear the buffer.



Continuing our series on aspects of Basic2, we turn our attentions to methods of storing data

If you have experimented with the above simple file creation, you may like to extract some of the information you entered. Try this to open the file:

```
OPEN #6, INPUT "b:\myfile.seq"
```

then this to get the code number and description:

```
INPUT #6,a$: PRINT a$
```

You will notice, however, that Basic2 will take both the code and description as one line and put it in a\$. It is probably better initially to save each field separately, but in our example they can be separated using LEFT\$ or RIGHT\$.

LIMITATIONS

In comparison with other types of files, sequential files do have their limitations. You will discover that individual items can only be read once (unless you go through the tedious process of closing and re-opening the file). You will also find that the entire file has to be read into memory and then written back to the disc if a modification is required - not so Random Access files, but more about those next month.

DATA FILE

A menu driven database written in Basic2 for the Amstrad PCs by Alan Murdoch

At last, another PC program (you would have noticed that they are few and far between) to keep our 'compatible' readers busy for quite a while. As a database it is reasonably short, but as a type-in it's rather long so we've split it into two sections, with the last part being published next month.

If you have read this month's PC Help, you would have found an explanation on how to use sequential files in Basic2. This month's program uses some of those principles explained in the article.

To enter DataFile, reset your machine (depress ALT-CTRL-DEL) and insert your Gem start-up disc. When prompted insert your Gem desktop disc. After a few seconds the desktop should pop up and you should double click on the Basic2 icon. This will take you into Basic2 ready for entering the Datafile instructions. Don't forget to save regularly as you key in.

Once debugged and running, DataFile initially presents a small menu from which a selection can be made. Pressing the '?' sign will bring up a help window. This will explain how to use each function key so no explanation is needed here.

You can create a new file or open an existing one. If creating you are asked the number of fields per record and the title for each field. When the setup procedure is complete you are taken back to the main menu. From here you can access further options explained to you in the information window.

DATAFILE Part 1

```
REM DataFile
REM by Alan R. Murdoch
REM The Amstrad User, August 1988

LABEL starts
CLS #1
CLOSE WINDOW 1
CLOSE #1
OPEN #1 WINDOW 1
SCREEN #1 GRAPHICS 640 FIXED, 350 FIXED
WINDOW #1 PLACE 0, 0
```

```
WINDOW #1 TITLE"DATAFILE"
WINDOW #1 OPEN
CLS
cfile$="saved"
CLOSE #file
CLOSE WINDOW 2
CLOSE #2
OPEN #2 WINDOW 2
SCREEN #2 GRAPHICS 450 FIXED, 85 FIXED
WINDOW #2 PLACE 100, 80
WINDOW #2 TITLE"DATAFILE NOTICE BOARD"
ON ERROR GOTO make_directory
CHDIR "C:\BASIC2\FILEDATA":REM
change to suit if datafile is not kept in the basic2 directory
GOSUB start_up
```

```
LABEL main_menu
f1=315:f2=316:f3=317:f4=318:f5=319
f6=320:f7=321:f8=322:f9=323:f10=324
CLS
PRINT COLOUR(15), "
### Main Menu ###"
PRINT
PRINT
PRINT
PRINT COLOUR(12), " F1.....Quit DATAFILE"
PRINT COLOUR(12), " F2.....Load existing File"
PRINT COLOUR(12), " F3.....Create new File"
PRINT COLOUR(12), " F4.....Enter Information"
PRINT COLOUR(12), " F5.....Save current File"
PRINT COLOUR(12), " F6.....Display/Search/Change"
PRINT COLOUR(12), " F7.....Change Directory"
PRINT COLOUR(12), " F8.....Display Directory"
PRINT COLOUR(12), " F9.....Information"
PRINT
PRINT COLOUR(10), "
Your option?"
```

```
LABEL controls
REPEAT
funkey=INKEY
UNTIL funkey>=f1 AND funkey<=f10
CLS
IF funkey=f1 THEN GOSUB finished
IF funkey=f2 THEN GOSUB load_file
IF funkey=f3 THEN GOSUB create_file
IF funkey=f4 THEN GOSUB new_ent
```



```

ries
IF funkey=f5 THEN GOSUB save_file
IF funkey=f6 THEN GOSUB search
IF funkey=f7 THEN GOSUB change
IF funkey=f8 THEN GOSUB directory:GOSUB wait
IF funkey=f9 THEN GOSUB info
IF funkey=f10 THEN GOSUB wrong
GOTO main_menu

LABEL make_directory
GOSUB prog_error
GOSUB directory
WINDOW #2 OPEN
PRINT #2, COLOUR(2) " DATAFILE
has failed to find the Director
y FILEDATA"
PRINT #2, " [?] Infor
mation"
PRINT #2, " [U]
Use present Directory"
PRINT #2, " [M]
Make FILEDATA Directory"
PRINT #2, "
Your Option ?"
REPEAT
option$=UPPER$(INKEY$)
UNTIL option$="U" OR option$="M"
OR option$="?"
CLS #2
CLS #1
WINDOW #2 CLOSE
IF option$="M" THEN MKDIR"filed
ata":CHDIR"filedata"
IF option$="?" THEN GOSUB info:
GOTO make_directory
GOTO start_up

LABEL search
pointer=0
CLS
PRINT COLOUR(15), "
### Search ###"
PRINT
IF nentry=0 THEN GOSUB no_data:
RETURN
PRINT
PRINT
PRINT COLOUR(4), " Enter requi
red ITEM for standard search"
PRINT COLOUR(4), " Precede w
ith [#] for Initial search"
PRINT COLOUR(4), " Or press
[RETURN] for first item"
PRINT
newentry$=""
PRINT
PRINT COLOUR(10) " Please ent
er option ";; INPUT"> ",newentry
$
newentry$=UPPER$(newentry$)
IF LEFT$(newentry$,1)="#" THEN
newentry$=MID$(newentry$,2):GOS
UB bin_search:newentry$="":poin
ter=searchp
option$="R"
REPEAT
IF newentry$="" THEN GOTO searc
h1
find=0
FOR count=pointer TO nentry-1
sentry=INSTR(array$(count),newe
ntry$)
IF sentry<>0 THEN find=1:pointe
r=count:count=nent ry-1
NEXT count
IF find=0 THEN RETURN

LABEL search1
option$=""
REPEAT
IF pointer>nentry-1 THEN pointe
r=nentry-1
IF pointer<0 THEN pointer=0
GOSUB check_record
CLS
PRINT
PRINT COLOUR(12), "
Entry ";pointer+1;": "
PRINT
sentry=0
FOR count=0 TO number-1
PRINT COLOUR(10) " ";item$(count
);" > ";;PRINT MID$(array$(poin
ter),sentry+1,p entry(count)-se
ntry-1)
sentry=pentry(count)
NEXT count
PRINT
PRINT COLOUR(4), " Press [RETU
RN] for next Item"
PRINT COLOUR(4), " [A] to Alte
r entry [R] to Resume search
"
PRINT COLOUR(4), " [@] to Move
position [!] to Quit"
PRINT
PRINT COLOUR(10), " Enter your
option? ";; INPUT"> ",option$
option$=UPPER$(option$)
IF option$="" OR option$="R" TH
EN pointer=pointer+1
IF LEFT$(option$,1)="#" THEN po
inter=pointer+VAL(MID$(option$
,2)):option$=""
IF option$="A" THEN GOSUB chang
e_entry
IF option$="R" THEN GOTO other
IF option$="!" THEN RETURN
UNTIL option$<>" AND nentry=0

LABEL other
UNTIL option$<>"R"
RETURN

```



```

LABEL bin_search
  IF nentry=0 THEN searchp=0: RETURN
  sentry=INT(LOG(nentry)/LOG(2)):
  searchp=2^sentry-1
  FOR count=sentry-1 TO 0 STEP-1
  searchp=searchp+2^count*((array$(searchp)>newentry$)-(array$(searchp)<newentry$))
  IF searchp<0 THEN searchp=0
  IF searchp>nentry-1 THEN searchp=nentry-1
  NEXT count
  IF array$(searchp)<newentry$ THEN searchp=searchp+1
  RETURN

LABEL insert_entry
  IF nentry=0 THEN array$(searchp)=newentry$: nentry=nentry+1: RETURN
  FOR count=nentry TO searchp+1 STEP-1
  array$(count)=array$(count-1)
  NEXT count
  array$(searchp)=newentry$: nentry=nentry+1
  RETURN

LABEL check_record
  sentry=0
  FOR count=0 TO number-1
  pentry(count)=INSTR(sentry+1, array$(pointer), ":")
  sentry=pentry(count)
  NEXT count
  RETURN

LABEL change_entry
  newentry$="": sentry=0
  FOR count=0 TO number-1
  CLS
  PRINT
  PRINT COLOUR(12), " Entry "; pointer+1; ":"
  PRINT
  PRINT COLOUR(10), item$(count); "> ";: PRINT MID$(array$(pointer), sentry+1, pentry(count)-sentry-1)
  PRINT
  PRINT COLOUR(4), " Enter new item to replace displayed item"
  PRINT COLOUR(4), " Press [RETURN] to leave item unaltered"
  PRINT COLOUR(4), " [*R] Removes entire entry"
  PRINT COLOUR(4), " [*] Leaves entry unchanged"
  PRINT
  PRINT COLOUR(10)
  Enter your option ";: INPUT"> ", options$
  option$=UPPER$(option$)
  IF option$="*R" THEN GOSUB remove_entry: RETURN
  IF option$="*" THEN RETURN
  IF option$<>" THEN option$=option$+"!"
  IF option$="" THEN option$=MID$(array$(pointer), sentry+1, pentry(count)-sentry)
  sentry=pentry(count): newentry$=newentry$+option$
  NEXT count
  GOSUB remove_entry
  GOSUB bin_search
  pointer=searchp
  GOSUB insert_entry
  RETURN

LABEL remove_entry
  FOR count=pointer TO nentry-1: array$(count)=array$(count+1)
  NEXT count
  nentry=nentry-1
  RETURN

LABEL new_entries
  REPEAT
  newentry$=""
  CLS
  PRINT COLOUR(15), " ### New Entries ###"
  PRINT
  PRINT COLOUR(12), " Entry number > "; nentry+1
  PRINT
  PRINT COLOUR(4), " Enter the ITEM required or"
  PRINT COLOUR(4), " Enter [!] at start of entry"
  PRINT COLOUR(4), " to return to the Main Menu"
  PRINT
  FOR count=0 TO number-1
  PRINT COLOUR(10) " "; item$(count);: INPUT"> ", options$
  IF option$="!" THEN RETURN
  newentry$=newentry$+UPPER$(option$)+"!"
  NEXT count
  PRINT
  PRINT COLOUR(2), " ##### Please Wait #####"
  GOSUB bin_search
  GOSUB insert_entry
  UNTIL nentry>=1000
  CLS
  GOSUB no_more
  RETURN

```

Sorry to do this to you but it is time to stop typing. We've run out of space. Tune in next month for the final thrilling installment.

KEYBOARD INPUT

Paul Gerard takes a quick look at variables, and he also adds some enhancements to last month's INPUT routine

This series assumes that you have already done at least a little programming, so we will keep this section on variables fairly short. In particular, I will assume you at least know what a variable is!

There are three types of variables in Basic (and most other programming languages for that matter) - REAL numbers, INTEGERS, and STRINGS. Of these three your computer infinitely prefers integers, that is whole numbers. Integers take up far less memory, they can be manipulated with greater speed (and, incidentally, more accurately), and in any case are generally more useful. Hence you should always use integers whenever possible. One way of doing this is to place a "percent" sign (%) after each variable name for example:

```
13090 fussy%=14
```

This adds hundreds of extra characters to a program of any length, and in any case you are bound to accidentally leave off the "%" now and then (I will not go into the dire consequences of this). It is much easier is to use that excellent command:

```
13010 DEFINT a-z
```

in your initialisation routine. Note that we define ALL variables as integers - no messing around with reals or strings at all. Of course some of our variables will need to be very large, or contain a fractional part - in this case we will simply add an exclamation mark to the variable name to force it to act as a real number - thus:

```
13050 fussy!=23.456
10060 utterly.enormous!=1234567890
```

Yes, I know, this is just like adding '%' to the integers - the point is that a well written program is likely to contain dozens of integer variables for each real - since we will only use reals when it is absolutely necessary. When reading our program it is actually very handy to have our reals (which will be few and far

between) clearly labelled by "!" signs, and our string variables labelled by "\$" signs. Because of our blanket "DEFINT" we will know that any unmarked variables are integers.

Real numbers are clumsy, ponderous things that take up too much memory, and can only be manipulated fairly slowly and at times rather inaccurately. They are however much better in this respect than strings. Strings fill up the computer quicker than anything else, and if the computer is full of strings it has the most horrendous time of it when "garbage collecting". As we have already seen, Locomotive Basic has a further nasty habit if we change string values incautiously, of filling itself up with messy garbage that can take minutes rather than seconds to "collect" - (for a classic example of this you might have a look at the original version of my ELIZA program, published in The Amstrad User a couple of years ago - before I got the hang of this particular peculiarity. Although it works well for a while it can produce lengthy garbage collections if "consulted" at length).

Strings (ie. words and sentences) are however much more fun than numbers - and of course we can't adventure very far without them. Actually strings are reasonably manageable if we always change the value of strings with the MID\$ command, and always use our

substitute for Basic's INPUT command. Next month we will look into variables some more - in the meantime let's get on with our INPUT routine.

INPUT (2)

You will remember we left off last month with this very simple version of our user input routine -

```
200 ' User Input Routine
210 long=0:mid$(byte$,1)="#" 'reset key
    variables
220 WHILE byte$<>CHR$(13) and long <12
    'CR or max length
230 MID$(byte$,1)="#"
240 WHILE byte$="#"
250 MID$(byte$,1)=INKEY$
260 WEND
270 IF byte$<>CHR$(13) and long<12 THEN
    long=long+1:MID$(user.input$,long,1)=byte$:
    PRINT byte$;
280 WEND
290 RETURN
```

If you haven't already done so type this in - and add the following lines to turn it into a runnable program.

```
1 ' Just a little test rig !
2 ' For the input routine (GOSUB 200)
10 user.input$=STRING$(12,"#")
20 byte$="#"
30 GOSUB 200:PRINT ' user input routine
40 PRINT LEFT(user.input$,long)
50 GOTO 30
```

As this is just a little test rig we won't worry about that GOTO - although in any case you will notice that I use it in the way I condoned in my first article - to form a small compact loop.

If you now run the program it should take up to twelve characters,

and put these into `user.input$`. You will notice however that we have lost the cursor and that the delete key produces a little checker board character and adds this to `user.input$` instead of doing what we want it to.

The following lines fix this - first to insert a cursor

```
255 PRINT CHR$(143)::PRINT CHR$(8):'
    cursor
```

Character 143 is the normal little cursor box - of course you could substitute any other character if you wanted; while character 8 simply moves you back one position so that the key you press will be echoed at the cursor and not following it. Incidentally if something is still wrong check all the colons (:) and semi-colons (;)!

The only thing that is still not as we want it is that the cursor character will remain after you press ENTER or RETURN. To fix this add this line -

```
285 PRINT " " 'wipe cursor at end of line
```

Don't worry about the odd line numbers - this is the reason we normally space line numbers in tens anyway!

Once you have the cursor working nicely - put in the following line to get a working delete key. Note that I use my own suggestion and insert spaces to make the time more readable on the screen - don't worry too much about this if you don't like it.

```
256 IF (byte$=CHR$(127)) and (long>0) THEN
    PRINT CHR$(8);" ";CHR$(8)::MID$(user.in
    put$,long,1)="#":long=long-1:mid$(byte$,1)
    ="#"
```

The gap between the inverted commas must be TWO spaces, to wipe out both the character to be deleted and the cursor in front of it!

At the same time we will also need a new line 270 - in fact we are going to have to add a few more things to this line before we are finished!

```
270 IF byte$<> CHR$(13) AND byte$<>CHR(1
    27) and long<12 THEN long=long+1:MID$
    (user.input$,long,1)=byte$:PRINT byte$;
```

This just adds that little checker-board to the characters that will under no circumstances get into our string!

We will not worry here about adding full line editor features (the CLR and cursor keys) although this would be quite possible if you wanted to. The "cursor" would obviously become an inverse version of the character it covered. For the moment let's leave that as a possible project for the future.

There are a couple of features that can be added fairly simply - the first is simply to make the length of `user.input$` a bit more flexible. Its present form will do fine if we will only ever need 12 character strings - but what if we will need much longer strings at times, or if we want to be able to cut input off at (say) one or two characters? It makes sense to alter sub-routine 200 to accommodate this requirement rather than write a set of very similar routines for each length of string.

What we need is a new variable (let's call it `length`) to replace "12" in line 220, which becomes:

```
220 WHILE byte$<>CHR$(13) AND long<length
```

```
th 'CR or max length
```

Of course we also need to change line 270 again - I don't need to insult your intelligence as to how, do I? I do? Just change the "12" in "long<12" to "length"!

Every time the modified routine is called we will have to specify the length of the string the user is to input - thus:

```
length=12:GOSUB 200
```

This is starting to look like what we are after, but then we do need, especially for adventure games, to limit our spaces between words to one, and to make sure that our input does not start with a space. This line does this - the GOTO is allowable by my own rules as it refers back a few lines and could not be done as simply by other means. It could be avoided by making the WHILE condition in 220 extremely intricate - I think you will agree it is not worth the bother. Again note my redundant spaces to make a fairly long line more readable (Refer to listing in box on next page):

```
265 IF byte$=" " THEN IF long=0 THEN 220
```

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```
ELSE IF (MID$(user.input$,long,1)=" ")
THEN 220
```

Incidentally this line neatly illustrates the usefulness of nested IF statements. If long=0 then our MID\$ statement will produce an error - so we craftily hide it behind that ELSE that is never executed unless long>0! Otherwise we could have got the same effect more neatly with:

```
265 IF byte$=" " THEN IF (long=0) OR -----
(MID$(user.input$,long,1)=" ") THEN 220
```

Another useful feature is the ability to insist on upper case letters for some strings - we do this with another nested IF statement:

```
267 IF caps THEN IF (ASC(byte$)>=97) AND
(ASC(byte$)<=122) THEN MID$(byte$,1)=
CHR$(ASC(byte$)-32)
```

If we want to have only uppercase letters in a section of user input we will call the routine with "caps" set to 1 (or any number other than 0), otherwise "caps" will be 0 and the line will have no effect.

Here is a further test rig for our

```
1 ' This is a test rig for the version of the INPUT
2 ' routine that includes the extra features covered in article 3
10 user.input$=STRING$(254,"#")
20 byte$="#"
22 PRINT "How long is this string ? "
25 length=3:GOSUB 200:length=VAL(LEFT$(user.input$,long))
26 IF length<1 THEN 22 ELSE IF length>254 THEN length=254
27 IF length<7 THEN caps=1 ELSE caps=0 ' strings in U/C
28 PRINT "Type in a string of up to"length"characters > ";
30 GOSUB 200:PRINT "Your string was : ";LEFT$(user.input$,long)
40 GOTO 22
```

modified INPUT sub-routine. It ain't elegant, but it does work, and it does demonstrate the features of our routine. PLEASE don't take this as an example of good programming! Note that we make the short strings uppercase just to demonstrate "caps" at work - (line 27) you could just as well make the longer strings uppercase, or even have uppercase under the user's control. In fact as soon as you are happy the INPUT routine works nicely, save it separately and throw away that grubby little test rig forever! We are now very nearly there ! We will do a little more to our routine next month, when we look at the

magical power of arrays - and we will use it as we look at user command routines - both menu-driven and command based. We will also start to make our routines do things that INPUT never could! Incidentally, since we are assuming that you are NOT a complete beginner we have not fully described exactly what every line in sub-routine 200 does. If you are not sure then work it out - try different, perhaps better, ways of doing the same thing - see if they work (!) Have a go at expanding the routine to use a full line editor (cursor keys, copy key, clr key and so on). It's not that hard. Have fun!

MASTERCALC 128

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VECTOR GRAPHICS

Over the last few months, Gary Koh has introduced us to the art of animation through sprites. This month he takes a look at vector graphics

This month we conclude our foray into animation, by looking at vector graphics or as it is commonly known, line graphics.

The majority of games produced these days use sprite graphics. However, a few games like Elite, Star Glider and Starfox use vector graphics. Vector animation allows you to add a third dimension to your picture. This is well suited to games that need to animate large objects like ships or buildings.

There are many drawbacks with using vector graphics and it has a mainly specialised use. It can animate 3D looking objects as large as the screen. It does this by making the object out of lines. It tricks you into thinking the object is solid even though it is almost empty. However, there is a price to pay for this. Vector animation requires the use of trigonometric functions and matrices. This has to be done under machine code because of the speed required to animate an object.

Vector animation can also have hidden line removal. Vector animation without hidden line removal is commonly referred to as wireframe graphics. This is because the object is drawn so you can see all the corners of an object. Hidden line removal takes away the lines that are on the other side of the object and makes the object look far better and solid. Figure 1 shows a ship as it would look like when drawn without hidden line removal and figure 2 shows how a ship drawn with hidden line removal would look like.

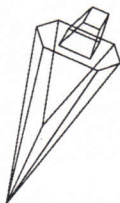


Figure 1
An impression of a ship drawn in wireframe graphics.

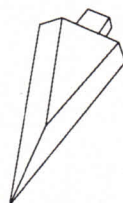


Figure 2
An impression of a ship drawn in vector graphics with hidden line removal

As vector graphics is very hard to produce what we will be looking at are pseudo-vector graphics or line graphics. The first problem is to make it look like an object is being animated. Of course, you cannot rotate the object (at least not in 3D) so you have to look at other ways of simulating the animation.

If you want to draw a line graphic under Basic you need to use direct draw and move statements. If you read the data in with data statements the drawing will just be too slow. Listing 1 is an example of a line graphic of a rocket. The rocket is drawn using a series of move and draw statements. The animation though is a bit flickery. (Please note: you need to run Grafex first before you run any of the listings this month.)

```
100 ' Rocket - line graphic example
110 ' The Amstrad User Aug(1988)
120 '
130 MODE 1:INK 1,15:INK 0,0:BORDER 0:DEFINT a-z
140 st!=1:WHILE vc<10:a=a+st!
150 MOVE 320,a:IGPEN,1:GOSUB 210
160 st!=st!+.31 ' alter the value to change speed of r
ocket
170 IF a>400 THEN a=1:vc=vc+1
180 MOVE 320,a:IGPEN,0:GOSUB 210
190 WEND:END
200 ' draw rocket
210 MOVER 20,4:DRAWR 0,56:DRAWR 4,8:DRAWR 4,-8:DRAWR 0,
-56:DRAWR -8,0
220 MOVER 0,6:DRAWR -8,0:DRAWR 0,10:DRAWR 8,10
230 MOVER 8,0:DRAWR 8,-10:DRAWR 0,-10:DRAWR -8,0
240 RETURN
```

Just drawing a single picture like that on the screen is not much use. Another thing we can do is to scale the rocket to a different size. This is what listing 2 does. The left and right arrow keys make the rocket decrease or increase its width. The up and down arrow keys increase and decrease the height of the rocket.

From this we can extend it a bit further.

```
100 ' Scaled rocket - scaled line graphic example
110 ' The Amstrad User Aug(1988)
120 '
130 MODE 1:INK 1,15:INK 0,0:BORDER 0
140 xs=1.5:ys=1.5:nys=ys:nxs=xs:GOSUB 220
150 xsf=.3:ysf=.1
160 i$=INKEY$:i=ASC(i$+" "):IF i<240 OR i>243 THEN 160
170 IF i=240 AND ys<6.1 THEN nys=nys+ysf:GOSUB 220
180 IF i=241 AND ys>0.5 THEN nys=nys-ysf:GOSUB 220
190 IF i=242 AND xs>0.5 THEN nxs=nxs-xsf:GOSUB 220
200 IF i=243 AND xs<26.3 THEN nxs=nxs+xsf:GOSUB 220
210 GOTO 160
220 IGPEN,0:MOVE 1,1:GOSUB 240:x5=nxs:y5=nys:IGPEN,1:MO
```



```

VE 1,1:GOSUB 240:RETURN
230 ' draw scaled rocket
240 MOVER 8*xs,0:DRAWR 0,56*ys:DRAWR 4*xs,8*ys:DRAWR 4*
xs,-8*ys:DRAWR 0*xs,-56*ys:DRAWR -8*xs,0
250 MOVER 0,6*ys:DRAWR -8*xs,0:DRAWR 0,10*ys:DRAWR 8*xs
,10*ys
260 MOVER 8*xs,0:DRAWR 8*xs,-10*ys:DRAWR 0,-10*ys:DRAWR
-8*xs,0
270 RETURN

```

In listing 3 you can control the "ships" by using a joystick. The ship itself is a single frame. You will also notice that pentagons are coming towards you. The pentagons use scaled line graphics to draw themselves. The idea is that you are to avoid the pentagonian stripe anti-line ship missiles. Fortunately for you they seem not to have heard of collision detection yet so they pass harmlessly over you.

```

100 ' No-name - skeleton line graphic "game"(!?)
110 ' By Gary Koh
120 ' The Amstrad User Aug(1988)
130 '
140 GOSUB 410
150 MODE 1:INK 1,15:INK 0,0:BORDER 0
160 x=320:y=200:px=x:py=y:sp=8:GOSUB 330
170 WINDOW #1,2,39,22,24
180 fs=2:GOSUB 300:fs=6:GOSUB 300:fs=8:GOSUB 300:fs=10:
GOSUB 300
190 PRINT#1,"No-name brand line graphic skeleton"prog
am"
200 FOR a=0 TO 5:msx(a)=INT(RND*560)+2:msy(a)=INT(RND*2
90)+110:mss(a)=(INT(RND*5)*0.15)+0.2:NEXT
210 ' start of game
220 IF INKEY(72)=0 AND y<360 THEN y=y+sp:GOSUB 330
230 IF INKEY(73)=0 AND y>80 THEN y=y-sp:GOSUB 330
240 IF INKEY(74)=0 AND x>2 THEN x=x-sp:GOSUB 330
250 IF INKEY(75)=0 AND x<535 THEN x=x+sp:GOSUB 330
260 msc=msc+1:IF msc>5 THEN msc=0
270 GOSUB 350
280 GOTO 220
290 ' draw border 1 square
300 MOVE 1+fs,78-fs:DRAWR 638-fs*2,0,3:DRAWR 0,-78+fs*2
:DRAWR -638+fs*2,0:DRAWR 0,78-fs*2
310 RETURN
320 ' move ship
330 !GPEN,0:MOVE px,py:GOSUB 390:px=x:py=y:!GPEN,1:MOVE
x,y:GOSUB 390:RETURN
340 ' missile handler
350 MOVE msx(msc),msy(msc):!GPEN,0:GOSUB 400:mss(msc)=m
ss(msc)+0.15
360 IF mss(msc)>0.85 THEN mss(msc)=0.2:msx(msc)=INT(RND
*560)+2:msy(msc)=INT(RND*290)+110
370 !GPEN,2:MOVE msx(msc),msy(msc):GOSUB 400
380 RETURN

```

```

390 GOSUB 430:RETURN ' draw ship
400 GOSUB 500:RETURN ' missiles
410 RETURN
420 draw your ship
430 MOVER 4,16:DRAWR 40,8:DRAWR 4,-8:DRAWR -4,-8:DRAWR
-40,8
440 MOVER 20,0:DRAWR 20,16:DRAWR 20,-16:DRAWR -20,-16:D
RAWR -20,16
450 MOVER 24,0:DRAWR 4,8:DRAWR 40,-8:DRAWR -40,-8:DRAWR
-4,8
460 MOVER 24,4:DRAWR 0,16
470 MOVER -56,0:DRAWR 0,-16
480 RETURN
490 ' draw missiles
500 MOVER 8*mss(msc),0:DRAWR 15*mss(msc),-4*mss(msc):DR
AWR 1*mss(msc),-15*mss(msc):DRAWR -14*mss(msc),-5*mss(m
sc):DRAWR -10*mss(msc),11*mss(msc):DRAWR 8*mss(msc),13*
mss(msc)
510 RETURN

```

However, still the movements of the ship are a little jerky and slow. Is there any other way to speed it up? There are in fact many possible ways. Firstly the line drawing routine used by the firmware is a bit slow but works in all modes. It is possible to replace it with a faster routine that works in say mode 1 (I will leave that as an exercise to the machine code enthusiast). To create such a routine would take a long time and it would be very complicated.

Secondly you can draw the ship in machine code instead of Basic. This saves a lot of time waiting for Basic to wade through all the move and draw statements and provides a reasonable increase in speed. However, the line drawing routine offers the most scope for improvement.

Listing 4 is meant to be merged with Listing 3. It replaces the Basic line graphics routines with a machine code one. This increases the speed of the graphics by about a factor of 2 or so as you can see. The machine code does not replace the line drawing routine in the firmware, it simply draws the lines in machine code.

```

100 ' No-name Version B - machine code line graphics r
outine
110 ' By Gary Koh
120 ' The Amstrad User Aug(1988)
130 '
390 CALL 40300:RETURN ' draw ship
400 CALL 40302,(mss(msc)-0.05)/0.15:RETURN ' missiles
410 IF PEEK(0)=45 THEN RETURN
420 MEMORY 40299:POKE 0,45:add=0
430 FOR a=1 TO 45:lnck=0:FOR b=1 TO 8
440 READ byte#:byte=VAL("&"&byte#)
450 POKE 40300+add,byte:lnck=lnck+byte:chek=chek+byte:a
dd=add+1

```



```

460 NEXT:PRINT".":READ Incq
470 IF Incq<>Inck THEN PRINT:PRINT"Data error in line..
.":a*10+470:END
480 NEXT:IF chek=27290 THEN RETURN ELSE PRINT:PRINT"The
re's an error somewhere in the data.":END
490 DATA 18,02,18,09,21,AE,9D,3E, 485
500 DATA 13,CD,8B,9D,C9,DD,46,00, 1012
510 DATA 11,24,00,21,FC,9D,19,10, 536
520 DATA FD,3E,06,CD,8B,9D,C9,F5, 1268
530 DATA 3E,01,BE,23,23,5E,23,56, 538
540 DATA 23,4E,23,46,23,E5,C5,E1, 904
550 DATA 28,05,CD,C3,8B,18,03,CD, 864
560 DATA F9,8B,E1,F1,3D,FE,00,20, 1249
570 DATA DE,C9,00,00,04,00,10,00, 443
580 DATA 01,00,28,00,08,00,01,00, 50
590 DATA 04,00,F8,FF,01,00,FC,FF, 1015
600 DATA F8,FF,01,00,D8,FF,08,00, 983
610 DATA 00,00,1C,00,00,00,01,00, 29
620 DATA 14,00,10,00,01,00,14,00, 57
630 DATA F0,FF,01,00,EC,FF,F0,FF, 1482
640 DATA 01,00,EC,FF,10,00,00,00, 508
650 DATA 18,00,00,00,01,00,04,00, 29
660 DATA 08,00,01,00,28,00,F8,FF, 552
670 DATA 01,00,D8,FF,F8,FF,01,00, 976
680 DATA FC,FF,08,00,00,00,18,00, 539
690 DATA 04,00,01,00,00,00,10,00, 21
700 DATA 00,00,C8,FF,00,00,01,00, 456
710 DATA 00,00,F0,FF,00,00,01,00, 496
720 DATA 00,00,01,00,03,00,FF,FF, 514
730 DATA 01,00,00,00,FD,FF,01,00, 510
740 DATA FD,FF,FF,FF,01,00,FE,FF, 1528
750 DATA 02,00,01,00,01,00,02,00, 6
760 DATA 00,00,02,00,00,00,01,00, 3
770 DATA 05,00,FE,FF,01,00,00,00, 515
780 DATA FA,FF,01,00,FB,FF,FE,FF, 1521
790 DATA 01,00,FC,FF,03,00,01,00, 512
800 DATA 02,00,04,00,00,00,04,00, 10
810 DATA 00,00,01,00,07,00,FE,FF, 517
820 DATA 01,00,00,00,F8,FF,01,00, 505
830 DATA F9,FF,FD,FF,01,00,FB,FF, 1519
840 DATA 05,00,01,00,04,00,06,00, 16
850 DATA 00,00,05,00,00,00,01,00, 6
860 DATA 09,00,FD,FF,01,00,00,00, 518
870 DATA F6,FF,01,00,F6,FF,FC,FF, 1510
880 DATA 01,00,F9,FF,07,00,01,00, 513
890 DATA 05,00,08,00,00,00,06,00, 19
900 DATA 00,00,01,00,0C,00,FC,FF, 520
910 DATA 01,00,00,00,F4,FF,01,00, 501
920 DATA F4,FF,FC,FF,01,00,F8,FF, 1510
930 DATA 08,00,01,00,06,00,0A,00, 25

```

There are also what could be termed solid vector graphics. This simply means that instead of just having a graphic made out of lines the space within the lines is filled up. I believe Starfox makes use of solid vector graphics although how they managed to do that with

enough speed on the Amstrad I do not know.

That concludes our look into animation. Hopefully this has given you some insight into animation and the concepts behind producing it. Next month we will be delving into screen manipulation.

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 Victoria 3150.

Tel: (03) 233 9661.

Hello, are you still wandering around here, haven't you got past the zombie or the hunchback, or the armour, WHAT!!! you haven't even got to the other side of the abyss? You have been here two months now and you haven't got any further, oh well I suppose I had better help you out a little.

Have you got the plank of wood yet? No, well off you go then and get it, you should find it down by a large pile of rubble at the South end of the castle, unless you have been moving it around that is. Well, when you have got it take it to the abyss that is west of the kitchen and I will meet you there...

Ah, you're here are you at long last. What's that you're saying, you have already tried to make a bridge with the plank and it didn't work, well just try "DROP PLANK".

Now type in "LOOK" - that's better, we can see where we are now, and just look at that, we can now get across the abyss. Well let's go and see what we can find over here. Ummmm, looks as though we are in the servants quarters. If you look in the maids room you will find an empty bottle, bring it back here, oh before you go a word of warning don't pick up the garlic just yet.

Now you have got the bottle let's get back into the castle. Do you remember where the whiskey fountain is. You do, yes I thought you might. Well go and get some in the bottle. How? Simple - just type in "GET WHISKEY" (no you cannot drink some of it you need your wits about you to complete this adventure). Meet me by the quasi-quasimodo when you have it and bring the tin opener along with you, we will need it later on.

Now offer quasimodo the bottle, what do you mean it's a waste of good whiskey, do you want to solve this adventure or not. Now type in "OFFER BOTTLE". Now type in "LOOK". Well that had the desired effect did it not, we now have another new passage to explore. In you go and bring me the can of STP. Have you got it? Good, off we go

DRAC'S BACK

As promised a few months ago, Philip Riley lends a hand to all those souls lost in the Adventure 4-Pack game "Dracula". He also includes some more Questions and Answers and an expanded Adventure Contact list

then up the stairs to the suit of armour.

Now offer the can to the armour, and back down the stairs we go. What's that, the armour is following us, oh don't worry those sort of things happen in adventures from time to time, just try to ignore it. Now we have to try and get rid of the Zombie, just walk into the WHINE CELLAR, as soon as he sees the armour he will make a run for it. Type in "LOOK" again, you see it worked. Now what are you complaining about? The armour is still following you. Just type in "WAVE TIN" and he will soon leave you alone.

Well, I said I would get you out of trouble again and so I have - now it's up to you again as I have got to be going, see ya. Pardon? Will I be back again? Oh I dare say I could drop by later to see how you're getting along. Good luck, hope you make it out alive.

Well I made it out alive and just in time for a couple of points of interest. Firstly some of you are getting a little impatient. Due to the deadlines of the magazine, letters that are sent up to the attic can take a while to be published. If they come in late in the month they generally miss the deadline for the next month's issue and have to be put in the month after. Therefore letters received here late in June won't see the light of day until August. Sorry but that is the way

things go.

The next item is from Justin Mills who writes, "Mr. Riley (I like that bit) for the fans of adventurers attic could you start a club for adventure games where people could sell, buy and swap adventure games and solve and make new games." Well you've got to remember that setting up this sort of thing is an open invitation for software pirates, so I am not sure that the Editor will wear that one, but I'll ask him.

Now onto the finish and this month it comes from John Cohen who would like to say May your life be as bug-less as possible. I'll drink to that.

QUESTIONS

Justin Mills gets to ask the first question this month, he cannot find the explosives in Message from Andromeda, he thinks that they are in the storeroom but has not been able to find them as yet.

Justin also asks the next three questions concerning Forest at Worlds End. How do you kill the Elf? How do you use the bow and arrows from the valley of the shadows, and how do you go into the farmhouse?

Joseph Castellino would like help in locating the spies that have stolen the documents in Hacker. At the moment he is in the South Atlantic tunnel.

Lance Beament is stuck in the lift in Spellbound, can anyone tell him how to fix it so that he can reach the basement and ground floor.

Finally three questions concerning Castle Blackstar from John Cohen. He is stuck at the nest of golden eggs and excalibur and he would also like to know how to find the power orb.

ANSWERS

First answer is from Albert Alcoceba concerning The Hobbit (finding the ring to be precise). From the narrow place with the dreadful drop (about three locations from the beginning) go North to the cave. Ensure Thorin or Gandalf are with you. If you are not captured, wait until someone opens a crack and go down. You will be captured. From goblins

Dungeon get Thorin or Gandalf to help you out of the window. Go SW,D,N,SE,E, you will find the ring. To exit go N,D,D,U,N, wait for a crack to open and go up. You will be captured at various times but just keep trying.

To get into the ring of crystals in Warlord step into the ring wearing the cloak says Barry Hoole.

Rhondda Cook and Barry Hoole both let us know that to get past the mulberry tree in Arnold Goes Somewhere Else you must drop the wreath at the tree.

Barry also answered three questions concerning Kentilla. You get to the black castle in the boat, when in the boat you bail water with the chalice and wear wax in your ears to get past the sirens. Open the steel door in the castle across the moat by pulling the Gargoyles arms, and Elva will shoot Darg-Vool with the bow and

arrows.

If that is not enough for you then Barry has also sent in these answers for The Pawn. To move the boulder tie the rake to the hoe with the shirt, the wheelbarrow has no use. You should kill the adventurer to obtain a maximum score (give him the chest). To pass dragon by "white at shadows" point at shadows. To climb down the hole in the paper room, after tying rope to hook you must tear paper with the trowel and then "CLIMB DOWN ROPE" (not just down). Open the safe with the blue key, examine under safe to find the ballot paper. Put the ballot paper in large box (for Gringo) for maximum score.

Finally another one from Barry concerning Smugglers Cove, the point scored in the palatial room is via "ENTER PENTACLE", "WEAR RING", "RUB RING", which opens an exit to the South.

ADVENTURER'S CONTACT LIST

(Please don't abuse the help being offered)

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The Hobbit, Forest at Worlds End

Arnold goes Somewhere Else
Mountain Palace Adventure
Time Search

Warload, The Experience
Message from Andromeda
Forest at Worlds End, Phoenix Mission

Adventure Quest, The Hobbit,
Zork II, The Neverending Story (1)
Wishbringer

Jewels of Babylon
The Trials of Arnold Blackwood

Seabase Delta, The Trials of Arnold
Blackwood, Subunk, Colossal
Adventure, Dracula (parts 1&2)

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Colossal Adventure, Crystal Quest, Desert Island, Dun Darach, Dungeon, Adventure, Emerald Isle, Enchanter, Espionage Island, Eye of Bain, Feasibility Experiment, Golden Apple, Golden Baton, Ground Zero, Guild of Thieves, Heavy on the Magick, The Hobbit, Inca's Curse, Infidel, Invincible Island, Jewels of Babylon, Kentilla, Last Will and Testament, Leather goddesses of Phobos, London Adventure, Lords of Time, Mansion Quest, Marsport, Mission X, Moonmist, Mordons Quest, Murder at the Manor, The Neverending Story, The Pawn, Pharoahs Tomb, Planet of Death, Return to Eden, Return to Ithaca, Rifts of Time, Sherlock, Ship of Doom, Smugglers Cove, Snowball, Starcross, Subunk, Ten Little Indians, Terrormolinos,, Time Machine, Time Quest, Tir Na Nog, Traveller, Trials of Arnold Blackwood, Valhalla, Volcanic Dungeon, Warlord, Wise and Fool of Arnold Blackwood, Wishbringer, Worm in Paradise, Zork II.

Aftershock, Imagination
Seabase Delta, Necris Dome

Adventure Quest, The Pawn, Mordens
Quest, Mind Shadow, Sorcerer,
Return to Oz, Enchanter, Aftershock, The
Neverending Story, Imagination, Message
from Andromeda, Red Moon, Mural.

Acheton, Adventure Quest, Arnold goes
Somewhere else, Aftershock, Ashkeron,
Black Crystal, Brawn Free, Castle Advent.,
Castle Blackstar, Circus, Classic Adventure,

(Apologies to James Green for getting part of his address mixed up with his list of games last month).

Hint Sheet

LORD OF THE RINGS - 1

from Albert Alcoceba

THE AIM: Kill 9 Black Riders and 3 Black Horses. Deliver the Ring safely over the bridge leading to Rivendell far to the East.

GENERAL TIP: Save the game often. You will need to develop some very "food efficient strategies" to complete this adventure.

BARROW-WIGHT: Will let you pass if you are invisible.

BLACK RIDERS: 3 rules - cleave their skulls, or use Elf stones, or RUN!!

BOGS AND MARSHES: R.I.P.

ELF STONES: (alias Green Jewels). Visit Radagast. You will need one for each Black Rider. Ensure only one is carried per Hobbit. Look in tall trees, in plant pots and in fissures.

FARMER: Be friendly, he will provide some food and info.

FERRY: Use it if you wish, but look out for the RED HERRING.

FOG: See Bogs and Marshes if it will not let you move. You will only survive it once.

FOOD: Always scarce. Treasure it. Take it, but do not eat it unless you have to.

GATE/SMALL HATCH: Knock on the gate until someone opens the hatch. The gate leads to Bree, where Black Riders are expecting you, so best keep your identity a secret.

GREEN KNIGHT: Kill him. It helps if you are a bit drunk. Take his medallion as proof

of your victory. Keep Strider away.

FISSURE: You will lose your friends in here. Seek the help of Tom Bombadil. Tell him where to go, but do not go there yourself. He will give you some food as well.

HOBBIT FRIENDS: Always remember they eat valuable food. They don't tell you if they are hungry, but just seem to pass out when you least expect it. You don't need them with you all the time.

LAKE: There is a short-cut from East to West here! Located to the North of the main road.

MATHOM HOUSE: Visit the Mayor first. If you look around, a source of light might finally dawn on you. Read the book while you are at it.

MAYOR: (Where does one normally find a Mayor?) The record is boring. The Mayor doubly so.

MERRY: Lives East and South of river. If you don't find him very quickly, he will wander off and leave a note, never to be seen again. So hop to it before you do anything else.

MOVING TREES: They move in a regular pattern. Ensure you write down how they move at each location, and map the forest. Wait and look to study their movements. You can move in a given direction after you have been told you could have moved in the previous one. Exit is SE from a Grassy Place, but look for a climbable tree in a Gloomy Place first.

MONK: Will let you pass to see Radagast if you prove your killing abilities.

RADAGAST: Do not carry too much when you visit. He has plenty to give you, including a useful secret.

RED LADY: Have no mercy. Do not be fooled by her sweet seductions. She will drop something to prove your worth.

RING: Not always as dangerous as we are

led to believe. You may wear it. No one else will see you. (Except Black Riders, drats!) Don't let your friends wear it though! Unfortunately, as long as you have it, you will be a prime target for Black Rider's evil stares, as you will no doubt find out.

STRIDER: (alias Tall Dark Stranger.) You will find him in Bree. Follow him if all your duties are complete. Otherwise, he will come with you after being told twice.

TUNNEL: You will need a light, otherwise you may crash (and so will the program, at least in some versions). Do not exit the tunnel and leave your friends in the dark, let them lead the way.

WARNING FROM GANDALF: The place where this is found is a good hiding place for very valuable objects. Perhaps great fires, like lightning, do not strike twice on the one place, not to mention other nasties!

IF YOU ARE STILL LOST: Contrary to what the manual tells us, the multi-player version is easier than the single player one. It allows more economical use of Hobbits!

This is our eighth Hint Sheet and earns Albert a cheque for \$25. Now that you have the format the sheet should take, why not cash in your experience and send your solutions (don't give whole game away) to:

*The Editor (Hint Sheets),
The Amstrad User,
1/245 Springvale Road,
Glen Waverley, Victoria. 3150.*

NATIONWIDE USER GROUPS

WESTERN AUSTRALIA

ALBANY AMSTRAD USER GROUP

President: Gerry Barr (098 41 6884)
 Secretary: Steven Hands (098 44 7807)
 Treasurer: Gavin Grose
 Venue: Pries Street Centre, 14 Pries Street, Albany on the first and third Mondays of each month at 7.00 pm.
 Mail: 20 Anuaka Road, Albany, WA 6330

AMSWEST (Perth)

President: Thelma Ardron (09 361 8975)
 Vice Pres: John Firth (09 364 1360)
 Secretary: Neil Miller (09 272 3994)
 Treasurer: Darryl Dunlop (09 448 3994)
 Venue: 238 Bagot Road, Subiaco 6008 on the first and third Tuesdays of each month at 7.30.

AMSWEST (Blackwood) USERS GROUP

This small group is affiliated to AMSWEST (Perth). For more details contact George Muscat on (097) 61 1488.

ROCKINGHAM-KWINANA AMSTRAD USER GROUP

President: Ray Forsyth
 Vice-Pres: Larry Spozetta
 Treasurer: John Hille
 Secretary: Ben Hille (095 27 5246)
 Venue: Cooloongup Primary School, Westerly Way, Cooloongup (Rockingham), every second Wednesday at 7.30 pm. and every other second Tuesday at Medina Primary School, Medina Ave, Medina at 7.30pm.
 Mail: The Secretary, R-KAUG, 104 Milina St, Hillman, 6168

SOUTHSIDE AMSTRAD USER CLUB

President: W. Van Der Kool (09 271 1085)
 Secretary: Steve King (09 354 2068)
 Treasurer: Eric Tytherleigh (09 390 8865)
 Venue: Huntingdale Primary Sch., Malilda Rd. Huntingdale every 2nd and 4th Wednesday of each month from 7.00 pm.
 Mail: The Sec., Southside Amstrad Users Club, 61 Keslake Way, Parkwood, WA 6110.

AMSTRAD COMPUTER CLUB TOM PRICE

President: Colin Smith (091 89 2074)
 Secretary: John Eliot (091 98 1735)
 Treasurer: P. & C. Montgomery (091 89 2398)
 Venue: Primary School every 2nd Wednesday night. Contact the above for more details.

SOUTH AUSTRALIA

AMSOUTH AMSTRAD USER'S GROUP

President: Drew Ames (085 371 0151)
 Treasurer: Bob Bleachmore (085 56 2048)
 Secretary: Ross Kennewell (08 386 2737)
 Venue: Christies Beach High School, Western Section, Beach Road, Christies Downs (adjacent to Staff Car Park off Mander Road) every 2nd Wednesday at 7.30.
 Mail: PO Box 612, Noarlunga Centre, SA 5168

AMSNORTH AMSTRAD USER'S GROUP

Organisers: J.T. Clarkin (08 262 6342)

R. Britton (08 258 7861)
 Venue: Lacrosse Hall, Terama Street, Gepps Cross every Wednesday at 7.00 p.m.

AMSTRAD COMPUTER CLUB INC. (SA)

President: Frank Matzka (08 382 2101)
 Vice Pres: Andrew McDade (08 79 5414)
 Treasurer: Les Jamieson (08 356 9612)
 Secretary: Ross Barker
 Venue: Church Hall, 15 Clayton Ave, Plympton between 6.30 and 9.00 each Tuesday.
 Mail: PO Box 210, Parkholme, SA 5043

NORTHERN COMPUTING SOCIETY INC.

President: Grant Wilson (08 250 2760)
 Treasurer: Percy Cook (08 248 1065)
 Secretary: Judith Thamm (085 20 2377)
 Venue: Salisbury North Primary School, cnr. Bagster & Woodyates Rds every Wednesday from 7.00.
 Mail: PO Box 269, Two Wells, SA 5501

PORT LINCOLN AMSTRAD USERS GROUP

Contact: Rita Bascombe (086 82 1633)
 Venue: Third Tuesday of each month from 8.00 pm.
 Ring above number for address.

PORT PIRIE AMSTRAD USER GROUP

President: Doug Gowers (086 36 5206)
 Treasurer: Dave Green (086 32 6834)
 Secretary: Tim Eckert
 Youth Rep: Mark Fusco (086 36 2452)
 Venue: Education Ctr, 370 The Terrace, Port Pirie every 2nd and 4th Monday from 7.30 pm.
 Mail: The Pt. Pirie Amstrad User Group, c/o D.T. Green, 207 Senate Rd., Pt. Pirie, SA 5540.

SOUTH EAST AMSTRAD USER GROUP (SA)

Contact: Neil Taylor (087 25 8068)
 Venue: Mount Gambier from 1.00p.m. to 4.00p.m. on the 3rd Sunday of each month. Ring above number for address.

NORTHERN TERRITORY

DARWIN AMSTRAD USER GROUP

President: Kevin Bateman (089 32 1463)
 Treasurer: Jeff Powis (089 27 5557)
 Secretary: Kiem Le (089 32 1828)
 Venue: Meetings are held twice monthly. Contact any of the above for more details.
 Mail: 45 Priest Circuit, Gray, Palmerston, NT 5787

VICTORIA

CENTRAL AMSTRAD USER SOCIETY

President: Fred Gillen (03 580 9839)
 Vice-Pres: Dennis Whelan (03 367 6614)
 Treasurer: Doug Jones (03 560 8663)
 Secretary: Craig Tooke (03 359 3736)
 Venue: Bogart's Restaurant on the corner of Victoria and Errol Streets, North Melbourne on the first Sunday of each month starting at 1.00 pm.

EASTERN AMSTRAD USER GROUP INC.

President: Tony Blakemore (03 890 3116)

Secretary: Peter Douth (03 763 2908)
 Treasurer: Ron Dunn (03 807 7868)
 PCW rep: Ron Hawthorn
 Venue: St. Ninian's Church Hall, cnr. McCracken Avenue and Orchard Grove, South Blackburn on the 1st Sunday of each month from 1.00pm.
 Mail: 6 Moss Court., Rowville, Vic 3178

GEELONG AMSTRAD USER CLUB

President: Arthur Pounsett (052 78 2160)
 Vice-Pres: Diethard Kuhlmann (052 81 9200)
 Secretary: Mick Stone (052 91 505)
 Venue: South Barwon Community Services Ctr, 33 Mount Pleasant Rd, Belmont on the first Wed. of each month, from 7.30p.m
 Mail: 346 Autumn St., West Geelong, 3218.

GOULBURN VALLEY AMSTRAD USERS CLUB

President: Shad Aitken (058 52 1001)
 Sec/Treas: Bill Brown (058 21 7569) or (058 22 1011)
 Venue: 98 Nixon Street, Shepparton on the first floor every third Wednesday from 7.30 pm.

LATROBE VALLEY AMSTRAD USER GROUP

President: Stan Hughes
 Secretary: M.G. Donaldson (051 345 711)
 Venue: Morwell Neighbourhood House, 17 Symons Crs., Morwell on the first Thursday of each month at 7.30pm.
 Mail: PO Box 947, Morwell, Vic 3840

MARYBOROUGH AMSTRAD USER CLUB

President: Chad Banfield (054 68 1351)
 Treasurer: Brendan Severino (054 61 3191)
 Secretary: J. Fothergill (054 75 2667)
 Venue: Maryborough CCC each week on Tuesday from 12.10 p.m. to 12.45 p.m.

MOUNTAIN DISTRICT AMSTRAD USER GROUP

President: David Jamieson (03 870 1016)
 Treasurer: Ian Pearson (059 965 019)
 Secretary: Craig Bell (03 758 9921)
 Venue: Country Womens Association Hall, 4 Sundew Avenue, Boronia from 7.00 pm. every second Monday of the month.
 Mail: PO Box 132, The Basin, Vic 3154

NORTHERN AMSTRAD USER GROUP

Contact: Brian Ellis (03 469 4425 A/H)
 Venue: Every three weeks in Brunswick West for CPC owners with a sincere interest beyond games.

SOUTHERN AMSTRAD USER GROUP INC.

President: Noel Sheard (03 786 5469)
 Secretary: Bob Patterson (03 786 6976)
 Treasurer: Christine Donaghey
 Venue: Karingal Tennis Club, Gretana Crescent, Frankston every third Tuesday from 7.30p.m.
 Mail: The Sec., PO Box 100, Seaford, Vic 3198.

SUNBURY MELTON AMSTRAD USER GROUP

Contacts: Wayne Urmston (03 744 2719)
 Norman McEntee (03 743 7104)
 Venue: Toolern Vale Hall, Toolern Vale every third Saturday at 10.00 a.m.

WENDOUREE AMSTRAD USER GROUP

Contact: Brad Maisey (053 44 8356)
 Venue: Cnr. Charles and Appley Drive, Cardigan Village on the first Sunday of the month at 3.00 pm.

WESTERN COMPUTER CLUB

Venue: Fairbairn Kindergarten, Fairbairn Road, Sunshine on alternate Tuesdays from 6.30 pm.
 Mail: PO Box 161, Laverton 3028.

ACT

CANBERRA AMSTRAD USER'S GROUP

Convenor: Paul Kirby (062 86 5460)

Secretary: Michael Hickey (062 58 5719)
 Treasurer: Rod MacKenzie (062 54 7551)
 Venue: The Oliphant Building, ANU, Canberra on the first Wednesday of each month from 7.30 pm.
 Mail: PO Box 1789, Canberra, ACT 2601.

NEW SOUTH WALES

AM-USER's (North Ryde)

Contact: Lawrence Walters (02 888 1898)
 Venue: Meeting Room at 2 Leisure Close, North Ryde from 7.30 p.m. on the first Tuesday of each month.

BLUE MOUNTAINS AMSTRAD USERS

President: Bob Chapman (047 39 1093)
 Vice Pres: Dennis Shanahan (047 39 4568)
 Treasurer: Peter Traish (047 53 6203)
 Secretary: Christine Preston (047 51 4391)
 Venue: Springwood Neighbourhood Centre, Macquarie Road, Springwood on the 4th Wednesday of each month at 8.00pm.

CENTRAL COAST AMSTRAD USERS CLUB

President: Lloyd Mitchell (043 88 2950)
 Secretary: Douglas Green (043 42 2568)
 Treasurer: Pat Thompson (043 32 9095)
 Venue: Mingara Recreation Club, Adelaide St, Tumbi Umbi every 2nd and 4th Monday at 7.30 p.m. sharp.

COFFS HARBOUR AMSTRAD COMPUTER CLUB

President: Bruce Jones (066 52 8334)
 Secretary: Don Donovan (066 52 6909)
 Treasurer: Brian Claydon (066 49 4510)
 Venue: Orara High School, Joyce Street from 7.00 on the first Friday of each month.

FAIRFIELD MICRO USER GROUP

Contact: Ekrem [after 6.30 pm] (02 609 6581)
 Venue: Room 65, Canley Vale High School, Prospect Road, Canley Vale every third Wednesday from 7.00.

HAWKESBURY AMSTRAD USER GROUP

President: Terry Webb (045 76 5291)
 Secretary: Dave Keen (045 77 5536)
 Venue: Richmond Swimming Club Rooms every third Tuesday of the month at 7.30 pm.

ILLAWARRA AMSTRAD USERS CLUB

President: Paul Simpson (042 27 1574)
 Secretary: Ken Waegøle (042 56 6105)
 Publicity Off: Steve Parsons (042 96 3658)
 Venue: AGA Gremania Club, Berkeley at 2.00 pm. every third Saturday.

LISMORE DISTRICT AMSTRAD COMPUTER CLUB

President: Max Muller (066 337 113)
 Vice Pres: Nick Van Kempen (066 874 579)
 Sec/Treas: Laurie Lewis (066 62 4542)
 Venue: Goonellabah Public School, Ballina St. on the last Tuesday of each month from 6.30.
 Mail: 20 Johnston Street, Casino, NSW 2470

S & W MILLER AMSTRAD USER'S CLUB

President: Wal Sellers (049 33 5459)
 Secretary: Nikki Lee (049 33 5459)
 Treasurer: Georgina Todd (049 66 2788)
 Venue: Maitland Park Bowling Club, Maitland on the second Tuesday of each month at 7.30pm

MURWILLUMBAH AMSTRAD USERS GROUP

President: Nick Bruin (066 79 3280)
 Vice Pres: Kel Philip (066 77 1440)
 Secretary: Laura Goode (066 72 2499)
 Treasurer: Lorraine Montgomery (066 72 1823)
 Venue: Murwillumbah High Sch. on the 2nd Wednesday of each month at 7.00p.m. c/o Post Office, Burringbar, 2483

NEWCASTLE AMSTRAD USER GROUP

President: John Harwood
 Treasurer: Erica Harwood
 Venue: Contact John Harwood at the address shown below.
 Mail: PO Box 18, Charlestown, NSW 2290

PCW AUSTRALIA GROUP

President: David Springett (02 660 4515)
 Secretary: David Chamberlain (047 77 4396)
 Venue: Burwood RSL Club, 96 Shaftsbury Road, Burwood every second Tuesday of the month at 7.30 pm.
 Mail: PO Box 97, Annandale, NSW 2038.

PORT MACQUARIE AMSTRAD USERS GROUP

Mail: Craig Tollis, Box 584, Pt. Macquarie, 2444.

SYDNEY AMSTRAD COMPUTER CLUB

President: Tom Caldwell (02 661 7573)
 Sec/Treas: Reed Walters (02 560 9487)
 Venue: Camdensville Comm. Ctr., Newtown on the 1st Saturday of every month at 2.00 p.m. For more details contact the Secretary between 6.00 p.m. and 9 p.m.
 Mail: PO Box 423, Matraville, 2036

SYDNEY PC1512 USER GROUP

Contact: Geoff Craine (02 76 6467) A/H (02 412 9213) B/H
 Venue: To be arranged; meeting initially on the third Tuesday of each month at 7.00 pm.

QUEENSLAND

BRISBANE AMSTRAD COMPUTER CLUB

President: John O'Connor (07 271 3350)
 Vice Pres: John Digby (07 351 2553)
 Secretary: Bob Ashe (07 355 5699)
 Treasurer: Ivan Dowling (07 269 8795)
 Tech. Editor: Franz Hendickx (07 356 0633)
 Venue: Main meetings in Room 15a of Junction ParkState School, Waldheim St., Annerley starting at 7.30p.m on the 1st Tues. of the month.. Another is held at Wynnum Central State H.Sch, FlorenceSt, Wynnum Central on the 3rd Saturday of each month at 1.00p.m. The coordinator is Warren Kennedy (07 351 4232).
 A third is held at Newmarket State Sch., Banks St., Newmarket on the second Saturday of each month at 1.30p.m. The co-ordinator is Cherry Shrier (07 351 6179).
 Mail: PO Box 167, Alderley, Qld. 4051

BUNDEBERG AMSTRAD USER'S GROUP

President: Ray Babbidge (071 72 1223)
 Secretary: Clive Barrett (071 71 3668)
 Treasurer: Sheila Coe (071 72 8884)

Venue: The third Tuesday of the month. For more details contact the above.
 Mail: 11 Laack St, Bundaberg, QLD 4670.

CABOOLTURE AMSTRAD USER GROUP

President: John D'Archambaud (071 95 4860)
 Secretary: Stephen Yenoh
 Treasurer: Craig Deshon
 Venue: Contact above number for more details.

CAPRICORN AMSTRAD USERS GROUP

President: Graeme Annabell (079 27 4915)
 Sec/Treas: Anthony Trost (079 33 1951)
 Venue: Waraburra State School, Johnson Road, Gracemere on the first Friday of each month at 7.00 pm.
 Mail: 4 Sunrise Crescent, Gracemere, 4702

COMPUTER USER GROUPS OF AUSTRALIA Pittsworth Branch

President: David Siebuhr
 Contact: Ron Langton (076 931 690)
 Venue: Every first Tuesday of every month from 5 pm. at the St. Peter Lutheran Church Hall, Grand Street, Pittsworth.
 Mail: CUGA, PO Box 166, Pittsworth, 4356

GOLD COAST AMSTRAD USER GROUP

President: Mark Abbott (075 31 2114)
 Treasurer: Pam Scott
 Secretary: Mary Maclaren
 Venue: Benowa State High School, Mediterranean Drive, Benowa on the first Saturday of each month at 2.00 pm.
 Mail: 17 Ewan Street, Southport, Qld 4215

IPSWICH AMSTRAD USER GROUP

Contact: Peter Wighton (07 288 4571)
 Venue: Every second Wednesday from 7.15 p.m. at Bremer High School, Blackstone Rd, Raceview

MACKAY AMSTRAD USER GROUP

Contact: Des Mulrealey (551 409)
 Ron Coates (547 222)
 Venue: Meet every second Sunday morning. Contact the above for location and time.

PENINSULA AMSTRAD CLUB (amalgamated with BACC)

President: Ivan Dowling (07 269 8795)
 Treasurer: Keith Johnston (07 203 2339)
 Secretary: Tracie Payne (07 267 6645)
 Venue: Kippa-Ring State School Library, Elizabeth

Avenue every third Tuesday of the month at 7.30 pm.

SOUTHSIDE AMSTRAD USER GROUP (QLD)

President: Michael Toussaint (07 200 5414)
 Vice-Pres: Peter Incoll (07 208 2332)
 Secretary: Mick Howe (07 209 1839)
 Treasurer: Wayne Stephens (07 287 2459)
 Librarian: Carol Watts (07 287 2882)
 Venue: Loganlea State High School (in the Communications Room) every 3rd Sat. of the month starting at 2.00 p.m. A Basic programming course is held fortnightly, 10 Carramar St, Loganlea, 4204

TOOWOOMBA AMSTRAD USERS GROUP

President: Stephen Gale (076 35 5001)
 Vice-Pres: Priscilla Thompson (076 35 5092)
 Secretary: Adrian Dunsmore (076 91 1561)
 Treasurer: Edwin Gerlach (076 33 1054)
 Venue: Toowoomba Education Centre, Baker Street, Toowoomba on the 4th Monday of each month starting at 7.30 pm.

TOWNSVILLE AMSTRAD USER GROUP

President: Ian Wallace (077 73 1798)
 Vice Pres: Doug Selmes (077 79 6011 xt252)
 Treasurer: Chris Nisen (077 79 6299)
 Secretary: Alistair Buckingham (077 73 3955)
 Venue: Science Block of the Kirwan High School in Thuringowa Drive on the first and third Tuesdays each month at 7.30pm.

THE WARWICK AMSTRAD USER GROUP

President: Mrs. D. Christensen
 Secretary: John Wode (076 61 5176)
 Treasurer: Neville Christensen

WEIPA AMSTRAD USERS CLUB

President: Andrew Seaborn
 Vice-Pres: Dave Wootton
 Treasurer: Frances Casey
 Secretary: Gary Chippendale (070 69 7448)
 Venue: Noola Court in Weipa. Contact above for more details.
 Mail: 15 Noola Court, Weipa, QLD 4874.

WESTERN SUBURBS AMSTRAD USERS GROUP

President: Peter Wighton (07 288 4571)
 Secretary: Jimmy James (07 376 1137)
 Contact: Keith Jarrot (07 376 3385)
 Venue: The Jamboree Heights State Primary School, 35 Bearland Street, Jamboree Heights at 1.30 p.m. on the first Saturday in each month.
 Mail: Jimmy James, 36 Penong Street, Westlake, Brisbane 4074.

TASMANIA

SOUTHERN TASMANIAN AMSTRAD USER CLUB

President: Frank Self (002 49 5499)
 Secretary: Peter Campbell
 Treasurer: Cindy Campbell
 Publ. Off: Danny Britain (002 47 7070)
 Venue: Elizabeth Matriculation College on the first Wednesday of each month from 7.30 pm.

NORTHERN TASMANIA AMSTRAD COMPUTER CLUB

President: Keith Chapple (003 26 4338)
 Treasurer: Shane Crack (003 97 3298)
 Secretary: David Double (003 44 4243)
 Publicity: Bobby Lockett (003 44 8972)
 Tech. Off: Richard Wilson (003 93 1437)
 Junior Del: Jay Donat (003 31 6597)
 Venue: Launceston Community College (opposite Park Street) in Room 27 on the first Saturday of the month at 5.00 p.m.

N.W. COAST AMSTRAD USER'S CLUB

President: Peter Gibson (004 24 7586)
 Treasurer: Robert Simpson
 Secretary: Karen Stevenson
 Venue: Hellyer College, Mooreville Rd, Burnie on the third Friday of each month at 6.30.
 Mail: Secretary, 112 Payne St, Burnie 7320

NEW ZEALAND

THE AMSTRAD COMPUTER CLUB OF CANTERBURY

Contact: Christine Linfoot 897 413
 Ian Orchard 524.064
 Venue: Four Avenues School, cnr. Madras Street and Edgeware Road, Christchurch 1 on the fourth Wednesday of each month.
 Mail: Box 23.082 Bishopdale, Christchurch, NZ.

WELLINGTON AMSTRAD USER GROUP

Contact: Tony Tebbis 791 072 (evgs)
 Venue: Cafeteria, NZ Fisheries Research Division, Greta Point, on the first Monday of each month from 7.30 pm.
 Mail: PO Box 2575, Wellington, New Zealand.

User Group Contact List

Please note that the following names are listed as contacts for new user groups and should NOT be viewed as a problem solving service.

NSW

Nick Rogers	Bogan Gate	(068) 64 1170
Chris Craven	Canowindra	(063) 44 1150
Trevor Farrell	Coolah/Mudgee area	(063) 77 1374
David Higgins	Cooma/Monaro	(064) 52 1531
Paul Wilson	Moruya	(044) 74 3160
Frank Humphreys	Mummulgum	(066) 64 7290
Reuben Carlsen	North Sydney	(02) 957 2505
Stephen Gribben	Singleton	(065) 72 2732
Ken Needs	St. Ives	(02) 449 5416
Chas Fletcher	Toongabbie	(02) 631 5037
Nick Bruin Snr.	Tweed Valley	(066) 79 3280

VIC

Brian Russell	Ballarat	(053) 31 2058
C. van de Winkel	Ballarat	(053) 313 983
Rod Anderson	Camperdown	(055) 93 2262
Paul Walker	Heathmont	(03) 729 8657
Terry Dovey	Horsham	(053) 82 3353
Andrew Portbury	Leongatha	(056) 62 3694
R. Kernebone	Milidura	(050) 23 3708
Angela Evans	Mt. Evelyn	(03) 736 1852

Keith McFadden	Numurkah	(058) 62 2069
Maureen Morgan	Warnambool	(055) 67 1140

QLD

Beryl Schramm	Boyne Island	(079) 73 8035
Steven Doyle	Caloundra	(071) 91 3147
Ric Allberry	The Gap	(07) 300 1675
Kylie Telford	Goondiwindi	(076) 76 1746
D.F. Read	Ingham	(077) 77 8576
Ian Jardine	Pialba	(071 28 3688)

SA

Lindsay Allen	Murray Bridge	(085) 32 2340
Michael Spurrier	Murray Bridge	(085) 32 6984
Mrs. S. Engler	Penola	(087) 36 6029

WA

Barry Kauler	Narrogin	(098) 83 1011
Graeme Worth	Scarborough	(09) 341 5211
P.M. Nuyens	Waroona	(095) 33 1179

TAS

Conal McClure	Scottsdale	(003) 52 2514
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NT

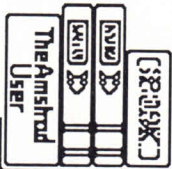
G.P. Heron	Tiwi	(089) 27 8814
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For new readers: if you want to start a group in your area just drop us a line with the relevant details and we will add you to the list.

The Amstrad User

MAIL ORDER SHOPPING

Send orders to The Amstrad User
1/ 245 Springvale Road,
Glen Waverley, Victoria 3150
Tel: (03) 233 9661



BOOKS

CPC TITLES

	Subscriber Price	Normal Price
Advanced Amstrad Programming Techniques	\$23.95	\$25.95
Advanced User Guide	\$19.75	\$21.95
Amstrad Compendium	\$21.65	\$23.95
Basic BASIC Temp O/S - Due Aug		
Childs' Guide to the Amstrad Micro	\$12.65	\$13.95
Disc System, The Amstrad CPC 464	\$26.15	\$28.95
Filing Systems and Data Bases for the CPC464	\$28.95	\$30.95
Graphics Programming Techniques	\$23.45	\$25.95
High Energy Programs for the Amstrad	\$ 9.95	\$ 9.95
Ins and Outs of the Amstrad	\$21.65	\$23.95
Machine Code for Beginners	\$18.95	\$21.95
Machine Lang. for the Absolute Beginner	\$21.65	\$23.95
Making Music on the 464/664 (OK for 6128 too)	\$21.75	\$23.95
Powerful Programming for Amstrad 464/664/6128	\$23.55	\$27.05
Practical "C"	\$26.80	\$29.65
Ready made Machine Language routines	\$21.65	\$23.95
Structured Programming on 464/664/6128	\$27.95	\$30.95
Whole Memory Guide - 464	\$27.95	\$30.95
Writing Adventure Games on 464/664	\$21.65	\$23.95

PCW TITLES

Advanced LocoScript on the Amstrad PCWs <<N E W>>	\$37.50	\$39.50
Desktop Publishing with the Amstrad PCW <<N E W>>	\$33.95	\$35.95
LocoScript Pocketbook	\$16.95	\$17.95
LocoScript2 and the Amstrad PCW Computers - a complete guide	\$41.00	\$43.00
Mallard Basic - Introduction and Reference by Locomotive	\$37.50	\$39.50

Mastering the Amstrad PCW 8256/8512	\$29.50	\$32.25
Program your PCW	\$29.95	\$32.95

LOGO TITLES

LOGO Pocketbook	\$16.95	\$17.95
Practical Logo on the Amstrad (under CPM+)	\$25.95	\$27.95
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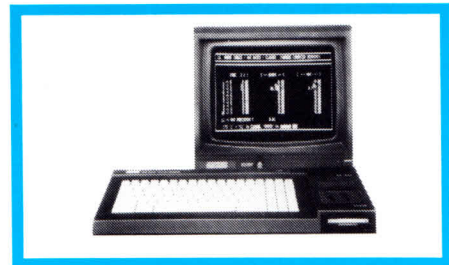
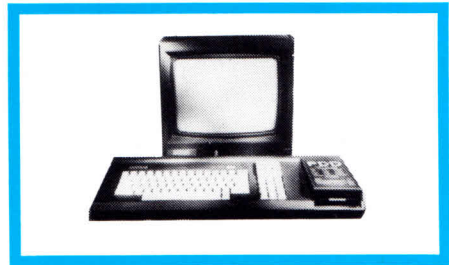
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