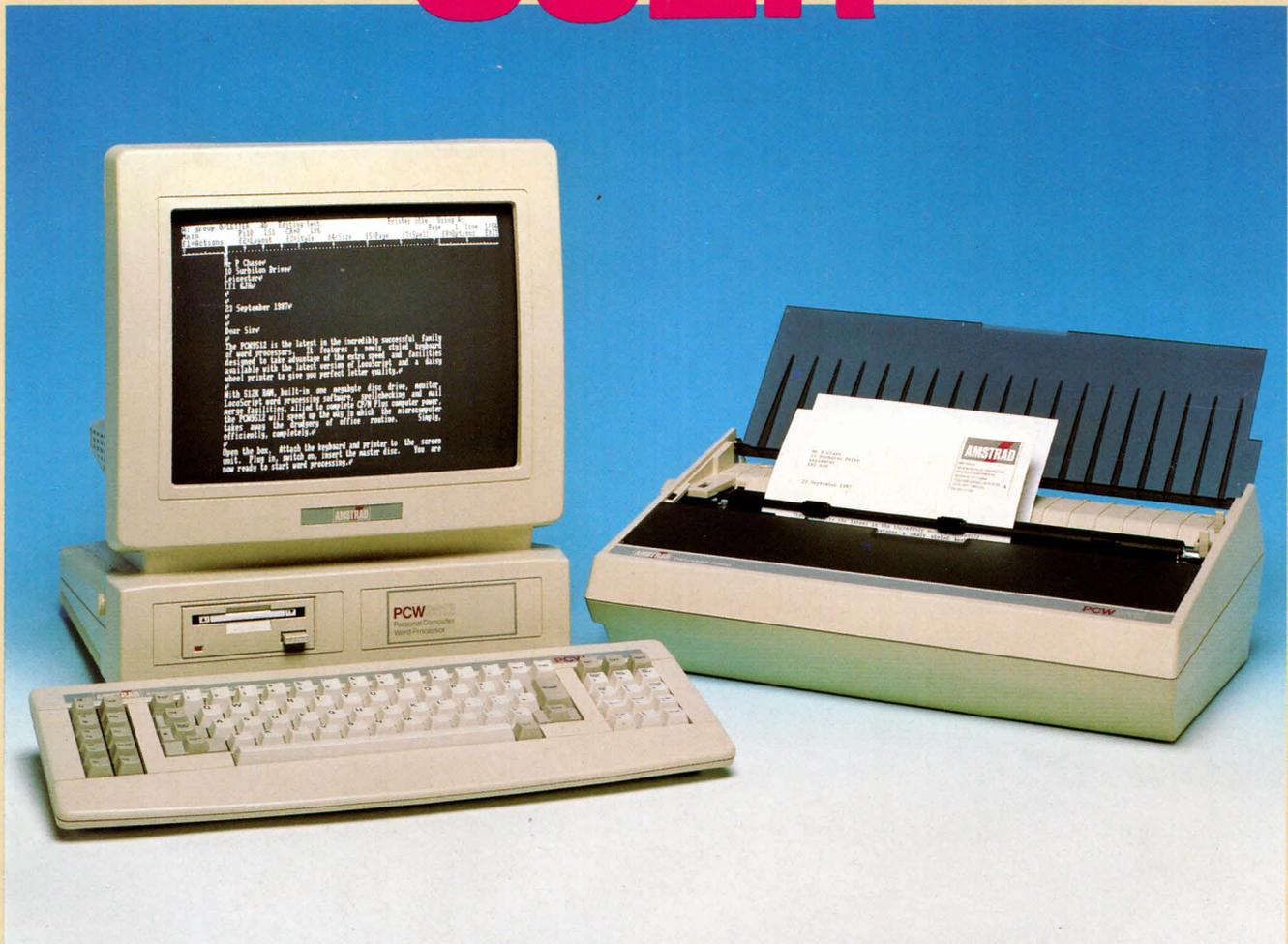


The
Aussie Mag
for Amstrad owners

THE AMSTRAD USER

Issue No. 41 \$4.25

June 1988



- ***New CPC series on structured programming + a look at four printers + the final part of the Patience card game***
- ***Full review of the PCW9512 + Desktop Publishing concepts + two utility type-ins + PCW Year Disc***
- ***PC disc utilities + help on numbers and strings***

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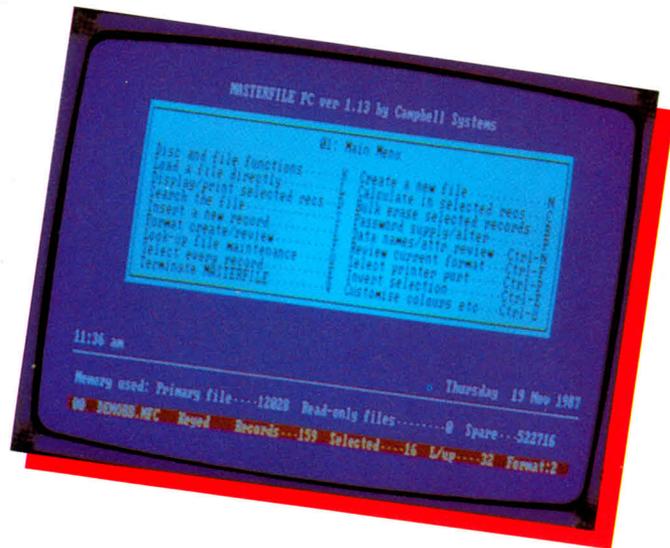


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THE AMSTRAD USER

Issue No. 41 June 1988

Letters - your views, advice and comments from the mailbag 2

Classified Ads - the official order form to reach over 8000 readers of The Amstrad User 4

News - nearly four pages of news from both home and abroad 8

New User Group Contacts 9

Bank Manager - the third part of a series on how to use the 6128's extra 64k by Anthony Trost 10

Cheat Mode - more score busting pokes 13

Word Work: 4 - word processor and printer tips 15

Hot Tips - programming pointers including 'Hackers Only' for the whiz kids 17

Year Disc 8 for CPC users - all the published programs from issues 37 to 40 on one disc 19

Spheriscreen - a tutorial type-in which will take a normal screen and distort it 20

Mail Order Software for the CPC464, 664 and 6128
An updated list of what's on offer this month 22

Three Great Games - reviews of Indiana Jones and the Temple of Doom, Transmuter and Gary Lineker's Super Star Soccer 23

Mail Order Software for PCW's and PC's
Take your pick while stocks last 25

The PCW 9512 - a full review of the new PCW to be released in Australia this month 26

Book Look - a leaf through two new titles 31

Tip-Offs - the answer to PCW user's nightmares 33

DIY Desk Top Publishing - the concepts behind producing a small publication 36

PCW YEAR DISC - sixteen months of PCW type-ins all on one disc plus some Public Domain games and utilities to run under CP/M 38

Double Douceur - two type-in utilities 39

Brainstorm - an ideas processor from Reckon Software for the whole Amstrad range 42

Compatibles Corner - DiscCopy and DiscComp discussed by Chris Collins 44

PC Help - a closer look at numbers and strings and continuing with coordinates 46

Studio 100 - Amstrad's new studio sound system .. 49

Introducing Arnold to animation - the concept behind animation from Gary Koh 51

Life after your Basic manual - a new series on structured programming from Paul Gerard 54

Patience - the second and final part of the 'parlour' card game converted by Don O'Connor 57

Printers on Parade - four non-Amstrad printers 59

Conway's LIFE - Petr Lukes provides a classic modelling program from Conway's maths 57

Adventurer's Attic - Artificial Intelligence plus your Questions and Answers 61

Books, Binders and Back Copies - plus Year Discs and tapes for CPCs 64

ADVERTISER'S INDEX

All Stamps and Services	3
Infocom Computers	45
Living Image	6/8
Nunawading Electronic World	7
Pactronics	41/43
Reckon Software	35
Solo Software	5

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

Side 1:	BANKCHEK	-9	BANKCL	-17	BANKCNT	-25
	BANKEX6	-35	BANKPART	-44	BANKSRCH	-55
	EFFECTS	-66	GRAFEX1	-83	HELIDEMO	-96
Side 2:	SPRTEDIT	-8	PATIENCE	-33	LIFE	-98

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.

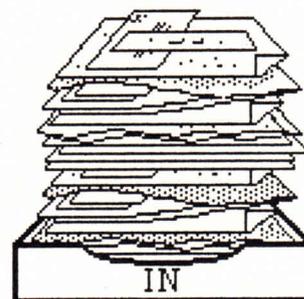
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liability whatsoever for any mistakes or misprints. Contributions are welcome from readers or other interested parties. In most circumstances the following payments will apply to published material: Cartoons \$10.00 and a rate of \$15.00 per page for 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



Regarding the letter from F. Wellman printed in the April issue of TAU, who wishes to know how to echo screen output to the PCW printer. In fact, if you load my utility "INIT.BAS" (pge. 29 same issue) whenever you use Basic, you are provided with a ALT-P (f7) printer toggle when in direct mode. This may be left set on when a program is run. Alternatively, the printer echo may be controlled using pokes.

"Cognoscenti" may refer to the publication SOFT 971 (advertised on page 41 of the same issue), in the section on the S.C.B (System Control Block) used by CP/M. The trick is to manipulate the output re-direction flags. Although two bytes are allocated for each flag group, only four bits of the most significant (2nd) byte are needed for our purpose. You must leave the other bits unchanged.

You can emulate the CP/M "DE-VICE" command from within Basic easily: First select the output channel to be re-routed. Refer to table 1.

Then select the device to which you want the output directed. This is any combination of the devices in table 2.

For example, if you check the default value for CONOUT by using PEEK(&HFBC1) you will get the result 128 (= &H80, CRT:). To echo all screen (i.e. CONOUT) output to the built-in printer, you must change this default

by also setting bit 6, in other words logically OR-ing &H40 (LPT:) with &H80 (CRT:) which gives &HC0. In decimal this is effectively an addition. Add 64 (LPT:) to 128 (CRT:) giving the combined "device" 192 (LPT: with CRT:).

Summary: To enable printer echo
 POKE &HFBC7,&HC0
 To switch echo off
 POKE &HFBC1,&H80
 Naturally, all sorts of other options come to mind;
 LPRINT to Parallel ("Centronics")
 Printer: POKE &HFBC7,&H10
 Restore LPRINT to Built-in Printer : POKE &HFBC7,&H40
 Echo built-in LPRINTs to screen only: POKE &HFBC7,&HCO
 Send LPRINTs to screen only: POKE &HBC7,&H80
 Send LPRINTs to serial (RS232) only: POKE &HBC7,&H20
 Send LPRINTs to serial (RS232) with

screen echo: POKE &HFBC7,&HA0

Alternate input possibilities are also available. Refer to table 3.

I can't comment on getting of RS232 input as I don't yet have a modem, but I should just warn that firstly (before entering Basic) you must set up the SIO baud rate and protocol, and also there is no guarantee that you will be able to recover control of the computer if it locks up waiting for RS232 input. I would suggest a machine level driver which allows user to return control to keyboard on BREAK etc.

D. Pulford, Kingsford, NSW.

We thank Mr. Pulford for his help in this matter and also Mr. D. Greenhalgh who also sent in the same Pokes for echoing text from the screen to the printer.

There may be some readers who may be able to use the following to save a

TABLE 1

CHANNEL	USED BY BASIC	FLAGS STORED AT
CONOUT	PRINT statements	&HFBC1
AUXOUT	not used	&HFBC5
LSTOUT	LPRINT statements	&HFBC7

TABLE 2

DEVICE	DESCRIPTION	POKE VALUE	REMARKS
CRT:	VDU, SCREEN	&H80 (128 decimal)	SET BIT 7
LPT:	BUILT-IN PRINTER	&H40 (64 decimal)	SET BIT 6
SIO:	SERIAL (RS232) OUT	&H20 (32 decimal)	SET BIT 5
CEN:	PARALLEL OUT	&H10 (16 decimal)	SET BIT 4

TABLE 3

CHANNEL	USED BY BASIC	FLAGS STORED AT	DEVICE	DESCRIPTION	POKE VALUE	REMARKS
CONIN	INPUT statements	&FHBBF	CRT:	KEYBOARD	&H80 (128 decimal)	SET BIT 7
AUXIN	not used	&HFBC3	SIO:	SERIAL (RS232) IN	&H20 (32 decimal)	SET BIT 5

All letter for the Mailbag section should be addressed to:
 The Editor
 The Amstrad User
 1/245 Springvale Road
 Glen Waverley, Vic 3150
 We regret that we cannot enter into any personal correspondence.

considerable amount of money on consumables.

I recently purchased a thermal printer to suit my 6128 for its size and portability and find that it suits what I want to do.

But I found that the consumables short, that is, the thermal paper and the cassette ribbons to be reasonably short lived and thus expensive. So opting to use thermal paper for the majority of things requiring printing, found that the 30 metre rolls, also didn't go very far. With a bit of hunting around, I discovered that the main use of thermal paper is for facsimile machines. On comparing prices, I found that one could save a considerable amount, by buying rolls for fax machines, and making a small roller arrangement for the paper to sit on (as the reels are larger) and away you go. Depending on the quantity you buy, the cheaper it gets. A fax roll is 100 metres long and costs around \$25 for one, and some suppliers sell packs of two for \$41. Compare those prices to \$12.50 for one 30 metre roll.

Just measure the price difference, which would you pay?

G. Barrett, Bayswater, WA

I have been having a problem with my PCW 8512 which some of the technical experts may be able to help me with. Recently I have not been able to obtain a screen dump of any LocoScript 1 or LocoScript 2 screen. I have no problems dumping a page of Basic, CP/M or Logo.

Having pressed EXTRA + PTR the printer starts on line 1 but then after the first centimeter or so both the printer and the keyboard lock up and nothing I can do will reset it. Switching off and rebooting the program MAY reset the printer but sometimes it takes two or three attempts before it finally begins working again. Any suggestions?

Doug McMillian, Camp Hill, QLD

I recently bought a copy of Mini Office Professional on the strength of Rob

Ainsley's write up in the April issue of TAU. In his description he states, "there isn't actually a word counter at all on Mini Office, still less one you can see while editing," I found it by reading the "READ.ME" file on disc two. It is brought up by pressing EXTRA + A at any time during the edit. It comes up with a very fast word count on the bottom of the screen. EXIT must then be pressed to get back to the edit mode. Apart from this small point I agree with every statement made by the reviewer.

J. B. Read, East Doncaster, VIC

After the release of the review, our office was flooded with letters telling us there was a word counter in Mini Office Professional. We thank everyone who took the time to fire up their PCW and correct Rob on his mistake.

I wonder whether the author of the article "Logo Print" which sets out to print Logo picture files to A4 paper-size, could it be asked to answer to

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CLASSIES

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FOR SALE - Amstrad PCW8256, 256K word-processor with printer, BONUS accounts system plus discs and ribbon. Genuine Sale excellent condition, ideal business computer, Phone: (046) 309 140.

FOR SALE - Amstrad CPC464 with monochrome monitor, excellent condition, only \$350.00. Amstrad DMP1 printer good condition \$150.00 (negotiable) also, Okimate20 colour printer very good condition only \$375.00. Telephone Paul Shearman on A.H. (054) 221 082.

Start Computing with the Amstrad CPC6128 - by Judith Thamm.

A Basic course for beginners, as reviewed TAU Dec 87. 112xA4 photocopied pages coil bound with over 50 programs. Ideal for computer clubs. Book \$20, 3" disc \$12, 5.25" disc \$3.

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"WANTED" 1 Amstrad Colour Monitor, will swap 1 Green Screen Plus \$250.00. Phone Norm Wilson 754 6675 A.H.

supply further details through your excellent columns.

I have saved the program but when I try to use the procedure to print out a Logo pic. file I receive the error message,
line 110 filename invalid

The author did not mention the steps to successfully use his program, perhaps he could do this through your columns.

H. Ball, Herons Creek, NSW

The text with the article in question seemed quiet explanatory to us. Two points to remember though; Save your picture to be printed as a .PIC file under Logo, and when typing the file name to be printed (line 10) leave off the '.PIC' as line 30 adds the '.PIC' postfix for you.

I wish to bring to your attention and to your many readers a problem my children aged 11 and 9 respectively seem to have repeated difficulty with: in as much as they will save pocket money for many weeks in order to buy a game program, only to find, on running the program at home at their leisure, that the program is far too difficult to complete. Or quite often insufficient instructions come with the program to even begin to enjoy their newly acquired game.

Are games programmed as such as not to be completed?

Could not games be coded in a EASY, AVERAGE and DIFFICULT class? So that under-age consumers have some idea as to what they are buying before paying \$40-\$50 for a program which is not suitable to their requirements.

A recent purchase entitled "Captain America" is an excellent example. The instructions are insufficient to progress beyond the second screen, which has a bird-like creature encircling, and when shot displays a code, but it is impossible to proceed from here.

Your "Adventurer's Attic" section is excellent, and perhaps a similar section for arcade games could be added to enhance the overall enjoyment of the magazine.

E. J. Stewart, Salisbury, SA

I purchased a 5.25" disc drive from Alliance Computers at Marooka Qld. Mitsubishi Electric AWA recommended the drive unit that Alliance was assembling at the time as being an excellent unit to suit my purpose.

I purchased the disc drive unit three months ago at a cost of \$400.00 and was satisfied with its general performance, then last week I was adding to a program and got the information off the disc and as I went to return the data back to the disc it came up as "read failed to save", so I tried the same on a different computer and it

Classified Ads Order Form

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.

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

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

Just fill in the application form and send it to us together with payment.

We'll then place the ad in the next available issue (published 3 to 7 weeks after we receive your order.)

Classification: For Sale Wanted Services User Groups Other

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Address

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

did the same thing again.

The disc drive in question was returned by me to Alliance Computers for possible repairs. They said it was out of warranty and did not repair them, but they gave me the name of an agent called "Sycom" located at Stafford (QLD) Brisbane. That firm said they were not prepared to repair it because it was assembled in a complete unit. I then asked if they could tell me of a firm where the repairs could be carried out, I was given the name "Comcheck Computers" at Kedron Brisbane. They had a look at the unit and informed me the record head spring centring had snapped and to repair it would cost \$279.00 plus the \$35.00 charge for the quote.

I returned to "Alliance Computers" and gave them the information I had received about the disc drive, but they didn't seem very interested.

I have since found out the cost of a new disc replacement drive was about \$170.00

I know of others who have the same units and would be upset to know of this. Why are there no repair agents in Queensland that provide service for the disc drives. The difference to repair a part of the drive and to buy a new one seemed unfair.

Being on a pension this is a big loss as I used the unit as part of my relaxation after my heart attack. I do a lot of family history and store it on 5.25" discs to save on discs, plus some news letters for my wife at the Historical Village.

I now have all my records on 5.25 discs and no access to them until I get a replacement of some sort.

E. J. Stenhouse, Jimboomba, QLD.

A sad tale indeed. Can any Queenslanders with more local knowledge help Mr. Stenhouse?

I thought you may be interested in a poem composed by my father after his first hands on experience with my CPC6128. It all started with the knowledge that my father was considering the purchase of a PCW and as I know my father rather well, I thought that maybe LocoScript may be just too

much for time to come to grips with, so I loaned my beloved computer to him (well I couldn't let him lose with a poor defenceless PCW, could I). With Mini Office II and a quick run through of the manual I left him to it for a couple of days, on returning I found a frustrated poet bewildered as to where his verse was going. A few days later he presented me with the following poem, typed on an electric typewriter, and a cartoon sketch by a friend of his, Ben Little (*sorry Ben, no room for your picture - Ed*). I'm sure it will bring back memories to most readers.

M. D. Pickersgill, Newnham, TAS.

THE COMPUTER - by John E. Pickersgill
Computer misbehaved today
It took and hid my words away
And now there's nothing it will do
Except return a beep or two.

It sits with baleful, flickering stare
As if to say, "Well I don't Care"
A greedy, green one-eyed sot
That to gobble up the lot
Those words fresh born of mental strain

The fruit and produce of a brain
And that's a thing it cannot do
And so I say, "Well sucks to you"
And whilst I'm reasonably astute
I must confess I can't compute.

I pressed this button - got it wrong
This cursed cursor came along
And pushed my words right off the screen
Just as though they'd never been.

A mean a spiteful thing it is
Those words I wrote were never his
To keep and hide, but only lent
And I'm not sure of where they went
I think the thing just takes and hides
My words and poems in its insides
And that's indeed a bitter fruit
To a man that cannot compute.

It's just a know-all box of switches
That hypnotizes and bewitches
And lures my hard won poems and words
My, nouns, my adjectives and verbs
Into unseen electronic jaws
That eats them up without remorse
And this I say without affection
I hope they give it indigestion.

CONTRIBUTIONS

Please note that all program contributions must be submitted on 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 addresses padded bag.

DISPLAY ADVERTISING DEADLINES

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SEP '88	08/07/88	22/07/88
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Impossible Mission 2 is an action strategy game which is sure to have appeal for everyone. You, as the player, are sent on a secret survival mission to locate and arrest Professor Elvin Atombender, a psychotic genius who has used computers to steal money and build up an eight tower fortress secured by a variety of deadly robots. You need to search through a number of rooms to discover clues (to hinder the robots) or codes (to open doors).

Pirates: Microprose
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Moebius: Microprose
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Enter the world of oriental magic. The player becomes the top Martial Arts disciple of the Master Moebius the Windwalker.

The disciple must not only battle the four elements, but Ninja-like assassins, rebel guards and ferocious animals.

Crazy Cars: Titus
IBM PC and compatibles - \$59.00
Now you can drive the most prestigious sports cars available, at any speed you desire, and in the comfort of your own home. However, lose traction and you could find yourself spinning to sure disaster.

Flying Shark: Firebird
CPC disc and tape - \$39.00/\$29.00
Straight from the arcade's classic chart toppers. Flying Shark is the ultimate war plane action as you swoop on enemy tanks and gun emplacements, or, fight the battle of the skies as you come up against swarms of enemy planes.

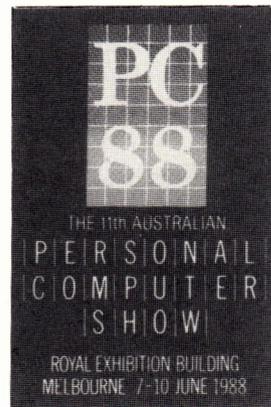
Elite: Firebird
IBM PC and compatibles - \$69.00
A space voyage adventure which combines the best of many worlds by testing your combat, navigational and entrepreneurial skills. You must trade in a universe of pirates to outfit your ship with the latest weaponry, deal in the Black Market and dodge the police.

Classiques #2: Titus
IBM PC and compatibles - \$59.00
A three-game compilation. The first is a maze game with four ice monsters in pursuit. The centre of the maze must be reached in the second game with the enemy appearing as you sight your goal. The third game, Grand Prix, lets you encounter the thrills of motor racing.

Jinxter: Rainbird
CPC disc only - \$69.95
This game is a real adventure winner with top graphics. An hilarious game where every turn brings perplexing problems and quick surprises. The text is extremely well written, don't expect your usual answers, there are no silly spells or wimpish witches.

PC88 in Melbourne

PC88, claimed to be Australia's largest personal computer exhibition, will be staged in Melbourne from 7th to 10th June at the Royal Exhibition Buildings. As usual, PC88 will feature the best of personal computer hardware, software and peripherals with desktop publishing and CAD/CAM featuring on many stands.



The show will also provide the first opportunity for Amstrad to exhibit products under their own banner. Being released this month, the PCW9512 will be on show, along with the new Amstrad PPC640 portable which is due for release in July. Whilst the show is strictly meant for computer products, Amstrad may well take the opportunity to show off its new Studio 100, a home sound/studio/recording system.

Alongside the PC88 Show will be the Office Technology 88 exhibition. Admission to both exhibitions is \$7.00, and once again, children under the age of 18 must be accompanied by an adult.

Cardbox Prices

Eagle-eyed readers may well have spotted a difference in last month's magazine between the price quoted in our ad on page 48 and the Reckon Software ad on page 31 for Cardbox (CPC and PCW). We can say, quite smugly, that our price was correct, ie. \$129 and not \$99 as shown in the Reckon ad. Apologies, of course, are due to anyone who thought they may get it for the lesser amount.



LIVING IMAGE PRESENTS

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48-pin Printer

At the recent Hanover computer fair in West Germany, Epson held the first public viewing of their 48-pin serial impact dot matrix printer. Although still in its infancy - and no decision has been made by Epson as to whether the product will be made available in Australia - it is an exciting jump in printer technology. But the question is how long will it be until the dot matrix printheads manage to force their way through stationery and provide auto-perforations?

PC Networking capability from SageSoft

At the point a small business acquires its second or third micro a need arises to share resources. Until now, this meant paying out a tidy sum for network cards and the software and paraphernalia for making network connections (netware). The networking bottom line for a hypothetical two or three PCs could well exceed the amount invested in the computers themselves. SageSoft has restored the balance with a card and netware package at less than \$575 per workstation.

One wouldn't expect full Ethernet compatibility or the features of Novell Advanced Netware at that price - what SageSoft has done is to provide a tightly prescribed amount of network functionality at a bargain price.

The SageNet Starter Pack (\$900 plus tax) includes two half length networking cards that will fit any available slot in a PC, XT, AT or compatible. Produced by Thorn EMI, the cards work at a maximum 16MHz. Installing the cards is no more difficult than any other expansion card operation. There are no jumpers or switches to set. Anyone familiar with the sharp end of a screwdriver can have the job done in less than 15 minutes. The manual provides explicit instructions with photos for Amstrad and IBM PCs.

The full netware implementation consumes 203Kb of RAM although it is possible to configure a station on as little as 55Kb. Unless all you need are directories of remote stations, it is essential to have the full 640Kb of

memory in every machine. Even with a full house (RAM wise), large spreadsheets or databases may be impossible to load unless you are using a device like ChargeCard or employing 640Kb barriers cheating memory and software.

Printer handling is the aspect of SageNet with which those new to networks will have the most trouble. It requires that all printer usage be directed through the network. If someone forgets and prints directly to their local printer through their application program, any remote user sending a print job to that printer will find that their documents have been merged in a disastrous fashion. It requires educating previous stand alone users into the adjustments necessary for networking.

An essential network quality is provided with the security option. You can restrict access by network users to disks or directories on your machine to prevent tampering or snooping about. Access is by password which can be saved to disk or changed each time you sign on the network.

Good documentation and support are essential for networks. At the retail price quoted not many dealers will want to provide full support without additional charge. The manual is well organised and written with the novice networker in mind. SageNet comes with free "hot-line" telephone support for 90 days.

For more information, contact PCS on (02) 923 2899.

Sugar boosts CPC

Here's a great quote from Alan Sugar (Mr. Amstrad himself). When asked whether rumours that production of CPCs in the Far East had stopped were accurate, he replied "No, it is not true. We are making more than ever before". Confirmation, if any were still needed, that the CPCs are alive and kicking. And while on the subject of the ever popular CPCs, recent hefty price increases of the Japanese-made dynamic ram chips are unlikely to effect the current prices of CPCs. It is probable that the price rise on the chips is due to an international shortage of silicon slithers.

New Educational games trio for PCs

Reckon Software are about to launch three educational PC games with a difference. The first is 'Number Fun - One' (\$29.95), a number game for ages 5 to 15. It involves friendly alien creatures, time bombs and 'the Munch'. Levels of difficulty can be set and the random numbers generator ensures that no two lessons are the same.

The second is called 'Lex, the Wizard of Words' and will cost \$39.95. In a quest to meet the Wizard, the player encounters a number of nasties such as the Satyr of Synonyms, the Alastor of Antonyms, the Erklng of Errors and finally the Spelling Serpent. "Lex" is for ages 10 to retirement and at its most difficult will have even the adults

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reaching for the Thesaurus.

'Word Fun - One' at \$29.95 (?) completes the trio. It's meant for those who find 'Lex' a little too difficult. With the use of a helicopter, the mission is to rescue those who got lost in their quest to find the Wizard of Words and suits ages 10 to 15.

See your local dealer or ring Reckon on (02) 371 9222

Firebird Shuffle

Firebird have rationalised their game labels into three section - Silverbird, Firebird and Rainbird. Silverbird is to assert its separate identity as the budget range.

Firebird and Rainbird will remain much as before but are also undergoing a revamp of their presentation. Firebird has a new logo and inlay design, while Rainbird is to have "an attractively chunky and compact box". Sounds like the revamped labels will be hard to miss.

The Disc Enhancer

A new piece of software called The Disc Enhancer had been developed in Australia. It claims to add even more random access facilities than currently available in other software and at about half the price. It is written in machine code and adds nine new commands to disc based computers in the Amstrad CPC range allowing random access to disc files from standard Locomotive Basic. It is relocatable and can exist with other RSX software.

Enquiries to :

Solo Software on (087) 25 8068.



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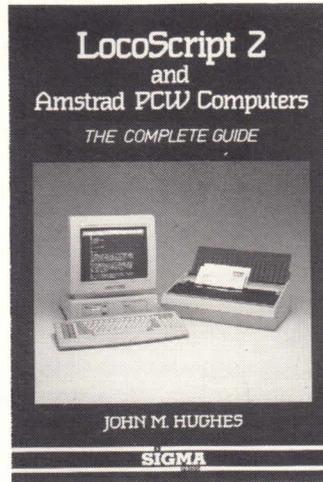
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New Books to add to your library

A swag of new titles have hit the offices of The Amstrad User and we shall do our best to review them over the coming months and take on stock of the better ones.

LocoScript2 and the Amstrad PCW Computers by John Hughes (\$43.05 in paperback) - many people would already have a copy of his very popular book "Mastering the Amstrad PCW 8256/8512. Anyone who has upgraded from LocoScript1 to 2 or new owners of the PCW9512 should find this book of interest. It covers, among other things, efficient disc management techniques, special effects, designing layouts, setting up documents and using different printers and print wheels. Three chapters are devoted to using Locomail.



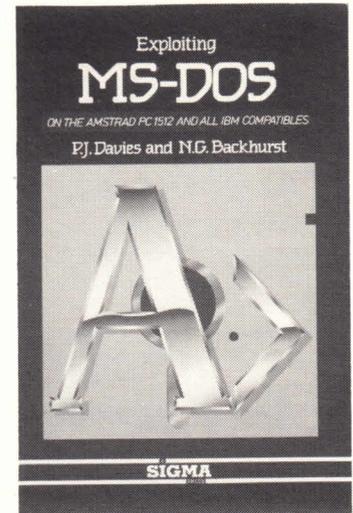
WordStar on the Amstrad PC by John Hughes (\$43.05 in paperback) - all features of WordStar 1512 are explained, including the use of the built-in database, mail-merging, and the spelling checker. There is also plenty of information on printers and other hardware.

Computers and the Law by Mawrey and Salmon (\$65.00 in hardback) - sets out in easily accessible form the basic principles of UK law as they apply to computers and those whose business is concerned with them. We are currently having the book checked by a lawyer to see if there are any major differences between UK and Australian law in respect of the areas covered in the book. We will report back as soon as we can.

DOS-Plus on the Amstrad PC1512 by Ian Sinclair (\$32.25 in paperback) - the book is aimed at the PC1512 owner (and 1640 for that matter) who wants to know how to make the machine work closer to its limits. It describes some of the more interesting and useful advantages DOS-Plus has over its better known counterpart MS-DOS.

Modula-2 on the Amstrad PC1512 by Ian Sinclair (\$46.65 in paperback) - is an introduction to the Modula-2, a language which is considered more capable than Pascal and greatly superior to 'C' for producing error free programs when more than one person is writing sections.

Exploiting MS-DOS: on the Amstrad PC and all IBM compatibles by Davies and Backhurst (\$46.65 in paperback) - a useful feature of this book is that most chapters are divided into two levels: a brief 'get you started' section, and a longer 'in-detail' coverage of how to solve the problems that often arise, once you move on from being a new user to an accomplished operator.



Introduction to Cryptology by Brian Beckett (\$59.00 in paperback) - surveys the chief cryptographical algorithms that have been developed over the centuries and provides an introduction for those who know little about the subject and would like to know more, especially the latest public key cryptosystems and IBM's Data Encryption Standard.

Hot releases from OziSoft

Compilations form the main thrust of releases for CPCs from OziSoft this month. If you already have one or two of the originals, the compilations are still a bargain as you can effectively pick up some titles for less than \$4.00 each on tape.

Konami Arcade Collection: Disc \$49.95; Tape \$39.95

Contains ten games - Jailbreak, MIKE, Hypersports, Ping-Pong, Green Beret, Jackal, Shao-lin's Road, Nemesis, Yie Ar Kung-Fu 1 and 2.

We are the Champions: Disc \$49.95; Tape \$39.95

Contains five games - Renegade, Barbarian, Supersprint, Rampage and International Karate Plus.

Ten Great Gremlin Games 2: Tape \$39.95

Contains (you've guessed !) ten games - Mask, The Duct, Auf Wiedersehen Monty, Samurai Trilogy, Convoy Raider, Jack the Nipper II in Coconut Capers, Basil, the Great Mouse Detective, Death Wish III, Thing Bounces Back and The Final Matrix.



Live Ammo: Disc \$39.95; Tape \$29.95

Five games - Green Beret, Rambo, Top Gun, Army Moves and Great Escape.

There are two other 'hot' titles to watch for - Target Renegade and Cybernoid (Disc \$44.95; Tape \$39.95 for each title). Target Renegade is the follow-up to Renegade and is much like the arcade game Double Dragon. Cybernoid features bounce bombs and impact mines in a space orgy of video destruction.

Joystick splitter and rapid fire unit

An Australian developed "black box" which is simply plugged into any CPC, allows two joysticks to be connected to your Amstrad. In addition, two separate switches provide independent 'rapid fire' control through either joystick port.

Naturally, the unit has been designed only for games with two player options or where rapid fire is not already incorporated within the program. The unit will cost \$29.95.

All enquiries to *The Amstrad User* (03) 233 9661

Nationwide User Groups

As the News section is much longer than normal this month, we have excluded the normal full listing of groups. Please refer to the May issue for the latest list but add the following changes to the Central Coast Amstrad Users Club -

President: Lloyd Mitchell (043 88 2950); Secretary: Douglas Green (043 42 2568); Treasurer: Pat Thompson (043 32 9095); Librarian: Grant Taylor (043 32 5926). Meetings now take place every 2nd and 4th Monday of each month from 7.30 pm. at the Mingara Recreation Club, Adelaide Street, Tumbi Umbi.

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 1513
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 Winckel	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	Mildura	(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 Ailberry	The Gap	(07) 300 1675
Neville Eriksen	Gladstone	(079) 78 2418
Kylie Telford	Goondiwindi	(076) 76 1746
D.F. Read	Ingham	(077) 77 8576
SA		
Lindsay Allen	Murray Bridge	(085) 32 2340
Michael Spurrier	Murray Bridge	(085) 32 6984
Mrs. S. Engler	Penola	(087) 36 6029
WA		
Graeme Worth	Scarborough	(09) 341 5211
P.M. Nuyens	Waroona	(095) 33 1179
TAS		
Conal McClure	Scottsdale	(003) 52 2514
NT		
G.P. Heron	Tiwi	(089) 27 8814

This revised list is based on information collected over the last four months. If your name appears and it shouldn't, please let us know. 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.

Get to know your Bank Manager: 3

by Anthony Trost

Once your data has been set up on your RAMdisc then comes the time to interrogate it. The command for this is |BANKFIND. The syntax is...

```
|BANKFIND,@<return code>,<search>, <starting record No.>, <finish record No.> <string>
```

The finishing record number is optional. If not specified this command will continue to search through the entire file looking for the <search string> specified. If no match is found then the return code will be -2. The return codes of -1 and -3 are still a possibility. You will obtain -1 as your return code if you ask |BANKFIND to search eg. from records 6000 to 8000 when the whole of the RAMfile only contains 5000 places for your records.

In the following program I place a string of 10 asterisks at record number 3000 and ask the program to search through 2999 files to find it. A beep will sound to indicate the start of the search and another to indicate the end. |BANKFIND is incredibly fast. The beeps will be close on each other's heels.

```
10 a$ = STRING$(10,"*")
20 |BANKOPEN, 10
30 r% = 0
40 r$ = SPACE$(10)
50 |BANKWRITE, @r%, a$, 3000
60 PRINT "SEARCHING"; CHR$(7)
70 |BANKFIND, @r%, a$, 0
80 PRINT "FOUND"; CHR$(7)
90 |BANKREAD, @r%, r$
100 PRINT r%, r$
```

Assuming the string you specify exists, |BANKFIND will only locate the record number belonging to that string, and then make this the current record. A |BANKREAD immediately following will read the contents of the current record into a specified string. Therefore there will be no need to specify the record number you want. |BANKFIND will locate the first occurrence from the current record number onwards, not every occurrence of the search string. If the current number is 90 and you search for SMITH which is in record 80, you will be quite disappointed.

But the story gets better. You can use |BANKFIND to match the first few characters of the records. For example, if you search for STR then |BANKFIND will locate STRING, STRONG, STREET....etc. remembering of course, it finds the

first occurrence from the current record number onwards, not all of them.

(And at the risk of sounding like a television commercial).

BUT NOT ONLY THAT, you can use wildcards to look at sub-sections of the records to |BANKFIND a match. The wildcard is CHR\$(0). If the sub-string we wanted was 'ING', which had to be found in the third position of the record, then CHR\$(0)+CHR\$(0)+'ING' would match THING, FLING, BRINGING,...etc.

By now, I hope that you have grasped the basic concepts behind the operation of your bank manager. To finish off I'd like to leave you with a few little routines that you may find helpful.

The first is one I call BANKCHEK. Use this one to step through your RAMdisc and find out what is there. Use the ESC in the usual way to halt the program if you see something interesting and restart it with any other key. I open the record length at 255, the maximum, to step through the RAMdisc at the quickest possible speed.

```
10 h$ = SPACE$(255)
20 r% = 0
30 |BANKOPEN, 255
40 WHILE r% > -1
50 |BANKREAD,@r%,h$
60 PRINT h$
70 WEND
```

The RAMdisc is always filled with garbage when the computer is first switched on. If you wish to clear it absolutely before commencing work on it then you could fill the lot with spaces. For this use BANKCLR. The process should take about 5 seconds.

```
10 |BANKOPEN, 255
20 h$ = SPACE$(255)
30 r% = 0
40 WHILE r% > -1
50 |BANKWRITE, @r%, h$
60 WEND
```

To check exactly how many records you have available for your use you can use this record counting program. The recommended minimum record length is 2. It also clears the RAMdisc of garbage as it goes. If you don't wish it to clear the RAMdisc then change the |BANKWRITE in line 60 to |BANKREAD.

```
10 r% = 0 : x = 0
20 INPUT "WHAT IS YOUR RECORD LENGTH ( 2 - 255 ) "; rec
30 h$ = SPACE$(rec)
40 |BANKOPEN, rec
50 WHILE r% <> -1
60 |BANKWRITE, @r%, h$
70 x = x + 1
80 WEND
90 PRINT x; "RECORD SPACES AVAILABLE."
```

Here is a general purpose search routine called BANKSRCH. For this example I will set a record length of

15, and randomly place the word COMPUTER 20 times throughout the file. The program will then search the file to find out where they were put. You should run BANKCLR before BANKSRCH each time otherwise you will end up with approximately 20,40,60 etc occurrences of the word COMPUTER throughout the RAMdisc. I say approximately because there is no guarantee that the same record number will not be chosen by RND twice.

```
10 r% = 0
20 r$ = SPACE$(15) : c$ = "COMPUTER"
30 :BANKOPEN, 15
40 FOR x = 1 TO 20
50 rec = INT(RND * 4000)
60 :BANKWRITE, @r%, c$,rec
70 NEXT x
80 MODE 2
90 :BANKFIND, @r%, c$,0
100 IF r% < 0 THEN 150
110 :BANKREAD, @r%, r$
120 PRINT r%,r$
130 :BANKFIND,@r%,c$,r% + 1
140 GOTO 100
150 PRINT "Search complete."
```

If you knew exactly how many records you had in the second 64K bank then you could attach this number to the end of line 130. This would greatly speed the search as it would reduce the number of records that :BANKFIND would have to scan. For example if you knew that you had 2500 records entered then line 130 would read...

```
130 :BANKFIND, @r%, c$, r%+1, 2500 :REM
find next occurrence
```

This next routine I call BANKPART. It enables you to do a part-string search of all the records in the RAMfile. Of course, this will take slightly longer to scan the whole file. For this routine I set the record length at 15 and randomly place 20 words in the RAMfile from record 1 to record 4000. Again, there is no guarantee that the program won't select the same record number twice, placing one word on top of another.

If you type in something like TEL, the program will scan the file looking for any string containing TEL. Eventually it should come up with HOTEL and MOTEL. A beep will sound each time it begins another pass through the entire RAMfile.

I work out how many times the file has to be scanned in line 130. Then TEL, called SUB\$, is turned to another string with the wildcards, CHR\$(0), attached to the front. This new variable is called BUS\$. If I use a hash, #, to represent a CHR\$(0) then the following table illustrates what this program searches for.

Pass Number	BUS\$
*****	*****
0.	TEL
1.	#TEL
2.	##TEL
3.	###TEL ...etc

The variable, x, controls the pass number. If you run this program more than once the words will be placed in the RAMfile twice. To stop this you could run BANKCLR before running BANKPART each item.

```
10 r% = 0
20 :BANKOPEN, 15
30 FOR x = 1 TO 20
40 READ a$
50 rec = INT(RND*4000)
60 :BANKWRITE, @r%, a$, rec
70 NEXT x
80 DATA HOUSE, BIRD, CAT, DOG, HORSE, YELLOW, RED, BUDGIE,
HOTEL, MOTEL
90 DATA SCHOOL, PEOPLE, PERSON, HELICOPTER, AIRCRAFT, AMST
RAD, COMPUTER
100 DATA DISK, BANK, MANAGER
110 MODE 2
120 INPUT "ENTER THE SUB-STRING TO SEARCH FOR ---> ", SUB
$
130 b = 15 - LEN(sub$)
140 FOR x = 0 TO b
150 PRINT CHR$(7);
160 bus$ = STRING$(x,0) + sub$
170 r$ = SPACE$(15)
180 :BANKFIND, @r%, bus$, 0
190 IF r% < 0 THEN 240
200 :BANKREAD, @r%, r$
210 PRINT r%,r$
220 :BANKFIND, @r%, bus$, r%+1
230 GOTO 190
240 NEXT x
250 PRINT "Search complete."
260 GOTO 120
```

For those of you who do write your own specific data base I think that you will be hard pressed to find anything faster than the bank manager to handle your data. With these routines, I hope you will now find the job of programming far simpler. One last thing I can do for you is offer most of the above routines in one package to demonstrate their use - the cataloguing program that I first mentioned at the beginning of this article.

I will remind you that to use this program you must first run BANKMAN on side 1 of your CP/M+ master disc. Unfortunately, the listing is a little large for this magazine to devote space to.

You will need to send a disc and a stamped, addressed padded post pack to...

Anthony Trost
4 Sunrise Crescent
Gracemere
Qld. 4702

And good luck with your efforts with your bank manager in the future. They really aren't all that bad when all is said and done, are they?!

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MASTERFILE is second to none. Records can be sorted ascending/descending, character or signed numeric, even embedded keys such as surnames. Other functions are field-to-field calculations, and several-across label printing. We simply don't have room to list all the features; give us a call if you are still in doubt of the power of MASTERFILE III.

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This is the sister program to the famous MASTERFILE III, and is a fast and friendly spread-sheet program with high capacity (over 7 000 cells) and impressive speed. Like MASTERFILE, it is entirely machine coded. Like MASTERFILE, it needs just one disc drive and does not use CP/M and it uses the same optimised RAM bank-switch code. "Another exceptional utility from Campbell" said Popular Computing Weekly of the original MASTERCALC. The "128" edition is more powerful.

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For the enthusiast, there is even USER BASIC access to the cell data, so that special operations can be performed for example, it is possible to ship data to/from MASTERFILE III.

MASTERCALC 128 costs \$99.00 including postage and packing, and if you request air-mail within Australia, we'll do that at no extra charge too! (If you live outside Australia please add \$4.00 for air-mail cost. Bankcard, Mastercard or Visa accepted).

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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 |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.

RENEGADE

Does the name Phil Howard ring a bell? Renegade gets infinite lives this time. (Apparently there are some strange copies of Renegade out there where the victims have blue blood.) It is a Method 1 poke.

```

1 ` Renegade - tape
2 ` by Phil Howard
3 ` The Amstrad User June 88
10 DATA 21, f4, 37, 36, c3, 23
20 DATA 36, 16, 23, 36, be, 21
30 DATA 40, 00, e5, 21, 00, b9
40 DATA e5, c3, c9, 37, e5, 21
50 DATA 6e, 00, 36, dc, 23, 36
60 DATA 15, 23, 36, 89, e1, f1
70 DATA f3, c9, 21, 2e, b9, 36
80 DATA ed, 23, 36, 4b, 23, 36
90 DATA 02, 21, 2e, b9, 11, 2e
100 DATA 79, 01, 26, 00, ed, b0
110 DATA 3e, 79, 32, 47, 79, 32
120 DATA 4b, 79, 32, 53, 79, 3e
130 DATA c9, 32, 54, 79, cd, 2e
140 DATA 79, dd, 21, d9, bb, 11
150 DATA dd, 00, cd, 67, bb, 21
160 DATA 62, be, 22, b4, bc, c3
170 DATA 03, bc, 3e, a7, 32, 48
180 DATA 0a, c3, 40, 00
190 MEMORY &3000:y=0
200 FOR x=&BE00 TO &BE69
210 READ a$:a=VAL("&"+a$)
220 POKE x,a:y=y+a:NEXT
230 IF y<>&29EC THEN 260
240 LOAD"renegade"
250 CALL &BE00
260 PRINT"Data Error !"
```

Mission Jupiter

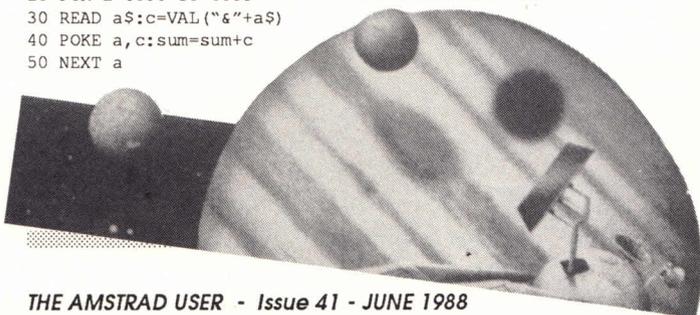
Another poke by Peter Wiseman. This time Mission Jupiter gets the treatment and you have 255 lives, infinite fuel and ammo and rapid fire. This is also a Method 1 poke.

```

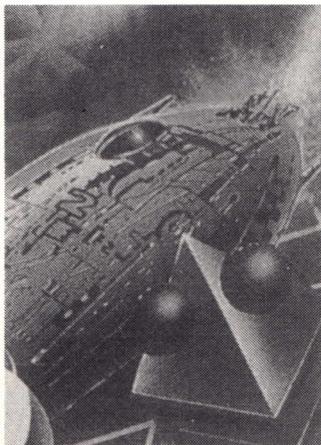
1 ` Mission Jupiter - tape
2 ` by Peter Wiseman
3 ` The Amstrad User June 88
10 MODE 1:MEMORY 5999:sum=0
20 FOR a=6000 To 6055
30 READ a$:c=VAL("&"+a$)
40 POKE a,c:sum=sum+c
50 NEXT a
```

```

60 IF sum<>5105 THEN 200
70 POKE 6033,255:' no of lives
80 POKE 6038,0:' infinite fuel
90 POKE 6043,0:' infinite ammo
100 POKE 6048,&18:' rapid fire
110 LOAD"mission jupiter"
120 CALL 6000
130 DATA 3a, 37, bd, 32, a8, 17, 2a, 38
140 DATA bd, 22, a9, 17, 3e, c3, 21, 90
150 DATA 17, 32, 37, bd, 22, 38, bd, 21
160 DATA ff, ab, 11, 40, 00, c3, 43, 3a
170 DATA 3e, 04, 32, f7, 6a, 3e, 3d, 32
180 DATA 44, 5f, 3e, 35, 32, 54, 61, 3e
190 DATA 28, 32, f8, 60, 21, dc, 1e, e5
200 PRINT"Data error"
```



Motos



Stephen Basford has hacked into Motos to give you extra lives or infinite lives. It is a Method 1 poke.

```

1 ` Motos - tape
2 ` by S. Basford
3 ` The Amstrad User June 88
10 MODE 1
20 FOR c=&BE80 TO &BEA2
30 READ h$:POKE c,VAL("&"+h$)
40 NEXT c
50 INPUT "No of lives: ";1
60 INPUT "Inf. Lives [Y/N] ";1$
70 POKE &BE97,1
80 IF LOWER$(1$)="n" THEN POKE &BE9C,61
90 CLS:PRINT>Loading.."
```



Strike Force Cobra

Paul Robson has sent in this poke for the tape version of Strike Force Cobra which gives you immortality and infinite time to complete the mission. Use Method 1.

```
1 ` Strike Force Cobra - tape
2 ` by Paul Robson
3 ` The Amstrad User June 88
10 MEMORY &3FFF
20 LOAD"! ", &4000
```

```
30 FOR f=&BE00 TO &BE3A
40 READ a$:a=VAL("&" + a$)
50 POKE f,a:t=t+a
60 NEXT f
70 IF t=4298 THEN CALL &BE00
80 PRINT"Data error"
90 DATA 3e,c9,32,50,40,21,00,40
100 DATA 11,00,02,01,00,01,ed,b0
110 DATA cd,00,02,3e,21,32,50,02
120 DATA 21,01,03,11,01,02,1a,ae
130 DATA 2d,ae,2c,77,1c,2c,20,f6
140 DATA 2e,01,5d,24,7c,fe,a9,20
```

STARGLIDER

John Shinnick has sent in this poke for the disc version of Starglider. Insert the Starglider disc in the drive, delete any features that you don't want and then RUN the program.

```
1 `Starglider - disc
2 `by John Shinnick
3 `The Amstrad User June 88
10 MODE 1:BORDER 0:INK 0,26
20 INK 1,0:INK 2,6:INK 3,2
30 LOAD"loadpic.scr",&C000
40 MEMORY &1FFF
50 LOAD"K32",&2000
60 LOAD"K16",&C000
70 ` infinite missiles
```

```
80 POKE &6504,0
90 `infinite laser fire
100 POKE &6363,&C3:POKE &6364,&71
110 `infinite plasma drive
120 POKE &6309,&C3:POKE &630A,&17
130 `infinite shield
140 POKE &6336,&C3:POKE &6337,&44
150 `rear view scanner
160 POKE &F60E,1
170 `inductive energy pod
180 POKE &F60F,1:POKE &190F,&18
190 `proton missiles
200 POKE &F610,1:POKE &64F3,&18
210 POKE &64F4,7
220 `indestructibility
230 POKE &98C8,0:POKE &98C9,0
240 POKE &98CA,0
250 CALL &F700
```



PROHIBITION

A three-man team has produced a poke - which provides as many lives as you want - for the Infogrames fast scrolling, shoot-em-up.

The poke asks you for the number of lives you want. This should be between zero and 128. Insert the correct version of Prohibition into your machine. Loading will take place automatically.

```
1 ` Prohibition - disc
2 ` by GF, GH and RM
3 ` The Amstrad User June 88
10 DATA DD,7E,00,32,83,90,2A0
20 DATA 2A,42,BE,11,14,00,14F
30 DATA 19,36,03,0E,07,CD,134
40 DATA 0F,B9,11,00,09,21,103
50 DATA 00,40,0E,92,CD,66,213
60 DATA C6,3A,00,40,FE,3D,27B
70 DATA 20,2F,3A,83,90,32,1CE
80 DATA FE,40,CD,4E,C6,79,398
90 DATA FE,93,20,2E,E5,2A,2EE
100 DATA 42,BE,11,14,00,19,13E
110 DATA 36,02,E1,11,00,01,12B
120 DATA 0E,46,CD,66,C6,D5,322
130 DATA 11,60,40,CD,76,90,284
140 DATA D1,CD,4E,C6,C3,B2,427
150 DATA C1,0E,93,CD,66,C6,35B
160 DATA 3A,83,90,32,94,42,255
170 DATA 18,CA,16,0B,0E,91,1A2
180 DATA CD,66,C6,D5,11,0C,2EB
190 DATA 40,CD,76,90,D1,CD,3B1
200 DATA 4E,C6,18,DC,E5,C5,3B2
210 DATA 21,84,90,01,73,00,1A9
220 DATA ED,BO,C1,E1,C9,00,408
230 DATA 20,20,20,20,20,20,0C0
240 DATA 54,48,41,4E,4B,53,1C9
250 DATA 20,54,4F,20,47,41,16B
260 DATA 56,49,4E,20,46,4F,1A2
270 DATA 52,57,41,52,44,20,1A0
280 DATA 46,4F,52,20,46,49,196
290 DATA 4E,44,49,4E,47,20,190
300 DATA 54,48,45,20,36,31,168
310 DATA 32,38,20,50,4F,4B,174
320 DATA 45,2C,20,47,42,48,162
330 DATA 20,46,4F,52,20,46,16D
340 DATA 49,4E,44,49,4E,47,1B9
350 DATA 20,34,36,34,2F,36,123
360 DATA 36,34,20,50,4F,4B,174
370 DATA 45,20,41,4E,44,20,158
380 DATA 52,70,4D,20,46,4F,1C4
390 DATA 52,20,54,48,45,20,173
400 DATA 43,4F,44,49,4E,47,1B4
410 DATA 20,20,20,20,20,0C0
420 n=6:a=&9000:L=10:WHILE
L<420:GOSUB 430:WEND:GOTO 470
430 cs=0:FOR x=1 TO n:READ
v$:v=VAL("&" + v$):POKE a,v
440 cs=cs+v:a=a+1:NEXT:READ
c$:c=VAL("&" + c$)
450 IF c<cs THEN PRINT"DATA
ERROR IN LINE",L:END
460 L=L+10:RETURN
470 INPUT"Lives (0-128) ",lv
480 PRINT"Insert Prohibition"
490 PRINT"Press a key.."
500 CALL &BB18:CALL &9000,lv
```

Space Harrier

Colin Hinks has sent in this poke for Space Harrier which gives you infinite lives, invulnerability, no trees, pacifist aliens and rapid firing. It is a Method 1 poke.

```
1 ` Space Harrier - tape
2 ` by Colin Hinks
3 ` The Amstrad User June 88
10 MEMORY &8C9F
20 CLS:MODE 1
30 INPUT "Infinite lives ?",a$
40 INPUT "Invulnerability
?",bs
50 INPUT "No trees ?",c$
60 INPUT "Aliens don't fire
?",ds
70 INPUT "Rapid fire ?",es
80 MODE 0:FOR x=0 TO 15
90 READ y:INK x,y
100 BORDER 0:NEXT
110 LOAD"screen",&C000
120 OPENOUT"d"
130 MEMORY &3B5
140 CLOSEOUT
150 LOAD"!block",&3B6
160 IF LOWER(a$)="y" THEN POKE
&D74,0
170 IF LOWER(b$)="y" THEN POKE
&D33,&C9
180 IF LOWER(c$)="y" THEN POKE
&F64,&C9
190 IF LOWER(d$)="y" THEN POKE
&10FC,&C9
200 IF LOWER(e$)="y" THEN POKE
&128F,0
210 CALL &3B6
220 DATA 0,26,6,0,0,9,2,25,15
230 DATA 3,16,10,13,2,1,14,20
```

Words Work - 4

Getting the most from your word-processor and printer.
Have you any gems to share?

More tips, tricks and tactics. But first, as promised last month, we look at printing from Tasword.



Printer commands

Tasword offers a variety of commands to alter the style in which text is sent to the printer. And there are others that help you organise the layout. Certain commands require a keypress (or two at most), others are reached by passing through sub-menus and further sub-menus.

Only a handful of one-key or two-key commands exist. For example, you can opt to have a page-break on screen. Handy, as you can judge what will appear on each printed page, header and footer text can be viewed and altered using control key sequences, but that's it. All other functions which are ultimately directed to the printer are accessed via menus.

Codes for the printer are inserted into a document by first hitting control space and then selecting the required function. There are 40 redefinable printer codes which can be held on keys a to t and A to T. These codes don't get printed. They are simply commands for the printer to turn special text style effects on and off. The method Tasman has adopted for switching on and off an effect, is to use the upper case letter for on, and the lower case for off. For example, **B** turns bold on and **b** turns it off. Say you wished 'that' in bold: on screen

you would have **B**that**b**. On paper you'd get: that.

If either your printer doesn't accept Epson codes or it has extra functions (such as proportional print or a selection of fonts), then you might like to try to define your own code sequences. To do this you must get to the main menu, choose "Customise program" and answer Y to the "Define printer control codes (Y/N)" prompt. To modify a control code tap the required letter and enter the code. Your printer manual should contain a list of effects and corresponding codes. Say your printer has an option whereby the print-head can be moved backwards one space - this can be useful for printing accented characters. On the DMP machines the code is 8. To enter this as option M on the Tasword printer control code menu hit M. Then type in 8. It is that simple.

Way With Words

Quality codes

Reading G. Bennett's letter regarding the customization of Tasword (TAU issue 38), I altered my Basic program as outlined. However, if your address is not saved in notepad 1 the program crashes. When I used f1 the right-hand justification fouled up. To remedy this leave out CHR\$(6) at the end of line 30.

Finally a tip. To get near-letter quality (NLQ) print from Tasword: select Customise program (C) from the menu. Then hit Y at the define printer control characters (Y/N) prompt. Type Q 27 <enter> 120 <enter> 1 <enter> <enter> q 27 <enter> 120 <enter> 0 <enter> <enter>. Go back to the main menu. Typing **C** switches on NLQ while **q** turns it off.

Andy Mair

Reformatter

Tasword justifies lines by inserting extra spaces from the right. This can lead to passages of text which look strangely stretched out. This listing reformats an Ascii file generated by Tasword. The program first strips out extra spaces and then pads out the line by adding the required extra spaces after the longest words. Extra spaces after long words are far less obtrusive to the eye than a series of widely spaced words to the right of a line. Printer control codes and the second character set are all dealt with properly - the screen may get cluttered though.

```
10 MODE 2:MEMORY &5FFF:DEFSTR a-e:DEFINT f-z:GOSU
```

```

B 390
20 CLS:a=SPACE$(100):b=a:zarray=&6100:zlength=&6000
30 zstrscan=&6200:zsploc=&6005:zflag2=&6002:zfl
ag4=&6004
40 INPUT"Insert disc with Tasword file. Press
return ",d
50 PRINT:CAT:PRINT:INPUT"Name of source file
",oldfile$
60 PRINT:PRINT:CLS:PRINT"Output to -":PRINT
70 PRINT"1 - Screen":PRINT"2 - Printer and
screen"
80 PRINT"3 - Disc file and screen":PRINT
90 a$=INKEY$:IF a$="" THEN 90 ELSE option=VAL(a$)
100 IF option>3 OR option<1 THEN 90
110 IF option=1 THEN f5=0:GOTO 160
120 IF option=2 THEN stream=8:f5=1
130 IF option=3 THEN stream=9:f5=1
140 PRINT:INPUT"Name of destination file",newfile
$:CLS
150 IF stream=9 THEN OPENOUT newfile$
160 OPENIN oldfile$
170 WHILE NOT EOF:LINE INPUT #9,a:f1=0:sc=0:b="":
d=""
180 FOR i=1 TO LEN(a):c=MID$(a,i,1)
190 IF c<>" " THEN f1=1:b=b+c:sc+1:POKE (zarray+
sc),0:GOTO 230
200 IF f1=0 THEN b=b+c:sc=sc+1:POKE (zarray+sc),
1:GOTO 230
210 IF RIGHT$(b,1)=" " THEN GOTO 230
220 b=b+c:sc=sc+1:POKE (zarray+sc),1
230 NEXT i:extraspaces=LEN(a)-LEN(b)
240 IF extraspaces=0 THEN 310
250 strlen=LEN(b)
260 POKE zflag2,1:POKE zlength,strlen
270 CALL zstrscan:spaceloc=PEEK(zsploc)
280 IF spaceloc<>0 THEN xx=PEEK(zarray+spaceloc):
POKE (zarray+spaceloc),(xx+1):extraspaces =extrasp
aces-1
290 IF extraspaces=0 THEN 310
300 ff2=PEEK(zflag2)+PEEK(zflag4):POKE zflag2,ff2
:GOTO 270
310 d="":FOR i=1 TO LEN(b):scan+PEEK(zarray+i)
320 IF scan=0 THEN d=d+MID$(b,i,1):GOTO 360
330 IF scan=1 THEN d=d+" ":GOTO 360
340 IF scan=2 THEN d=d+" ":GOTO 360
350 IF scan=3 THEN d=d+" "
360 NEXT i:PRINT d
370 IF f5=1 THEN PRINT#stream,d
380 WEND:CLOSEIN:CLOSEOUT:PRINT CHR$(7);"DONE":E
ND
390 FOR jj=&6200 TO &6266:READ aa:zz=VAL("&" +aa)
400 POKE jj,zz:NEXT jj:RETURN
410 DATA 06,00,3e,00,32,05,60,32,06,60,32,07,60,
3e,01,32,04
420 DATA 60,11,00,61,3a,00,60,b8,ca,64,62,04,13,
1a,32,08,60
430 DATA 4f,3a,02,60,b9,c2,4e,62,3a,06,60,a7,28,
05,3e,00,32
440 DATA 04,60,3a,06,60,4f,3a,07,60,b9,30,0f,3a,
06,60,32,07
450 DATA 60,78,32,05,60,3e,00,32,06,60,3a,06,60,

```

```

3c,32,06,60
460 DATA 3a,08,60,a7,ca,15,62,3e,00,32,06,60,c3
,15,62,c9,00
470 DATA 00,00,00

```

The program also works on Protex files.

G. Plain

Another half

I use Protex on rom and regularly require a half symbol (1/2). To achieve this I have redefined the hash (#) to be a 1/2. To use Protex the following must be placed at the start of any file:

```

>OC 27,"":",0,0,0
>OC 27,38,0,5,5,11,120,2,4,8,16,32,73,18,1,20,9
>OC 27,37,1,0
>OC 27,73,1

```

To complete the redefinition type SP in Command mode and answer Y to "Redefine characters (y/n)". When asked to press the character to redefine tap shift-3 and enter:

```
27 106 4 5 27 74 4
```

To save having this every time you enter Protex save this as the printer driver.

All that remains is the redefinition of the characters on the screen. This is the short program I use to boot protex:

```

10 SYMBOL AFTER 32
20 SYMBOL 35,64,192,76,82,68,8,30,0
30 |P

```

This works for the DMP 2000 and 3000 printers if Dip switch DS2-4 (downward characters) is on - you shouldn't have problems with Epson compatibles if they have this feature. I didn't need the line >OC 27,"":",0,0,0 until I had upgraded my printer with the Goldmark Systems Buffer Upgrade kit. If your printer hasn't been modified try it without the line.

Martin Farrar

Second character set

I own a 6128 and DMP 2000 printer and have often tried to print foreign characters like accented letters from Tasword 6128. I never managed it until I found a README file on the master disc. On loading I discovered it contained amendments and additions, along with a section on printing foreign characters.

The gist of it is as follows: don't install Tasprint. Go to the main menu (by pressing control Enter) and hit B to enter Basic. Type LOAD"printeps.bin":CALL &9D10 <enter> and return to the main program.

To test this new installation type a few characters from the Second Character Set and go to the print menu. Everything appears on paper but the bottom row of the character pattern is missing due to the Amstrad seven bit parallel port. Use Tasprint to overcome this. Included in the README file are instructions to save Tasword with the changes made. Have a look.

Jonathan Hill

Hot Tips

Hotter than burning the midnight oil

Stealer

If you run a program containing large arrays you won't be able to edit it later. For example, run the program below:

```
10 DIM a$(7028):FOR a=1 to 7028:
a$(a)="X":NEXT:PRINT FRE("")
```

The result will be around 21084 bytes free. Now enter EDIT 10 <return><return>PRINT FRE(""). You should get 3 bytes free. Increasing the value 7028 results in the String space full error message.

Use small arrays when developing and debugging programs. This prevents the memory from filling too quickly. Once the program is functioning correctly dimension the arrays to the desired size.

Tony Green

Mineshaft

Here is a program that produces weird graphics. Use the cursor keys to control it:

```
10 MODE 0:SPEED KEY 1,1:CALL &BC
08
```

Richard Hannah

Recovering erased programs

A Basic program which has been accidentally erased can be recovered from Basic, provided that nothing has been written to the disc subsequently. Enter the following poke:

```
POKE &A701,229
```

If you catalogue the disc a list of erased files will appear. To recover a file, merely load it and enter the following poke:

```
POKE &A701,0 (equivalent to |USER,0)
```

Now save the program as normal.

Resetting the Basic variable TIME

Listed below is a short machine code program which I have written which

resets the variable TIME to zero. The reset is implemented with the CALL &A000. Although the reset can be performed directly from Basic (see TAU, Letters July 1987) this method is more efficient in implementations where precise timing is required.

```
10 MEMORY &9FFF
20 FOR a=&A000 TO &A00E
30 READ x$:POKE a,VAL("&"x$)
40 NEXT
50 DATA 3E,00,32,B4,B8,32,B5,D8
60 DATA 32,B6,B8,32,B7,B8,C9
Angus Kidman (Armidale)
```

Printing option for Amfile

Browsing through my disc collection, I discovered a couple of text files (on the same disc as Amfile). I decided to load them into Tasword to find out what they were. They loaded successfully - my book collection which I had previously entered in Amfile. Oh joy, I can now print anything written in Amfile through Tasword.

Luke Peters

.COM maker

I have recently bought Maxam and have been progressing well with machine code. One thing that annoyed me was Maxam's inability to assemble machine code to a CP/M COM file. To rectify this I wrote a program to do the job.

To use the program enter your machine code, but remember to locate it at &100. Save the code as a binary file, taking note of the file length. Run my program and enter the name of the binary file, length of file and the name of the .COM file you wish it to produce. To test the program load CPM and type in the newly created .COM file at the A> prompt.

```
10 MODE 1:CALL &BC02:PAPER 0:PEN
1:PRINT"COM Maker"
20 PRINT:INPUT"Enter binary
filename ",binfile$
30 INPUT"Enter file length
",length
40 PRINT:INPUT"Enter .COM save
filename ",comfile$
50 comfile$=comfile$+".COM"
60 MEMORY &2FFF:LOAD
binfile$,&3000:OPENOUT comfile$
70 FOR k=&3000 TO &3000+length:
PRINT#9,CHR$(PEEK(k));
80 NEXT
```

```
k:CLOSEOUT:PRINT:PRINT"File
created":CAT
```

James Berry

Tape filing

There is no provision within Tasword 6128 (or 464D) to load and save files to tape - useful for archiving files and reclaiming expensive disc space. Anyone who has used the CPM programs CSAVE and CLOAD will appreciate this simple but effective poke which reconfigures Tasword to work from cassette.

Add the following to the Tasword Basic loader and save to disc as TWTAPE:

```
1 |TAPE:POKE &BC9B,&C9
```

Return to Basic and RUN "TWTAPE" to switch to tape at any time. Return to Basic and type |DISC:RUN "tasword" to switch back to disc operation.

Richard Hodges

Middle of the line

A simple way of ensuring text is centred on the screen is to use this small routine:

```
10 z$="Your string":GOSUB 1000
20 ` rest of your program
30 ` etc.
1000 PRINT TAB ((80-LEN(z$))/
2);z$:RETURN
```

As it stands the program centres text in Mode 2. Change the 80 in line 1000 to 40 for Mode 1 operation and 20 for chunky text.

David Ward

More files Per/Disc

This tip is in reply to David Frisk's letter (November issue) on how to increase the number of files in the directory from 64 to 128.

```
10 |A:OPENOUT"dummy":CLOSEOUT
20 a=PEEK(&BE42)+PEEK(&BE43)*256
30 POKE a+24,255
40 POKE a+07,127
50 POKE a+09,&F0
```

The above program is for drive A: only, however it can be converted to work on drive B: by changing line 10 to:

```
10 |B:OPENOUT"dummy":CLOSEOUT
```

and adding the following line;

25 A=A+64

Points To Note:

- Always start off with a blank formatted disc
- Always keep 64 entry and 128 entry discs separate since they are both incompatible in the others environment.
- The above program must be run every time the computer is switched on or reset in order to obtain the 128 entry mode. (It's a good idea to merge the program into the beginning of your own)
- If you need to return from 128 entry to 64 entry mode, you may either reset the computer, or if you need to do so from within a program add the line;

POKE a+24,0

This will reset set you back to 64 entry

mode as soon as you next access a disc.
Ted Krapkat (Mt. Larcom)

Computed restores

On the subject of computed RESTORES; you say they aren't possible on the humble Arnold - Wrong! They are. At the beginning of your amazing program add these lines:

```
10 GOTO 60
20 POKE 429,lin MOD 256
30 POKE 430,lin\256
40 RESTORE 10
50 RETURN
60 ` Start of program
```

Do not under any circumstances alter lines 10 to 50. Line numbers and contents included.

Say you wished RESTORE to point to line 600, simply put lin=600:GOSUB 10

somewhere in your program. It is that simple.

Kevin Hayward

Cleaner cassette deck

Many readers have problems when loading and saving from cassette. Perhaps the following may be of use:

Dab a cotton bud into methylated spirits, (or nail polish remover) open the tape deck's door and start the cassette motor (by issuing a CAT or similar command). If you peer inside towards the right (front) you should see a wheel turning. Gently prop the cotton bud against the wheel. Every few minutes alter the position of the bud. Just watch the dirt come away (and, hopefully, many loading errors).

Adrian Sill

Hackers Only

The section that brings out the CPC's darkest secrets to light. If you don't understand what's written here, bad luck. You'll get no explanation, for this is where the hackers hang out.

Cassette capers

The cassette deck included with the 464 (external device required with 664/6128 machines) outputs a square-wave signal of approximately 5 volts amplitude. Such a signal can be processed by the multi-functional 8255 parallel interface chip.

The 8255 contains 24 input/output bits. These bits may be programmed in two blocks of 12 bits. To make matters simple think of the chip as having three 8-bit ports (A, B and C). Port A gives input and output, port B input only and port C output only.

We are only interested in the chips cassette control feature:

Port A - input/output (address &F400)
Port B - input only (address &F500)
Bit 7 used to read cassette data.
Port C - output only (address &F600)
Bit 5 used for writing to cassette.
Bit 4 turns motor on or off.

A write-only control register (located at &F700) determines whether a bit sent to port C is either 0 or 1. The bits sent to &F700 do the following:

- bit 7 must be zero
- bits 6-4 not used
- bits 3-1 determine which bit of port C is affected
- bit 0 determines the nature of the bit sent to port C

Practical ports

Confused? Try the following in Basic:

```
OUT &F700,9
or in Z80 assembler
```

```
LD BC, &F709
OUT (C),C
```

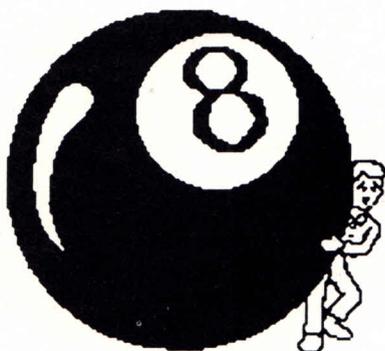
Uses and abuses

Like most ICs in the Amstrad, maximum use is made of the 8255. Its uses include operating the keyboard and sound chip, testing the vertical sync of the CRT, checking that the printer is ready to receive data and by detecting the position of a jumper it generates either a 50Hz or 60Hz picture. It even decides which of the 10-odd names will appear on power up (that is, Amstrad, Schneider, Arnold, Awa and so on). Another of the 8255's major functions is reading and writing bit-sized cassette deck data.

You should have heard the cassette motor start up. If you convert 9 to binary you get 00001001. Bit 0 is set. This means that the bit sent to port C will also be set (1). The 3rd bit is also set which tells us that bit 4 of port C will be affected. To switch off the cassette motor issue an OUT &F700, 8 - try and work out why it works.

Another method of switching on the motor (or rather setting bit 4 of port C) is OUT &F600, 16.

Get to grips with this manner of switching on and off the cassette motor as next month we shall go one step further - cassette reading and writing.



Getting behind?

Catch up with Year Disc Eight!

The Amstrad User - Year Disc 8 Issues 37 to 40

Side 1 (58k free)

464-6128	(40)	6K	FLOODCIT	(38)	2K	PEDIGREE	(37)	12K
BANKEX1	(40)	1K	FONTS	(38)	2K	PLOTTER	(37)	1K
BANKEX2	(40)	1K	FORMATS	(37)	7K	RELAB	(37)	2K
BANKEX3	(40)	1K	FREEZE	(38)	1K	RELOC1	(39)	2K
BANKEX4	(40)	1K	GWINDOW	(38)	1K	RELOC2	(40)	1K
BANKEX5	(40)	1K	LEAGUE	(38)	2K	SC-HOUSE	(37)	1K
BANKSCRN	(39)	1K	MANDBROT	(39)	3K	SCROLBIG	(37)	2K
BANKSWAP	(39)	1K	MANDPIC1.PIC	(33)	17K	SMART	(40)	8K
CASVERT	(38)	1K	MANLOAD	(39)	1K	TEXTEDIT	(38)	4K
DIASPIN	(37)	1K	MASKEX	(38)	2K	VORTAC	(37)	4K
DIGITISE	(40)	7K	MCGRA	(39)	5K	<i>*Figures in brackets denote Issue Number</i>		
DIGITISE.BIN	(40)	1K	MEMORY	(38)	3K			

Reference to original magazines may provide more information on the above programs

Side 2 (58k free)

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Year Disc Eight contains all the major CPC programs published in Issues 37 to 40. It also contains some more Public Domain software (free of course) to run under CP/M. Here's a run-down on the freebies:

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Spheriscreen

Discover a program's secrets: how it works, improvements that can be made and techniques worth remembering.

How would you like to add special effects to your screen images? Find out how with Peter Featherstone's incredible listing.

Peter Featherstone has written a spectacular program that takes a normal screen and distorts it in several ways. The effects are similar to those achieved on the Quantel graphics computer used by television companies to produce video effects. The screen, once loaded, can be folded or rolled into a sphere or cone and subsequently saved.

As it stands Spheriscreen will only run on 664 and 6128 machines. To get it running on a 464 simply alter all occurrences of POKE &B7C6, 192 to POKE &B1CB, 192. Similarly change POKE &B7C6, 64 to POKE &B1CB, 64.

```
100 ' SpherisScreen
110 ' by Peter Featherstone
120 ' The Amstrad User, June 1988.
130 '
140 KEY 0,"Poke &B7C6,192"+CHR$(13):MODE 2
150 PRINT "Which type of effect do you want?":PRINT:FRINT
160 PRINT "1> Horizontal Wave":PRINT"2> Vertical Wave"
170 PRINT"3> Sphere":PRINT"4> Cone":FRINT:INPUT type
180 IF type<1 OR type>4 THEN GOTO 140
```

Notice the manner in which Peter tests for a key press. Lines 150 to 170 print the options, the end of line 170 waits for your input and line 180 checks that you haven't typed anything but a number between 1 and 4.

```
190 ' *** SET UP COLOURS AND LOAD SCREEN ***
200 ' These will have to be altered depending on
210 ' the screen you are loading. All routines
220 ' have been written for MODE 0 screens but
230 ' can be converted for the other two modes.
240 '
250 BORDER 0:MODE 0:RESTORE 270
260 FOR f=0 TO 15:READ a:INK f,a:NEXT f
270 DATA 0,2,26,16,24,8,18,11,7,10,3,6,15,13,20,14
```

Spheriscreen has been programmed to work in Mode 0. This means 16 colours may be allowed on screen in one go. Line

260 reads each DATA item held in line 270 and changes colour accordingly. You may substitute the colours of your choice. The first number refers to ink pot one, the second to ink pot two and so on. The User Instructions contain a list of all the colours and their corresponding colours.

```
280 ' *** LOAD SCREEN INTO MEMORY ***
290 MEMORY &3FFF:LOAD "'mandpici.pic",&4000
```

Line 290 loads the screen of your choice into memory location 16384 (&4000). Don't forget to place the desired filename between the quotes in line 290.

```
300 ON type GOTO 310,380,450,570
```

Peter has made clever use of the GOTO command in the line above. The line the program branches to depends on the value: 1 and it goes to line 210, 2 and it's off to 380.

Horizontal manoeuvres

The CPC screen can have a maximum of 640 pixels across by 200 down. Mode 0 has 160 by 200 dots. In each Mode the addressing system is the same. The STEP in line 320 accounts for the horizontal resolution. Similarly for the vertical resolution in line 330.

The screen being manipulated is stored out of view, at address &4000. Each pixel on the lower screen is TESTed and then replotted on the upper screen, but in a different position (depending on the effect chosen). When the computer TESTs a pixel it must do it on the screen held lower in memory. To fool the computer into thinking the actual screen is low down a POKE is used. All screen operations will now take place in the lower image. Once the screen has been TESTed a second POKE is issued. This tells the system that the screen is back in its original position.

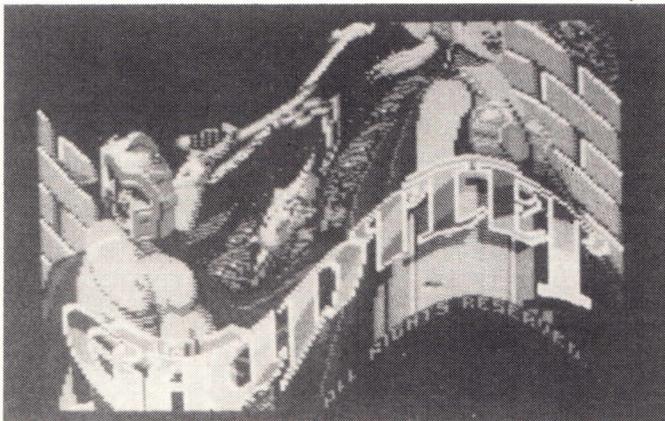
If you wish to distort the screen by different horizontal amounts try altering the variable s and its step rate (line 320). You could also alter the logarithmic function in line 340.

```
310 ' *** HORIZONTAL WAVE ***
320 DEG:s=180:FOR f=0 TO 636 STEP 4:s=s+2.5
330 FOR g=0 TO 398 STEP 2:POKE &B7C6,64:t=TEST(f,g)
340 POKE &B7C6,192:PLOT f,g+(100*SIN(s)),t:NEXT g,f
350 IF INKEY(60)=0 THEN SAVE "Hwave",b,49152,16384:END
360 GOTO 350
370 '
```

The vertical distortion routine starts at line 380. It is identical to the horizontal routine, but just acts in a different plane.

Again, you may increase or decrease distortion by altering variable *s* in 310. Once the picture has finished drawing you may press *S* to save it. Insert the filename in line 420. The same goes for all the routines.

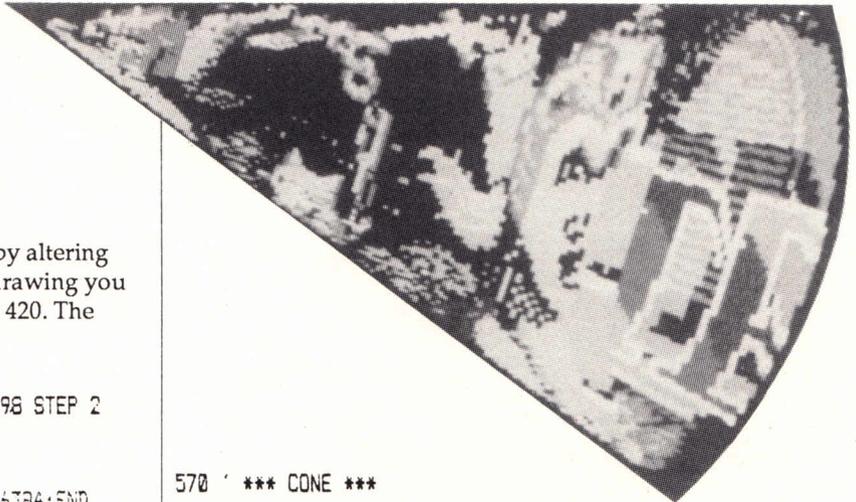
```
380 ' *** VERTICAL WAVE ***
390 DEG:FOR f=0 TO 638 STEP 4:a=0:FOR g=0 TO 398 STEP 2
400 POKE &B7C6,64:t=TEST(f,g):POKE &B7C6,192
410 PLOT f+100*SIN(a),g,t:s=s+2.7:NEXT g,f
420 IF INKEY(60)=0 THEN SAVE "vwave",b,49152,16384:END
430 GOTO 420
440 '
```



Bubble trouble

```
450 ' *** SPHERE ***
460 DEG
470 x=160:y=0: ' CHANGING X WILL ALTER THE VIEW OF THE SPHERE
480 FOR f=90 TO 270 STEP 2.25:y=0:FOR g=180 TO 360 STEP 1.111
490 POKE &B7C6,64:t=TEST(x,y):POKE &B7C6,192:rx=180*SIN(f)
500 PLOT 320+rx*SIN(g),200+160*COS(g),t
510 DRAWR 0,4,t:DRAWR 4,0,t:DRAWR 0,-4,t:y=y+2:NEXT g
520 x=x+4:IF x>636 THEN x=x-636
530 NEXT f
540 IF INKEY(60)=0 THEN SAVE "Sphere",b,49152,16384:END
550 GOTO 540
560 '
```

A clever piece of mathematics in lines 370 and 380 turn your original picture into a sphere. By altering variable *x* you can alter the view of the sphere. If you ran the program several times - using the same picture - altering *x* by a little each time you could save a sequence of spherical screens and then re-display them quickly to give the impression of rotation.



```
570 ' *** CONE ***
580 DEG:ra=2:FOR f=40 TO 540 STEP 4:g=0
590 FOR r=0 TO 359 STEP 1.8:POKE &B7C6,64:t=TEST(f,g)
600 POKE &B7C6,192:PLOT f+ra*SIN(r),200+(ra*2.5)*COS(r),t
610 DRAWR 0,-4,t:DRAWR 4,0,t:DRAWR 0,4,t:g=g+2:NEXT r
620 ra=ra+0.5:NEXT f
630 IF INKEY(60)=0 THEN SAVE "cone",b,49152,16384:END
640 GOTO 630
```

Each distorted image takes anything from half-an-hour to produce. A long time to wait, but the results are astounding. Just look at the pictures on this page. Can anyone produce a speedy machine code version?

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# Three great games

A big screen conversion, a Nemesis variant and a soccer game to dribble with

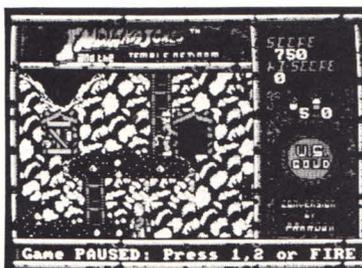
## INDIANA JONES AND THE TEMPLE OF DOOM

US Gold, joystick or keys

I don't know about you, but I felt that the film lacked in substance and storyline and realism and ...enough of that. I also felt that the game at the arcades did, as well. Did they copy it straight onto the Amstrad, or did they have to change something?

You play Indie in his quest to rescue the children trapped in the Temple of Doooom. Of course whilst you are there, being somewhat of a hunter of rare artifacts, you must also rescue the Stones of Ankara.

Unlike the arcade version, you cannot choose from three skill levels. Apart from that the rest is true to life. The Thuggee guards still persist in following you everywhere and magically killing you by walking into you. The



Ohlo Smith and the religious centre of slight foreboding

Emperor still pops up every now and again to welcome you to his Temple of Doom by throwing fireballs at you.

You still have your whip by your side which you use to break the locks on the cages which hold the children, paralyse

the Thuggee guards, stop the fireballs, make the Emperor disappear and to swing across gaps by lashing it round conveniently placed pit-props embedded into the stonework.

The railway is your only means of escape and is as difficult as the arcade one, with breaks in the line and the constantly ambushing Thuggee guards.

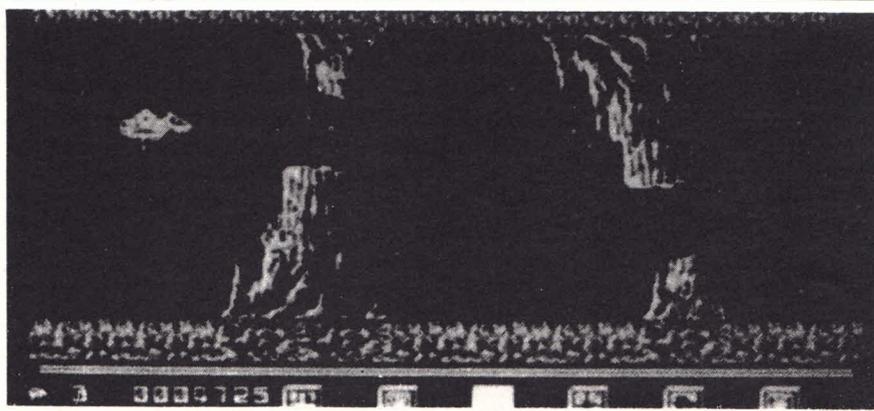
Whatever I said in the first paragraph, this is still a good game to get. The movement is not as slow as some of the other US Gold conversions. The graphics are as varied as the real game, and the sound is just as good - except for the lack of speech, but then what do you want - miracles! Definitely one for my collection.

## TRANSMUTER

Codemasters, joystick or keys

In the distant future the sun is a red giant and man has to burrow deep into the heart of the planets core in order to survive. Deeper and deeper man delved and on the levels above machines were left to guard the tunnels. A huge ship was created and launched into space with what was left of the human race on board. Time passed and now you return to spring the trap, which your ancestors left behind to make it safe for unwary travellers.

This is a Nemesis variant with a horizontally scrolling landscape, along which you must fly your spaceship. Contact with any of the static or moving hazards loses a life and you have to return to the start of the level. If you complete a level a bonus screen appears on which you can boost your score. The



next level then begins and things get steadily more difficult.

There is a slight variation with this game in that there is a row of icons across the bottom of the screen. These

are speed, double, bomb, laser, add on and shield. To move through the icons you must shoot as many aliens as possible. To select the icons you simply press the space bar.

The graphics are some of the worst that I have seen on the Amstrad. The scrolling is jerky and use of colour is not

brilliant. There are some nice tunes but the in game effects are lousy. This is not up to the usual standards of

Codemasters. I hope their next is better.

## GARY LINEKER'S SUPERSTAR SOCCER

US Gold, joystick or keys

Passes, dribbling, injuries - Superstar soccer packs in all the action and realism of real outdoor soccer, or so the opening paragraph of instructions tells us. Well there is only one way to find out, let's play the game.

After the load screen has been displayed and the game is loaded we are offered the master menu screen. From this screen you can do all sorts of wonderful things. So let's wiggle the joystick around and press a few keys and see what we can make happen. First up is league status, this is our team's status, showing how many games and seasons we have played, how many trading points we have and so on.

Next in the list is team history where we can find information on other teams, such as how many games have been won and lost by that team as well as a host of other information that will come in useful when planning your strategies against them.

Next we can view game scores of the last set of games played, this helps you to see if your next opponent is in form or not.

You can even look at any one of the four divisions in the league at the press of a button.

Well so far so good but I haven't dribbled yet. At this point we have looked at everything that does not affect the game, now we come to the interesting parts, trading players, improving players and recruiting players, yes you can do all of these things but of course they are going to cost you trading points to carry out. Trading points, by the way, are the monetary system, you are awarded more trading points at the end of each session depending on your team's performance.

Now we go into the game itself; you set up your team and decide if you wish to play the centreforward or coach or both.

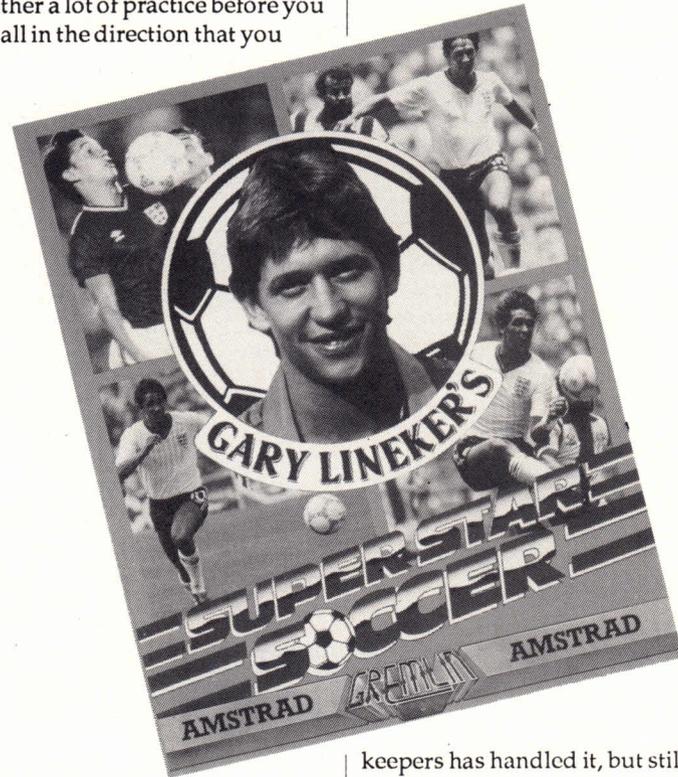
As coach you are able to decide on the game strategies for defence and attack as well as substitute players. You are able to do this everytime the ball goes out of play (ie. when goals are kicked or the ball

is kicked out for a throw in).

As centreforward you play this position trying for goals and tackling other players. A marker at the bottom of the screen indicates the direction the ball will take if you kick it. You will find that it takes rather a lot of practice before you kick the ball in the direction that you wish.

which player is going around in circles.

The other major problem and one which we are told will be fixed before the game goes on the Australian market is that the ball is invisible after half time. It regains visibility after one of the goal-



In all you have 64 teams in four divisions and you play for nine seasons. Each game can be played at various times from normal to 10 times normal. A few small problems in the game, the worst being that you play on a mode 1 screen, this limits you to four colours which can at times make it difficult to distinguish players from each team but worse than this, the centreforward is in the same colours as the rest of the team and more often than not you lose track of which man he is. This can be rather a shock when you think you are controlling one of the men and it turns out that your man is nowhere near to him. It means that a lot of your time is spent wiggling the joystick and looking at the screen to see

keepers has handled it, but still it is rather a nuisance.

I think that while the game won't get your heart beating nineteen to the dozen you will find it enjoyable although if you don't like soccer I don't think you will like this game. But for anyone who knows nothing about soccer, don't worry, the instructions come with hits and tips for playing strategies.

When all has been said and done it's rather a good effort, remember all the information for all 64 teams is kept within the game for you to view. This is rather a lot of data, top marks to the programmers for this but don't buy this program if you are looking for a heart stopper with plenty of excitement. I would give it a 6 out of 10 for the overall quality and interest value.

# PCW 8256/8512 & PC Software

## GAMES for PCWs

| Title                                                                                            | Price    |
|--------------------------------------------------------------------------------------------------|----------|
| <i>Classic Quest Adventures:</i>                                                                 |          |
| Goblin Towers (moderate)                                                                         | 49.95    |
| Forestland (hard)                                                                                | 49.95    |
| Witch Hunt (very hard)                                                                           | 49.95    |
| 'Colossus' Bridge + book                                                                         | 49.95    |
| Distractions - 3 graphics games compilation: On the Run, 2112 AD and Nexor (three only in stock) |          |
| Graham Gooch Cricket (Limited Overs & Test Match)                                                | 59.95    |
| The Pawn                                                                                         | 89.95    |
| Silicon Dreams                                                                                   | 59.99    |
| Starglider                                                                                       | 69.99    |
| Steve Davis' Snooker                                                                             | Temp O/S |
| Tetris                                                                                           | 59.95    |
| Tomahawk                                                                                         | 57.95    |

## SPREADSHEET

|                 |       |
|-----------------|-------|
| Scratchpad Plus | 99.00 |
|-----------------|-------|

**Supercalc2 - now only one left costing just \$100.00**

## DATABASES

|                  |        |
|------------------|--------|
| Cardbox          | 129.00 |
| Cardbox Plus     | 199.00 |
| Condor One       | 149.00 |
| Database Manager | 99.95  |
| Masterfile 8000  | 119.00 |

## DESKTOP PUBLISHING

|                        |        |
|------------------------|--------|
| Desk Top Publisher     | 99.00  |
| Fleet Street Editor    | 135.00 |
| Newsdesk International | 75.00  |

## WORD PROCESSING

|                          |        |
|--------------------------|--------|
| LocoScript 2 (vers 2.16) | 75.00  |
| LocoScript 2 + LocoSpell | 130.00 |
| LocoMail 1 and 2         | 105.00 |
| LocoSpell 2              | 75.00  |

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

|                |          |
|----------------|----------|
| Tasword 8000   | 79.95    |
| Tas-spell 8000 | 56.00    |
| Wordstar PCW   | Temp O/S |

## Miscellaneous

**DR CBASIC Compiler - an enhanced Cbasic compiler providing high performance for professionals or experienced Basic users. Normally \$149, our price 100.00**

**Brainstorm** - a tool for structuring raw ideas in a logical manner 99.00

**Mini Office Professional** - the PCW version of the highly successful Mini Office II with Spreadsheet, Word-processor, database, graphics and communications all for just 129.00

**Money Manager Plus** - cash book/ personal accounting 99.00

**Plan-it** - desktop organiser, plan budgets, sort files etc. 49.95

**Touch 'n' Go** - the friendly approach to typing skills 69.00

## TASMAN PRODUCTS

|                |       |
|----------------|-------|
| Tasword 8000   | 79.95 |
| Tas-spell 8000 | 56.00 |
| Tasprint 8000  | 52.00 |
| Tas-sign 8000  | 89.95 |

## PERIPHERALS

**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

**SCREEN FILTER** 29.95

**SERIAL INTERFACE (CPS8256)**  
For linking other equipment (eg. modem, daisy wheel printer) to a PCW 8256 or 8512. Normally \$99.00 but our price just \$69.00  
*If you missed out last time, be quick - we have just 8 units!*

## PC GAMES

| Title                        | Price |
|------------------------------|-------|
| <b>Crazy Cars</b>            | 59.00 |
| <b>Classiques #2</b>         | 59.00 |
| Crossfire                    | 19.99 |
| <b>Elite</b>                 | 69.00 |
| F-15                         | 49.95 |
| Games Pack 1 (13 games)      | 29.99 |
| Games Pack 2 (4 games)       | 29.99 |
| Gunship                      | 79.95 |
| <b>Impossible Mission II</b> | 49.95 |
| Leader Board                 | 49.00 |
| <b>Moebius</b>               | 59.00 |
| <b>Pirates</b>               | 69.00 |
| Summer Games                 | 45.00 |
| Tenth Frame                  | 59.00 |
| Tetris                       | 49.99 |
| Winter Games                 | 45.00 |

## PC EDUCATION

|                           |       |
|---------------------------|-------|
| Alphabet Zoo              | 59.95 |
| Chem Lab                  | 69.95 |
| Creature Creator          | 59.95 |
| Cryptocube                | 59.95 |
| Decimal Dungeon           | 49.95 |
| Delta Drawing             | 59.95 |
| Donald Duck's Playground  | 49.95 |
| Face Maker                | 59.95 |
| Fraction Action           | 49.95 |
| Grammar Examiner          | 59.95 |
| Kids on Keys              | 59.95 |
| Kidwriter                 | 59.95 |
| Kindercomp                | 59.95 |
| Math Maze                 | 59.95 |
| Mickey Mouse's Space Adv. | 49.95 |
| Mission Algebra           | 59.95 |
| Race Car Arithmetic       | 49.95 |
| Spellagraph               | 59.95 |
| Spellakazam               | 59.95 |
| Spellicopter              | 59.95 |

## PC BUSINESS

|                                          |        |
|------------------------------------------|--------|
| ABC Business Pack                        | 499.99 |
| Ability Plus                             | 350.00 |
| Ability                                  | 199.00 |
| Biz Pak 1                                | 29.99  |
| Brainstorm                               | 149.00 |
| Cardbox PC                               | 179.00 |
| Condor 1 Jnr                             | 225.00 |
| Desktop Accountant                       | 450.00 |
| Financial Accounting for non-Accountants | 199.00 |
| In-house accountant                      | 199.00 |
| MASTERFILE PC                            | 199.00 |
| Mini Office Professional PC              | 189.00 |
| Personal Cardbox Plus                    | 399.00 |
| Scratchpad Plus                          | 149.99 |
| Tasword PC                               | 89.95  |
| Tas-spell PC                             | 115.00 |
| Tas-print PC                             | 89.95  |
| Touch 'n' Go                             | 69.00  |

Mail your orders to:

**THE AMSTRAD USER, 1/245 Springvale Road  
Glen Waverley, Vic 3150**

Phone your firm orders to: (03) 233 9661

*Bankcard, Mastercard or Visa accepted.*

Please note that items on this page are Mail Order only. Prices may change without notice - check first!

**Available from The Amstrad User while stocks last**

# PCW 9512

The typewriter is dead, long live the typewriter.  
Rob Ainsley puts the new model PCW through its paces

The arrival of the PCW 9512 marks the latest stage in Amstrad's well-publicised campaign to send the office typewriter into obsolescence. The 8000 series machines were targeted at a group of potential buyers hitherto uncatered for - people who wanted a word processor first and a computer second, if at all. With word processing software written very much with flexibility, ease of use and the finished layout in mind and a printer thrown in, at less than the cost of anything else on the market, the success of the 8256 and 8512 was assured. How many have been sold depends on who you ask, but the figure is many hundreds of thousands in Britain alone. And a large percentage of users who thought they would never buy a computer are finding that as well as a very good word processor they also have a powerful micro which can run spreadsheets, databases and programming software.

The only drawback was the printed output. The dot matrix printer is great for quick drafts or graphics, and can produce perfectly adequate newsletters, manuscripts, memos, casual letters and so on, but even on its 'High Quality' setting (euphemistically called NLQ or 'near letter quality') the slight smudginess and unevenness of the 16-dot letter pattern means you don't get the crisp, sharp quality you'd like in your business letters or important documents. Even the cheapest electric typewriter produces better results, and many businesses would prefer to have their mailshots typed out in clear typescript rather than NLQ letters LocoScripted in a quarter of the time. Of course you can hook up the 8000 machines to a daisy wheel printer, but by the time you've bought an interface, found a printer, and learned how to make it all work...

## To business

No doubt as a response to criticisms of the 8256 and 8512, Amstrad have designed the 9512 to fit in precisely with the requirements of the business letter writer. The software that comes with the machine comprises LocoScript 2 complete with the LocoMail mail merger and LocoSpell spelling checker. You also get a full CP/M system as provided with the 8000 machines allowing you to run all the other commercial software around.

On the hardware front, the 9512 comes with a daisywheel printer to give you perfect quality letters, but it also in-



cludes an extra printer interface built-in to enable you to use a dot-matrix printer. This is useful if you want to print out quick drafts documents, or use programs which can print out graphics.

For file storage, the basic 9512 only has one disc drive fitted, but it is a 'double density' drive which means it is the same kind as the B-drive on an 8512. As a result your discs all have over 700k of space, and the memory is (ten points for your I-Spy book if you guessed) 512k. After the PCW has gobbled up what memory it needs to work in this leaves 360k or so for the M-drive, big enough to run the largest programs from.

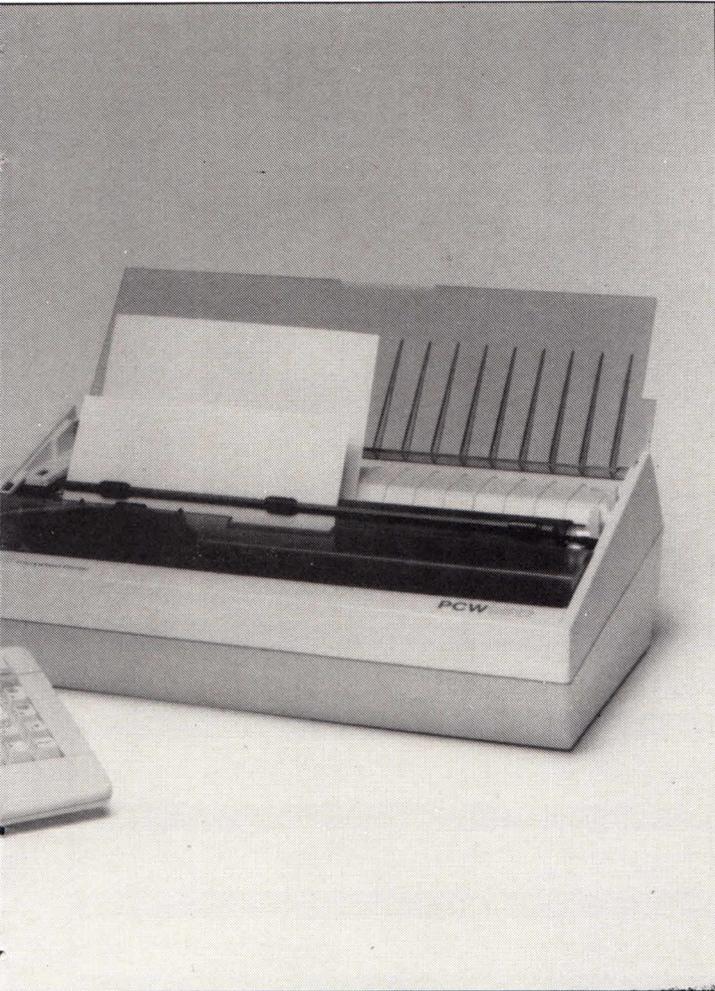
Amstrad say that there will be a twin-drive version of the

9512, which should in theory be available immediately.

### Changing keys

The design of the new model owes a lot to Amstrad's popular personal computer, the PC 1512. The disc drive housing sits underneath the white-screen monitor (which doesn't swivel like the 1512's does although it looks as though it should) and the whole unit is cased in white plastic, looking from the back very reminiscent of plastic spacecraft models in cheap sci-fi movies.

The keyboard is larger than the 8000's and has had a few



of the keys rearranged; the function keys f1 to f8 are now on the extreme left, next to the [CAN], [PTR], [ALT], and [EXTRA] keys. At the foot of this group are the set and clear keys, the [+] and [-]. The paragraph sign between the # key and the semi-colon has been replaced by a vertical bar. Otherwise the layout is as expected, though at last we know what the 'home' key (the one on the numeric pad with cross-hatching and no apparent function) was for all long; on the 9512, it invokes LocoSpell and spell-checks single words. The new layout is fine though it may take you a few attempts to get [SHIFT]+[EXTRA]+[EXIT].

The printer is bound to be the main point of interest. It's a solid, substantial looking piece of equipment. Like the 8000

series machines it is software controlled via the [PTR] key on the PCW - there are no control buttons on the printer itself. It will autoloading single sheets of paper, or has an optional tractor feeder for continuous stationery. The auto-feeder has a very powerful grip and can even pull through thickish brown envelopes.

One very welcome feature is the printer's wide platen which allows it to take A4 sheets sideways ('landscape' as LocoScript 2 called it to a generation of mystified 8000 users, whose printers are too narrow to take A4 that way) or use A3 paper. Solicitors specialising in verbose leases and voluminous documents will be ecstatic (and will have something new to charge for).

### Packet of diskits

As you switch on and insert your LocoScript disc you see the familiar screen messages followed by a longish pause as the dictionary for LocoSpell is copied into the M drive. The lines of the disc manager appear with all those example files LocoScript 2 owners will know and love.

The CP/M disc supplied uses the extra space of the B disc to supply a bagful of extra programs. There are various sample BASIC programs, a number of GSX example files, plus all the utilities that came with the 8000 machines such as BASIC, PIP, RPED, Logo, SID, and so on, but all fitting easily onto the one disc. DISCKIT has been revamped and had its display changed to account for the new keyboard layout.

The manual for your paperless office is a 600 page paperback with a copious index. The well-written LocoScript 2 manual forms the basis of the new manual, and the section on CP/M has been adapted from the old ring binder that came with the 8000 series. It's generally straightforward and

## Mail Supremacy

**The mailmerger, LocoMail, which comes with the package, enables you to churn out those standard letters you must have received thousands of (Dear Mrs Windsor, Great news! You, Mrs Windsor, have been selected out of all the people in Glen Waverley to take part ...etc etc.) in your time, though you can do it much more subtly and sensibly than those prize-draw circulars.**

**You make a list in one document of all the names and addresses you want to send letters to (plus some other details such as how well you know them, perhaps) and then create a standard letter in which you put various instructions between the commands (+Mail) and (-Mail) to the mail merger to the effect 'insert the surname here' or 'put the address here'. You can make things conditional for extra flexibility, for example 'print "Mr" and the surname if this is a business acquaintance and the first name if this is a friend', or 'print the next paragraph if the address contains the word Melbourne'. The letters are churned out automatically each with the appropriate inserts.**

**The combination of such a time-saving facility and the elegance of the daisywheel print will probably be one of the strongest selling points of the 9512.**

### Disc Partners

If you already have a PCW 8256/8512, you can use (almost) all of your discs in the 9512. B-drive (double density) discs can be read and written to as normal, while A-drive (single density) discs can only be read. The 9512 comes with a special program called 8000COPY which will copy your old single density discs to double density ones for you.

This means that any LocoScript documents you have can be read quite happily by the LocoScript 2 on the 9512. Also, any CP/M programs you have bought will run unchanged on the 9512 because the actual internal hardware of the new machine is substantially unchanged, despite outward appearances. All your database programs and data can be directly used on the 9512. You will need to follow the manual's instructions to make a new CP/M start-of-day disc, but from then on your old discs will run.

The fun and games begin if you try to use your old 8256 self-starting discs (boot discs) on the 9512, because you can't. However, the aforementioned utility 8000COPY, thoughtfully provided with the 9512, will take an 8256/8512 CP/M startup disc (one with the famous J14CPM3.EMS file on it) and will copy it onto a fresh disc as a 9512 startup.

If your program doesn't run from CP/M (many games don't; they have a special system all to themselves and you never see an A> prompt) you have problems. The bottom line of all this is that programs which are self-starting and don't run from CP/M (eg. the games Guardian, Blogger, Tomahawk etc.) will probably not work on the 9512. If you are lucky you may find that the suppliers will release a new version for the 9512 and will swap your old disc for a small charge.

constant footnotes telling you what to do if something goes wrong or if something isn't happening that's supposed to be happening, which is always nice to see in a manual. There is, for example, a detailed section on printer problems (stopping a printout when the paper jams, getting an unresponding printer to go) which is one of the most common afflictions of new PCW owners.

One snag with the manual is its sheer size. It is not spiral bound, and once you have found the correct page it is impossible to lay it flat to study while you work. Maybe one of the myriad printer foot and disc box manufacturers will come up with a clever device for holding the pages open.

#### No trace of an accent

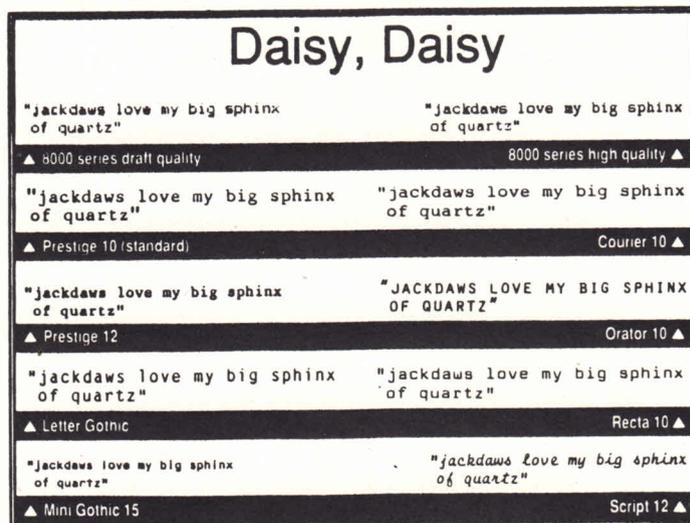
The printer that comes with the PCW 9512 is a daisywheel. This means it's great for producing neat and crisp letters and documents, and quickly too - in fact, much better quality faster than the old 8000's dot matrix printer in NLQ mode. But there are some things it can't do.

The main thing you can't do is graphics. All those pretty DR Logo snowflakes, all your screen dumps, all your desk top publishing and home-designed fonts, are out of the

question. If it ain't on the daisywheel, you ain't going to get it.

Foreign characters, squiggles, integral signs, black smiling faces and all the other characters lovingly designed by the LocoScript 2 programmers for use on the 8256/8512 are not supported, which is rather a shame since LocoScript can, as readers are no doubt aware, cater for languages as diverse as Welsh, Spanish, Russian, and Mathematics. Simple accents like French acute and grave are not on the standard wheel, although there will be an alternative 'Swiss French' set of wheels available with such accents on. All those italics, half-height, condensed, double-size characters and superscripts go out the window too - all of which is a shame when you think how good LocoScript is at handling all this fancy stuff.

But for most business and formal correspondence purposes the daisywheel's quality is all that matters. It's quick, too: a sample A4 page of double-spaced text printed on the daisywheel took 108 seconds. Compare this to the times for the same page on the 8000 series printer which were 131 secs (high quality) and 53 secs (draft quality). Other brands of dot matrix printer can of course produce faster draft printout still. Having a dot matrix for printing out drafts and internal memos would therefore be handy, and thanks to the built-in Centronics (parallel) interface at the back of the 9512 you can just plug in your other printer and, making the appropriate changes on the f6=Settings menu, away you go.



As LocoScript 2 users will be aware, documents are set up to expect a certain printer, which may or may not be the same as the 'current printer', the one the PCW is hooked up to. You can still print out a document set up for the daisy on a dot-matrix, you just get a warning that the types are different before you print.

#### Pica number

The wheel you get with the printer is a Prestige pica 10 pitch type. You can get various other styles and sizes, eight in all at the moment - Courier, Prestige, Recta and Orator in 10 pitch, Gothic, Prestige and Script (a pseudo-handwritten style) in 12 pitch and 'mini Gothic' in 15 pitch. When a

style) in 12 pitch and 'mini Gothic' in 15 pitch. When a daisywheel is given a number like 'Prestige 12' it means the wheel is designed to be used at 12 pitch. Other pitches can be used but the letter spacing might look unnatural.

Unfortunately there's no way of changing wheels in the middle of a document, that is, there's no 'pause' command to allow you to swap the daisy to another style for, say, a paragraph of fifteen-pitch for a quotation in the middle of a twelve-pitch body text.

One grouse: using proportional spacing on the daisywheel seems to give odd results - ms seem to take up far more room than they should, is less than they should; two ms together look much too far apart and two is squashed up. The look of normal 10 or 12 pitch appears more balanced. For portionally spaced text you really need a specially designed daisywheel which Amstrad, as yet, don't sell.

**Over the eight?**

Though it's tempting to think of the 9512 as an upgraded 8512 it's not really the case. The two machines are very different and which one you choose to buy depends very much on what you're using it for.

At the most basic level, offices would probably want a 9512 and private individuals - writers, journalists, letter writing hobbyists, genealogists et al - would still find the 8000 models better value.

However, anyone using their machine exclusively for word processing, especially where quality output is essential, would have no real reason for not buying the 9512; in fact, having the mailmerger and spell checker (and even the parallel interface) for free means it costs about the same as buying an 8512 and then adding LocoMail and LocoSpell later. But if you want to get graphics, different text sizes (for your desk top publishing and newsletters) or foreign language sets (fancy accents, Cyrillic, greek, mathematical work) out of your word processor then the 9512 is not really much use and it's the 8000 machines you want.

```
underline and double strike
italics and bold
pitch 17
pitch 15
pitch proportional
pitch 12
pitch 10
pitch 17 double
pitch 15 double
pitch proportional double
pitch 12 double
pitch 10 double
Accents oooooooooooooo
and superscripts and subscripts
```

```
underline and double strike
italics and bold
pitch 17
pitch 15
pitch proportional
pitch 12
pitch 10
pitch 17 double
pitch 15 double
pitch proportional double
pitch 12 double
pitch 10 double
Accents oooooooooooooo
and superscripts and subscripts
```

▲ The 9512 printer can still do text in any pitch (8000 printout above for comparison)

**Have your cake and eat it**

But nothing in life is that simple and maybe you want the best of both worlds - good quality daisywheel printout for your important business stuff but also the facility for quick drafts, fancy layouts and graphics that the dot matrix printer gives you. Perhaps you want to use a modem, in which case you need a serial interface, which the 9512 doesn't have.

Remember also that an unexpanded 8256 doesn't have enough memory to hold all of LocoSpell's dictionary. You can expand the 8256 memory yourself for a cost. The 9512 comes with a parallel interface suitable for connecting to another printer, if you want to use a modem or other communications software you will still need to spend money

on a serial interface unit.

**The bottom line**

The 9512 is an excellent machine. It combines professional, high quality printing with all the benefits of word process-

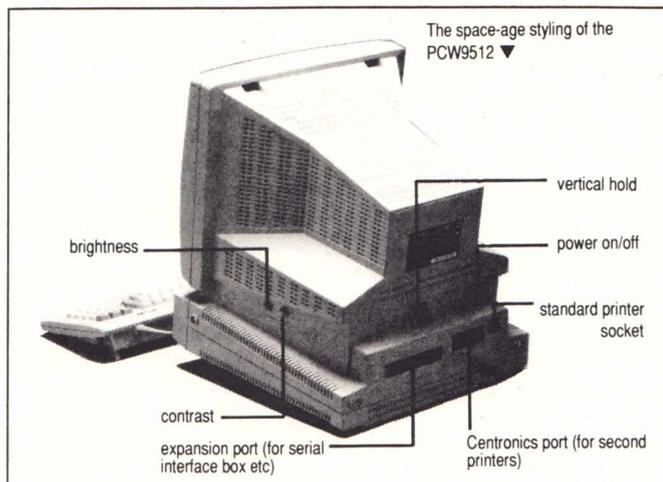
**Spellbound**

You can call up the spell checker any time during the editing of a document by pressing F7=Spell. You're offered a variety of options to check the whole document, check forwards from the cursor, or check a single word. The program runs through the file and collects up all the doubtful words which it highlights one by one in the text.

It then suggests a correction which you can paste in if required, though it's often comically unconnected ('Mr Hamilton' becomes 'Mr Hailstone' for example). You can ask to be shown an extract from LocoSpell's dictionary in the region of the doubtful word should you wish to choose an alternative - you just put the cursor over the one selected and it's automatically pasted in - though you have a variety of options such as editing the doubtful word manually, adding it to the dictionary if it is just one LocoSpell had never seen before, or ignoring it. The dictionary has around 80,000 words and capacity for a few thousand more in the 'user dictionaries' you can create; you'll probably want to add on various trade, personal and place names to the dictionary (especially your own).

A completely error-free 25k file (3500 words) took 7 minutes 29 seconds to check in the M drive and 7 minutes 51 seconds in the A drive. Depending on the number of proper names and typos, checking and amending a normal error-laden 25k file took twelve to twenty minutes. A typical single-page letter takes half a minute or so.

As with any spelling checker, the main use is for weeding out typos rather than anything else. Also, any spell checker only proves that the words you've used are recognisable words appearing in the dictionary, and can't check context or syntax. You could write 'colourless green ideas sleep furiously' and it would pass untouched; LocoSpell has never even heard of Noam Chomsky.



ing; its built in spell checker should make letters going out with ugly corrections in biro a thing of the past; its built-in mailmerger enables professional looking mailshots to be done in a fraction of the time it would take on a battery of typewriters. One day we'll all fall about laughing as we remember the old days of correcting fluid, dictionaries, and labouriously typed letters.

The workings of LocoScript 2, the spell checker and mailmerger take time to learn, but it's certainly one of the best word processors, if not the best, for novices. Apart from paid-up members of the Ned Ludd fan club and shareholders in typewriter companies, it's hard to see who wouldn't find the 9512 an essential part of their office system.

## PCW 9512 Vital statistics

### PRICE

\$1299.00

### SCREEN

White on black non-reflective glass, 90 columns by 32 rows. 720 by 256 pixels in graphics mode.

### STORAGE

Single 3" floppy disc drive, 720k storage capacity. Second drive available at extra cost.

### MEMORY

512k RAM, giving a 368k M: drive in CP/M or 110k in LocoScript (more if the dictionary is erased).

### WORD PROCESSING SOFTWARE

LocoScript 2, LocoMail mail merger, LocoSpell spell checker.

### OTHER SOFTWARE

CP/M version 3 (CP/M Plus). Includes CP/M utilities programs and Mallard BASIC and Dr. Logo languages.

### PRINTER

13" wide platen Daisywheel, claimed speed 20 characters per second (nearer 13 cps on average documents). Single sheet autoloading or continuous stationery tractor feeder. Multistrike carbon film ribbon, interchangeable print wheels. Prestige pica 10 pitch wheels as standard.

### EXTERNAL INTERFACES

Parallel (Centronics) interface. Expansion connector for serial interface unit.

## IMPORTANT ANNOUNCEMENT FOR LOCOSCRIPT TWO 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.

# Book look

Rob Ainsley leafs through some new books to help desktop publishing fans and programmers

## DESKTOP PUBLISHING WITH THE AMSTRAD PCW by Mike Milan

Despite the mushrooming interest in desktop publishing there aren't many books around on it. For the PCW specifically, it would seem this is the only available introduction to the DTP on the Amstrads - both the 8000 series and the 9512 are covered - and it's going to be a hard act to follow. The author, Mike Milan, manages to guide you through just about everything you'd want to know about to produce your own publication: word processors, DTP packages, hardware, reproduction methods, page layout - there's even a free headline-printer program thrown in as well!

The book kicks off with a brief description of the PCW itself - an introductory account of where your Amstrad stands in the run of computer things. It also puts the PCW's specifications, good points and bad points, in a DTP context. Another especially welcome section is a comparative rundown of the word processors available for the PCW, again with DTP use very much in mind. Protext, Tasword, NewWord and WordStar are all covered (included is a demonstration of how to create your own, personally designed fonts in Protext, for example - though it fails to mention this only prints out in draft quality). There's also a very useful guide to LocoScript's role in your publication (like designing trim marks - the guide lines for cutting your page up - in the headers and footers).

### Relevance graveyard

There are short sections on design and

general layout, showing where LocoScript comes into it all. Other manuals have more comprehensive accounts on how your page should be made up - the Desktop Publishing Companion, is much more technical and relevant to 'real' publishing, for example - but Mr Milan wisely keeps it brief and to the point for PCW users; after all, at the level of most small scale publications, a lot of page layout practice is common sense. He prefers the much more pertinent approach of giving specific, factual information about the materials you would use for pasting up artwork, and about the possibilities and restrictions of the available software and hardware - what you can get out of the various types of printers, for example: dot matrix, daisywheel, inkjet, laser, thermal etc. etc..

Art packages such as DR Graph, Electric Studio's ART, etc., are mentioned, and there's everything you'd need to know about mice, digitisers, photographic screening, and so on. Plus, of course, there's a reasonably detailed comparative review of the four main DTP packages currently available - The Desktop Publisher, Fleet Street Editor Plus, Newsdesk International, and even Stop Press. The author is clearly quite familiar with each package (there are hints on how to recover from a crash in FSE without re-booting, for example).

### Only a reproduction

The various methods of reproduction you would use (everything from offset litho to 'Banda'-type spirit duplicating - yes, you can cut Banda masters directly with a PCW printer) are described, though no prices are mentioned, and there are even sections on making

transparencies for an overhead projector and getting your text typeset professionally from disc.

In the appendices are a glossary, some suggestions for further reading, and an interesting BASIC listing which defines a very smooth and pleasant looking headline character set for you. It would be an extremely useful addition to anyone's desktop publishing system, though you would need a lot of patience to type in over 700 lines of BASIC!

The only grumbles you can reasonably have about the book are incidental. It is generally well illustrated, though the predilection for the rather bare and over-stylised drawings done with PCW graphics packages may irritate some readers. A few more examples of finished and laid-out newsletter pages - perhaps one for each DTP package - would have been nice too; in a subject so results-oriented as this, the more illustrations the better.

And, DTPers being so money-conscious, it would have been helpful to give at least a rough guide to what things cost. Many people start their DTP with a given (or more often borrowed) amount of money and this determines the hardware, software and method of production they will use.

But apart from that it's a clear, readable, comprehensive and well presented guide to the materials and methods of DTP. For anyone who has a PCW and wants to find out how they can unleash their creative talents on their own desktop publication, this is a must.

*Desktop Publishing with the Amstrad PCW is published by NCC publications and distributed in Australia by Jacaranda Wiley. It is also available through The Amstrad User for \$34.95 plus postage. (See page 64).*

## MALLARD BASIC - INTRODUCTION & REFERENCE (2nd Edition)

### Locomotive Software

All PCWs come equipped with the Mallard BASIC programming system, but in their wisdom Amstrad decided not to give owners any instructions on how to use it. Would-be BASIC programmers have to buy the manual from Amstrad as an extra, and until now even those who do often have a struggle, since the tutorial chapters were a bit cursory. Now Locomotive Software - the producers of Mallard BASIC - have come up with a new edition of the manual, which of course applies to 8000 series machines and 9512s.

As in the previous manual, the first part of the book is an introduction to programming in BASIC starting right from scratch, and leading up to writing your own database programs. You don't have to worry if you've no idea what a program looks like or how you'd go about writing one; you're led very gently by the hand right from switching

the computer on.

The second part is a comprehensive reference guide of all the BASIC commands, so if your memory fails you can quickly look up the correct way of using MID\$ or ADDR.

The additions in the new manual are not radical but are very useful. They look to have been put in very much for the benefit of general learner programmers rather than the hacker - for people who want programs they can apply to their business or leisure work.

One of the great strengths of BASIC is the 'Jetsam' system, a powerful set of commands which allow you to store and index information in disc files - in effect, to write your own database program. The new manual has a greatly expanded chapter on creating these files, and has a detailed account of how to write an indexed name-and-address.

The other notable extras are sections on machine code and the 'GSX' graphics system. If you're ever worried about your ignorance of what all this PEEK

and POKE business is, here's where to go. It's only intended as a rough guide to what the many letters to magazines telling you how to 'POKE your screen' and 'PEEK at the clock' are about; keen hackers would be advised to look to specialist publications on machine code.

One or two more appendices have been slipped in too - information on floating point arithmetic, the command line editor, trigonometrical functions, and the ASCII character set.

The new manual represents extremely good value for money. Of course, there are many other books around on how to program in BASIC, and if you are a total programming neophyte you may do well to have a look at these various 'how-to' publications in the book shops; they may be stronger on examples and tutorial. Having said which, the new sections in this manual are most welcome, and it is the only comprehensive and definitive guide to Mallard BASIC - as such, an indispensable reference for programmers.

### ORIGINAL CAVE PAINTINGS



# TIP-OFFS

More tips than a struggling waitress would ever get in the one evening

## More helpful tips for LocoScript 1 & 2 users

### Headers & Footers In LocoScript 2

When using the header and footer, I put (at first) a header of 5 spaces to accommodate my address, in sending letters. Putting that into a first page ONLY mode; I found that page two started at the same part of the page AFTER the address, as it did on page one, and the same for page three. So I experimented and made sure first I had made it ONLY for page one. So I cut out the header margin, NOT THE TOP GAP of course. Then on page one I ended my page five lines before the end of the page, ie. the end of the page was line 49, I actually stopped it at line 43 (six lines in this case). Reformatted my document which was a personal letter, and it came out smart and without losing any line spaces on page two and three.

### Customise layouts

In document edit mode. When formatting new layouts and endeavoring to set up a series of differing layouts and you find instead of say the 7 or 8 layouts you have made up, you only need 4, and you do not know what to do with the others; or alternatively, you wish to put YOUR format 4 to format 2, and vice versa, press f5 to get your layout menu.

First place your line on a layout section you do not want (say in this case layout 5) press the enter button and then the screen will give you the right to edit that layout. Recall the layout menu (f5) and run your menu cursor to the No. 2 layout, and press enter. This immediately puts No. 2 Layout into No. 5. Now enter again and it retains it there. Now recall your layout menu, and put your cursor onto No. 2 layout (NOT where you have shifted No. 2 to, but the old position). Press enter, and again by pressing f5 you can recall the menu and so you run your cursor down to 4 and press enter. Presto 4 is in place of 2. All it needs is for you to rename the layout to whatever you wish by pressing f7. Then (f5) again and go to what was 4 and 'enter'. F5 again and place the cursor on '2' (which you had placed in '5' remember) then press 'enter' and lo and behold your once time No. 4 is now No. 2 and so it is now your job to press f7 and rename that layout.

If you have made several experimental layouts and feel you could get confused when you may only want three or four; if you have one 'original layout menu' just do the same with those ones you do not want. Or merely rename them, which of course is the

easier method. Now I could not find this in the book (perhaps I am blind); but found the set up by accident, and knowing that I am not Robinson Crusoe, even if I do get my work done by Friday, I guess I felt I would like to share my findings with those of you who may be as dumb as me.

*Two tips from W.J. Hudson of Riverswood, NSW.*

### Simple keystrokes

For those who like to keep keystrokes to a minimum the following idea might appeal.

When using LocoScript the insertion of some codes eg. double width letters can be time consuming when using the drop down menus. To simplify this process my most frequently used or more obscure codes are saved as 'phrases' allowing me to insert them at any stage simply by using the PASTE option which requires only two keystrokes.

To do this, first turn on the codes display by using the f1 key. Then enter the codes you require and use the COPY key to save each code as a phrase.

For double print I use the letter D, the letter N returns this to normal print.

The letters A,B and C are used to change line spacing (1,2 and 3 respectively). I use the letters U and O to turn

underlining on and off.

When the phrases have been selected these are first saved by using the f8 'save all phrases option' and then I make sure that they are saved to my start of day disc.

### A better wordcount

When writing assignments which specify a certain number of words, quotes can usually be excluded for the purpose of the basic word count. In order to determine how many words of the document are contained in the quotes LocoSpell can be used as follows:

At the end of the document a word sure to make the checker stop eg. xx is used. The cursor is placed on the first word of the quote and the checking spelling command 'Just forwards from here' is selected. When the checker meets the deliberate error at the end of the passage it will produce one of its helpful suggestions. At this stage pressing the CANCEL key will result in the number of words counted to that point being displayed.

### LocoScript as an address book

We run a very small business and have no need of any specialist accounting software to keep track of finances. We use LocoScript for all our correspondence. To keep a track of the addresses of clients I enter each client's address f7 edit in the 'Edit identify text' option. I can then use the f2 inspect option as a simple means of recalling addresses.

In addition to this by using the 'LOCOSCRIPT INDEX' type-in (AMSTRAD USER Sept 1987) I can obtain a printout of all names and addresses on the disc.

*Three tips from Rosalie McDonald, Iverstone, Tasmania.*

**8512 disc manager speedup**

The PCW 8512 - or an 8256 upgraded to twin drives - allows much greater disc storage, but slows down the LocoScript disc manager operation. Each time the disc manager screen is called during editing or when exiting a document, the PCW

faithfully checks all three drives.

A simple speed up method is to remove the disc from drive B, and work solely from the A: drive, using a "workdisc" containing only a minimum of files.

The disc manager screen will now call up much faster, as LocoScript has far less disc

reading to do.

At the end of the working session, the documents can be copied across to a storage disc on drive B, to take advantage of the larger storage capacity.

Drive B can also be used as the "single" drive in the same way, to even out wear and tear on the drives. Again, make a workdisc containing

only the minimum number of needed documents.

To work even faster, you could always tempt fate (and the power supply) by removing both discs, and working completely from drive M.  
*Robert Moore, Warrnambool, Victoria.*

**And not forgetting the Protex users****Faster Protex Ruler Lines**

Compared to normal typing, text entry slows down when typing a new ruler line. The slow-down isn't too bad, but is noticeable when making a long ruler.

To speed things up, don't type the leading > that tells Protex that the line is a stored command. Instead, simply type a line of hyphens or spaces, ending with R to indicate the right margin.

If the new ruler will be

wider than the current active ruler, turn off Word-Wrap first using ALT-W.

Return to the start of the line, delete one hyphen (or switch to overtype), then type > to activate the ruler line.

Tabs can be placed using overtype mode before or after activating the ruler.

**Protex template for ASCII files**

ASCII (straight text) files are easily achieved in Protex

using the PRINTF command, which "prints to disc" rather than to the printer. However, these files retain the line formatting of the document, in the same way a LocoScript "Page Image" file does.

This can be a bother when transferring files from Protex to LocoScript - extraneous line returns must be edited out before the file corresponds to the new LocoScript layout.

A "simple text" file can be easily achieved from Protex by using a very wide ruler line. Making a specific template file is an easy way of doing this.

On the first line of the file, enter the stored command >ZM to set margins to zero. Now create a very wide ruler line; 500 to 1,000 columns or so. Name the file appropriately, and save it for use when needed.

To make a text file, MERGE the wanted document and the

template, and re-format using the FORMAT command. Each paragraph should now extend off-screen as a single line, unless it is very long.

This file can then be re-named, printed to disc, and inserted into the appropriate LocoScript document or template, where it will automatically reformat to the chosen layout.

**WARNING:** This method works well with files up to about 15k in length. However, larger files may crash when re-formatting.

Large files should be split into smaller sections using either the SAVEB command, or the CONVERT utility. Experiment with the length of the ruler line to fit the size of your average paragraphs - the shorter the ruler, the larger the file that can be re-formatted.

*Robert Moore, Warrnambool, Victoria*

**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**

**Printing with A4 paper**

From one Fleet Street Editor Plus user to another thanks to David Solomon for his tips. I have also experienced the problem of FSE Plus and Printmaster not finishing printing the last few lines but found a solution that saves any heartaches and still enables me to use A4 paper.

When the printer gets to the last few lines of the printout and stops the printer message appears along the bottom of

the screen.

Move the cursor to the Paper End Detection eg PO on/off. It will be "off". Put it to "on" by pressing the + key (immediate left of the space bar) and press EXIT. The printer will recommence and finish the page.

Details of this are available on page 121 of the Amstrad Manual.

*David Breach, Hallett Cove Estate, SA.*

# The Question

*How* many times have you sat down to prepare a speech, an essay, an agenda or a report and ended up with pieces of paper covered in arrows and scrawl which is quite understandable at the time but complete gibberish when



you return to it later? Take a moment to think about all those projects you have on your mind right now . . . how would you get them down on paper in a coherent order without interrupting the flow of ideas?

# The Answer



Brainstorm is a software product used on a personal computer and is often referred to as an ideas processor.

Presented with a mass of ideas there is little assistance that a word processor can offer, yet this embryonic stage when ideas are sparked off is a crucial part of the creative process.

Using Brainstorm you can capture random thoughts on any subject and get them down on paper in a sensible, structured and logical manner regardless of the order in which they occurred to you. Brainstorm allows you to think, write, edit and structure your thoughts all at the same time.

## Who uses Brainstorm?

Business people use it for writing reports, preparing an agenda, planning a meeting, or just planning.

Writers use it for preparing articles and books.

Students use it for writing papers and as an aid to study and research.

Teachers use it for preparing curriculums, lessons or sermons.

In the computer business Brainstorm is very useful for systems analysis, design and programming.

You could even use it to plan a holiday or wedding, in fact the uses for Brainstorm are limited only by your imagination.

Brainstorm consists of three versions on one disk: A pop-up version that sits a key-stroke away whilst you are using another application.

A stand-alone version for full-time use, or if your present software conflicts with memory resident products.

A restricted version with all the features which you have full permission to copy and give to friends or colleagues without infringing copyright and breaking the law.

**Brainstorm was designed in England and won the Innovative Software Product of the Year award. It is now published in Australia by Reckon Software Pty Ltd.**

*"It is almost impossible to outline all the possible uses for Brainstorm."*

*Computing Today*

*"It is well written, well documented, easy to use, useful and fun to experiment with."*

*Computer Answers*

*"Brainstorm is a truly original program, an invaluable partner for your word processor."*

*Amstrad Action*

## Systems Requirements

You will require an IBM compatible with at least 1 disk drive and 128 K memory.

Brainstorm is also available in a stand alone version for the AMSTRAD CPC6128 and the AMSTRAD PCW8526/8512 and 9512.

To find out where to purchase your copy or for information on other Reckon Software Products please call us on.

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# DIY Desk Top Publishing

## Beginning a short series on giving your desktop publishing that professional touch

**Desktop publishing is the in thing. Impressive though it sounds, it's rather vague term covering everything from photocopying a LocoScripted office memo for 10 cents a sheet to the page layout of a money-spinning glossy magazine. To most PCW owners DTP means producing newsletters - but do you really need specialised software, and how much does the whole thing cost?**

Of course you don't need a PCW to produce newsletters. Your local High Street print shop will be able to lay pages out for you; you just have to supply the text, handwritten in biro if you like. This costs, though, \$40 upwards per page; so even after two pages you've spent more than the cost of a PCW program which would enable you to do the page layout yourself - make up headlines as large as you like, juggle text around for the best arrangement, and manipulate graphics boxes with simple pictures and logos.

PCW quality won't be sufficient to compete with the professionals, unless you're prepared to spend several thousand dollars on equipment; headlines and large letters tend to be jagged and 'boxy' and the instant graphics (or 'clip art') supplied won't be works of art. But for DIY publications - club, community or company newsletters, notices, posters, and so on - DTP is not only an inexpensive way of producing perfectly acceptable results, it's great fun too.

### Lay it on me

You can just use LocoScript to make your news sheet - you don't actually have to buy a specialist DTP program. If your publication is to be a straight

newsletter composed almost solely of text it could well be adequate, and you could always use a good old Letraset rub-down lettering, available for a few dollars a sheet from your local stationer's, to make your headlines.

The first thing to do is decide on the paper size you are going to use for your publication. Most photocopiers use A4 paper, so that seems a sensible standard. In case the paper size conventions confuse you, the important ones are A3, A4 and A5. Quite simply, if you fold an A4 sheet in half you get an A5 sheet. A3 is the size of two A4 sheets joined on their long side.

This means that, given access to a photocopier which can do reduced size copies, you could reduce four pages of A4 each to A5 size and they would then all fit on one double-sided sheet of A4 folded pamphlet-like in half. This is a very common format and has the extra bonuses of reducing reproduction costs, saving trees, and seeming to smooth out jagged edges in your graphics. LocoScript standard text looks fine when printed half size, but superscript and subscript text can be hard to read at 50%.

All you have to do is print out your text and, with some scissors and glue, paste it down onto a master sheet until everything fits in the right places. Then take it off to your copy shop who will

do the rest for a moderately extravagant fee.

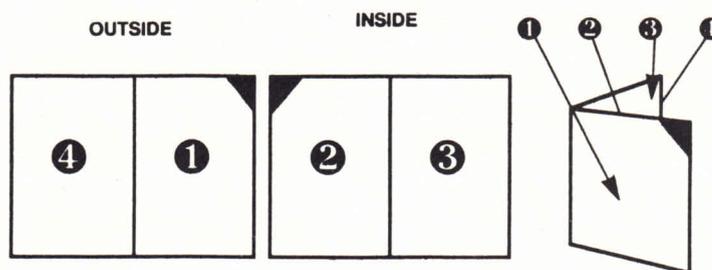
Enlargements or reductions are fine as long as everything on the page is reduced or enlarged the same amount.

Difficulty with printing in columns, lack of large text sizes and absence of graphics could be a problem on a more ambitious project though - which is where one of the currently available DTP packages come in.

Each of them is like an electronic layout pad: you can cut one of the graphics pictures out of the supplied library, make up your headlines using the supplied large text fonts, and read in text prepared by LocoScript or some other wordprocessor into columns. You can then move these items around until the layout looks right, print out your masters (you need the benefits of the 8000 series dot matrix printer, of course) and get copies made.

### The cost

If you have decided that simple LocoScript text is not enough for your mega-publication then the first thing you need is obviously your DTP program, the cheapest being Database's Desktop Publisher. Other packages available are the Electric Studio's Newsdesk International, Mirrorsoft's Fleet Street Editor and -just out- AMX's Stop Press.



▲ How to put your pages on a double-sided A4 sheet for folding

There are three ways of duplicating your publication - photocopying, stencilling, or 'proper' printing done by your friendly local High Street printers. Which you choose depends on a variety of factors, mainly the number of copies you want to produce, and how much money you have at your disposal; on a basic level, if you're talking tens or hundreds of copies a photocopier would be cheaper than printing, but printing gets much cheaper if you're thinking in thousands, and of course the quality can be much better. If you have access to a stencil duplicator, this would be the cheapest option of the three.

Probably the quickest and most convenient setup is to photocopy. Typical charges for double-sided A4 copying would be something like 20¢ per sheet, and for double-sided A3 30¢, though if you're doing more than a few dozen copies this could prove expensive.

#### Old faithful

An option not to be overlooked is the trusty old stencil duplicator, your Gestetner or Roneo; the quality of output, if done properly, can be very good. It is possible to cut stencils directly with your PCW printer - the 9512 daisywheel will cut stencils no problem, and even the trusty 8000 dot matrix will work as long as you take out the ribbon cassette before printing as normal onto the stencil; however, you could well find that your printer head gets clogged up with wax eventually, and while it's possible to clean it with a bit of WD-40 or alcohol, general opinion seems to be that it doesn't do the print head much good.

A better way of getting your material onto stencils is to print out your pages onto normal paper complete with graphics, line drawings and so on, and then get a stencil cut electronically from each page - an advantage of this is that you can reduce your masters with a photocopier first. As long as there isn't too much solid black on the page they will reproduce the original dot matrix printed output very closely. Your local office stationer should be able to do this for around \$3 per sheet.

The great advantage of stencil duplication is cost. If you have access to a duplicator then virtually your only

outlay will be for paper - and you can get a ream (500 sheets) of A4 copier paper for around \$8.00.

The cost of a reasonable second-hand duplicator can be anything from a couple of hundred dollars upwards - for large scale use a recommended model is the Roneo 880 which goes for around \$1100 second-hand; if you want a new duplicator you'd be paying around three times that amount.

The disadvantage of stencilling is that it can be tedious and messy setting up the machine, running off all the copies yourself and then folding and stapling the lot if required, but it saves you money.

For large runs - many hundreds or thousands of copies - proper printers will be able to print your publication relatively cheaply (by a process called offset litho), with very professional looking results. Fifty copies of double-sided A4 would cost you about \$50, but five hundred under \$100; and five thousand would be around \$170, just over 3¢ per copy!

Professional printers can offer various extra options. You could include photographs, or have a variety of ink colours for a tenner each. Either of these would make a simple newsletter look very impressive.

#### In the picture

Of course, apart from the text the next most important thing on your page will be illustrations. DTP packages all come with a variety of 'clip-art' - stock symbols like road signs, paper boys, aeroplanes etc. which can be added onto your page to liven it up. These images may be of limited use, and the quality won't be sufficient to make the graphic the main point of interest on the

page. Often the simplest thing is to leave a gap of the right size on the page and then glue on the picture just before you go off to the copy shop.

In general, any simple drawing in black ink will photocopy perfectly well, but photographs will not. This is because photos are made up of shades of grey and can't be reproduced on a printing machine which can only do black ink. The standard trick is called 'screening' - look at any newspaper photo and you will see it is made up of dots. Each dot is solid black and the shades of grey are simulated by making the dots larger or smaller.

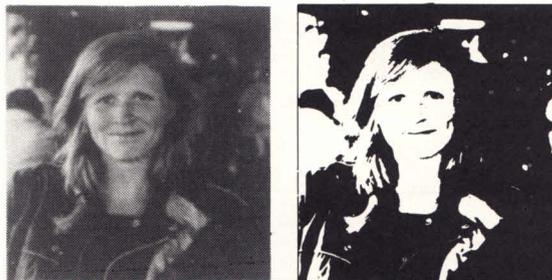
Your printer can do the screening of any photos you are using for a once-off cost of around \$5 each, after which the screened copy can be photocopied normally. Copies of unscreened photos always look ugly with unnaturally high contrast and large blacked-in areas.

An alternative is a 'video digitiser', which enables you to take a picture from a video recorder (hence TV pictures, or even shots you've recorded yourself if you have a video camera) and produce a version made up of dots which you can use in your publication. Digitisers will set you back about \$270, but shop around for package deals.

Digitised pictures give variable results - simple, high contrast pictures come out best, and complicated ones with lots of shades of grey worst. The advantage is that they'll photocopy well directly, although the quality of proper screened photographs is so much better. If you are doing photos in a serious way it would be better to forget the digitiser.

MasterScan is a device which fits onto your print head, scans pictures or graphics, and stores them on disc. The results can be cut and pasted into your

publication just like normal graphics. It would be good for using material from books or magazines but photographs or things on shiny paper don't come out too well. The same pros and cons apply for this as for the digitisers.



▲ A photo printed with and without 'screening'.

# 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  
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**PCW Year Disc  
Number 1**

**Side 1**

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| FILECODE (35) | 1K | MORSE (39)    | 2K  |               |     |

*Issue Number in brackets*

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

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# Double douceur

Two type-ins to make your PCW more answerable and improving your typing skills

## Error Messages by David Quest

With an insight that boggles the mind Mr David Quest has come up with the theory that the power of any computer package is not shown by the speed, range of facilities or the quantity of output. It is gauged, he suggests, by the obscurity of the error messages. It's obvious when you think about it really.

His research has shown that top programmers can knock up a program in minutes and then spend days devising informative messages like "Illegal Global Drivespec Mixing". But for those who lack the creativity to produce their own original error messages Mr Quest has come up with this little program that produce them for you.

Could we suggest that you use it as a Gosub tied into a mug-trap in your own programs. When you give the user the choice of saying Y or N and they choose Q they will find themselves staring at a message that says "Fatal bitstream buffering violation" or "Severe retrieval format corruption". That'll teach them.

Mr Quest points out that it could be used for producing instant buzz phrases for all sorts of subjects merely by adjusting the words in lines 1000 to 1030, and that new words can be obtained at random from any newspaper or cornflakes packet.

However, Mr Quest does admit that his program can never compare with the real thing. We reproduce his own favourite from a mainframe computer operating system. 'VME ERROR 37022: Hierarchic name syntax invalid taking into account starting points defined by initial context.' You must admit that is much more fun than boring old 'illegal filename' which he insists is the real meaning of the message. Remember that where the a line runs to more than one line on screen (as in 1000 to 1030) just keep on typing and do not use [RETURN].

```
100 ' Fancy Error Messages
110 ' by David Quest
120 ' The Amstrad User, June 1988
130 RANDOMIZE PEEK(64504!)
140 DIM w$(4,20),w(4)
```

```
150 FOR t = 1 TO 4
160 WHILE w$(t,u)<>"*" : u=u+1 : READ w$(t,u) : WEND
170 w(t)=u-1 : u=0
180 NEXT t
190 x$=""
200 PRINT : PRINT
210 PRINT "Processing data...." : PRINT
: PRINT
220 FOR a=1 TO 2000 : NEXT a
230 FOR b=1 TO 4
240 x$=x$ + w$(b,INT(1+RND*w(b))) + " "
250 NEXT b
260 PRINT x$ + "in line"(100 + 10 * INT(RND*10))
270 END
280 DATA Fatal,Severe,Non-recoverable,Untrapped,Unexpected,Online,Memory,Illegal,Processor,Remote,Terminal,Global,*
290 DATA file,monitor,diagnostic,integer,input/output,retrieval,stack,bitstream,increment,mantissa,CPU,system,*
300 DATA format,error check,verification,modulation,lookup,consolidation,sequencing,assignment,status,buffering,register,load,*
310 DATA deficiency,failure,corruption,violation,overflow,error,shutdown,underflow,limit exceeded,breakpoint reached,aborted,*
```

```
run
Processing data....
Terminal mantissa register violation in line 120
Ok
run
Processing data....
Processor system consolidation corruption in line 170
Ok
```

# Typing Tutor

## by J.T. Drien

The one thing every prospective computer expert must come to terms with is finding there way around the PCW keyboard. You may not need to be a touch typist to be a successful computer buff but it does waste a lot of time if you can't type at a reasonable speed.

This is where our latest typing tutor is so worthwhile. It encourages both speed and accuracy in only 26 lines of BASIC. The idea is that you type in the sentence that you want to practise (Now is the time for all good men...etc) and then you have to type it again as quickly and accurately as possible.

The cursor moves over the text again this time noting all the mistakes you make and also timing how quick,y (or slowly) you complete the exercise. Then in a rather heartless manner it insists on telling you these usually depressing details. You can then go back and try again or enter another sentence to practise. The sentence can be up to 255 characters (including spaces) so there is plenty of scope to make mistakes.

For the novice programmer, one point to note is the 'DEF FN...' definition in line 140 which allows you to place text where you wanton the screen. This is a simple version which just chooses which line you want (line 270 uses it to make the text printed on row 18 of the screen for instance).

Line 210 is the line where the program sets the PCW clock to zero, to allow it time to exercise. The loop in lines 220 to 250 compares your typing to the target sentence, adding one to the mistake count 'm' for each wrong press. The clock is read in line 260 at the end of the exercise. Line 330 is a particularly cunning way of saying 'If the user typed "D", go to line 170; If "Q" was typed, go to line 350; If "A" was typed go to line 200.

```

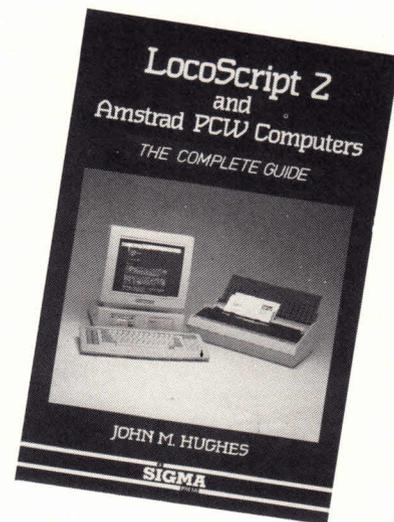
100 ' Typing Tutor
110 ' By J.T. Drien
120 ' The Amstrad User, June 1988.
130 '
140 DEF FNl$(y)=CHR$(27)+"Y"+CHR$(y+31)+
CHR$(31)
150 DEF Fnt(x)=INT(x*10/16)
160 cls$=CHR$(27)+"E"+CHR$(27)+"H"
170 PRINT cls$:PRINT FNl$(10),,"Type In
The Line You Want To Practise?"
180 PRINT FNl$(15),
190 LINE INPUT"",ex$
200 c=0:m=0
210 PRINT FNl$(15),:POKE 64504!,0
220 WHILE c<LEN(ex$)
230 GOSUB 360
240 IF a$=MID$(ex$(c+1),1) THEN c=c+1:P

```

```

RINT a$; ELSE m=m+1
250 WEND
260 secs=Fnt(PEEK(64504!))
270 PRINT FNl$(18),m" mistakes in"secs"s
econds
"
280 PRINT FNl$(22),,"D to practise a dif
ferent sentence"
290 PRINT FNl$(23),,"Q to quit"
300 PRINT FNl$(24),,"A for another timin
g"
310 GOSUB 360
320 a$=UPPER$(a$)
330 ON INSTR("DQA",a$) GOTO 170,350,200
340 GOTO 310
350 END
360 a$=INKEY$
370 WHILE a$=""
380 a$=INKEY$:WEND
390 RETURN

```



In this completely new book, John Hughes presents an easy-to-use but comprehensive guide to Locomotive's powerful word processor, LocoScript2. This book is of equal value to both PCW9512 users and to owners of the PCW8256 or 8512 who are upgrading to LocoScript2

Features of LocoScript2 covered include:

- efficient disc management techniques
- special effects
- using blocks and phrases
- designing LocoScript layouts
- setting up documents
- advanced techniques
- using different printers and print wheels

Three chapters are devoted to LocoMail - the powerful software from Locomotive that enables you to do mailshots with your PCW - as well as other useful tasks.

There are also major sections on CP/M and applications software for those intending to use their PCW as something more than just a word processor.

Available through The Amstrad User at \$43.00 plus postage.

(See page 64 for ordering details).

# Make headline news ... on your PCW

**T**HE revolution which has sent a storm through the printing industry now comes to your computer. With The Desktop Publisher you can unleash the graphics potential of your PCW to design newsletters, flyposters, adverts, letterheads and company reports - then print out the final artwork with headlines, text and graphics exactly where you want them.

## User friendly

And it's so easy to use. Simply move the pointer around the screen, then click on the option you require using the keyboard or the AMX, Electric Studio or Kempston mouse.

Drop-down menus give you split-second access to all the many facilities available.

## How it works

Start by planning your layout: Decide the number and width of columns, and position windows for graphics, captions and headlines.

Then load in your text written in LocoScript, or any other word processor that can output an ASCII file. The built-in text editor can produce perfectly fully-justified text with bold and italic characters shown on the screen just as they will be printed out.

You can design artwork using the feature packed graphics program that it included. You can draw lines,

boxes, triangles and ellipses, fill areas or paint with one of 16 patterns, and zoom in for precise pixel editing. There's even a built-in font editor so you can design your own custom character sets.

When you are ready you can preview your masterpiece in miniature, then print it out in top quality mode or use the faster draft mode.

## What you get

The double-sided disc contains the three main programs, a selection of useful clip art, extra fonts and a tutorial page.

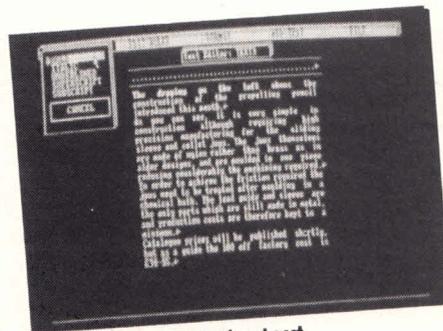
There's also an extremely comprehensive, carefully-written manual with a hands on guide that will ensure you are up and running in no time.

**And all for the  
incredible price  
of \$99.95**

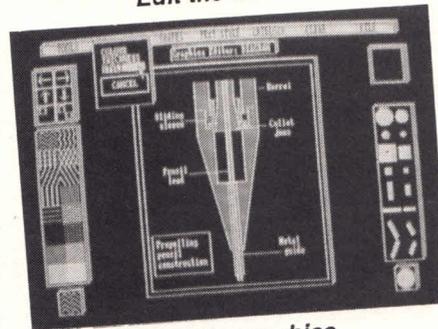
**And to get the maximum out of your Desktop Publisher use our great picture scanner and graphics package MASTER PACK**

MASTER PACK is the ultimate add-on to your desktop publishing program. Using the scanner, you can "read" a picture into your machine's memory, and then use this picture in your text. MASTER SCAN will "read" circuit diagrams, maps, charts, plans and even Photographs!!! These can be saved in any of several formats for use in your desktop publisher. Also in the MASTER PACK is the brilliant graphics program MASTER PAINT. This can be used to edit "scanned" artwork, or to create originals for use in the DESKTOP PUBLISHER.

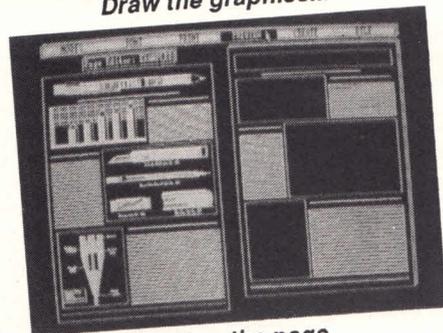
## How to use The Desktop Publisher



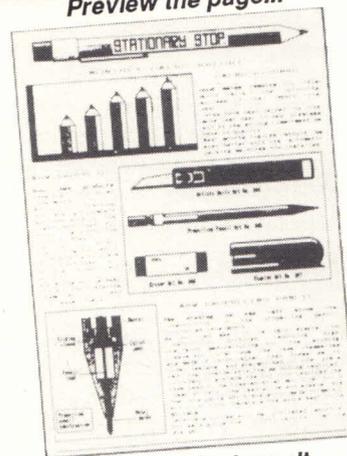
Edit the text...



Draw the graphics...



Preview the page...



... the finished result

## What the reviewers say:

### "TOP OF THE DESKTOPS"

Overall this is a very good package, easy to use and to find your way around... this is a package to be thoroughly recommended, and at the price is tremendous value for money."

(8000 Plus, August 1987)

"Database has produced a high-quality, easy-to-use package which implements desktop publishing on the PCW in a novel way...when you bear in mind the bargain price of The Desktop Publisher it's hardly worth being without one."

(Computing with the Amstrad, August 1987)

Available from Myer, Grace Bros, Chandlers, Steves Communications, Micro Computer Spot, Harvey Norman, Maxwells Office Equipment and computer retailers around Australia.

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 **Pactronics**

# Brainstorm

The ideas processor from Reckon Software which allows you to think, write, edit and structure your thoughts all at the same time

Numerous amounts of pads, scraps of paper and plenty of sharp pencils are traditional tools for the thinker. Some of you may be lucky and convey your thoughts to a dictation machine before having them typed out. But in the age of the Amstrad computer we turn to it for help. No, not using a word processor but with Brainstorm.

Word processors are wonderful when you have reached the drafting stage of a project and you have a logical line of thought to follow. Presented with a jumble of raw ideas, though, there is little assistance that a word processor can offer in creating order out of chaos.

The Australian producers of Brainstorm, Reckon Software, call it an ideas processor. The program accepts the random thoughts which come off the top of your head, in the same way as the first stages of brainstorming new ideas. At this point the program is nothing else but a notepad.

A great example of using Brainstorm is to create a manual or documentation to go with a program you may have written. When starting to write this documentation it is usually not possible to enter the data in the order it will appear in the manual. So we list all the main headings, and the list may look something like the one below:

Saving a file  
Opening a file  
Closing a file  
Creating a file

The opening menu *and so on...*

As you can see the above are not in any particular order and would certainly not appear in the manual in the above order. However Brainstorm is happy to let you type as it comes from the top of your head. After building up your main headings (as above) you may want to create sub-headings for every main heading. Below is a list showing how the sub-headings may look. The **bold** type indicates the Main heading and the *italics* type indicates the Sub-headings;

#### Saving a file

- To floppy disc
- To hard disc
- To tape

#### Opening a file

- From floppy disc
- From hard disc
- From tape and so on....

As you can see you are starting to build up a 3D note pad, this in effect is exactly what Brainstorm is designed to do. As you would expect, under each heading or sub-heading you can have plenty of text (to a maximum of 72 characters per line) which can be manipulated in any way like a word processor. There is no limit to how deep you may go with your sub-headings (memory permitting) and moving from one piece of text to another is quite simple. For example, if you are eight levels deep (8 sub-headings/headings) and wish to move completely to another heading you may do this with the greatest of ease. To do this you would use the search facility or "Hunt". Unlike most search facilities with word processors, Brainstorm's allows you to use an asterisk as a wild card. For example, typing "\* disc" would lead to floppy disc, hard disc and so on. Every

time a match is found Brainstorm will stop at the particular place. You can stop the search, continue, or move back to the last location. (very handy, if you only wanted to look for something).

You may also like to move blocks of text around, this can be done with minimal key strokes.

#### Save and Printing

This is where Brainstorm really shows its true potential, it is possible to print the whole document or from any heading to any other. This also goes for the save facility. You can also save them in a text format, which can be subsequently loaded into most word processors. This is useful for producing the finished product of a report or manual or book.

#### Operation

Unlike most packages which handle a lot of data, Brainstorm holds all information in memory. So everything seems to happen instantaneously, although this has its limitations. Using a PCW, it wouldn't take long to chew through all the memory if you think a lot and type equally as fast. But it's very easy to use.

#### Summary

Brainstorm isn't a bad package. Its value as a thought-sorting aid becomes apparent very quickly. Using Brainstorm encourages a more structured and disciplined approach to planning a project. The uses to which Brainstorm can be put cover project development, business planning, strategic analysis and even diary and address book management, report preparation and so on.

*Brainstorm costs \$99 for the CPC or PCW version and \$149 for the PC version. It is available from most dealers, or TAU. Enquiries to Reckon (02) 371 9222.*

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# Two disc utilities discussed and more shareware programs shared

by Chris Collins

Hello, and welcome once again to Compatible's Corner. My apologies to one and all for the brevity of last month's column, but business obligations and the fact that I was moving from my place of abode made it very difficult to fit a column into my schedule.

This month we have a couple of things to get through. First off is news of yet another update. Fas-type has been through a major revision, and has emerged as Version 3.00. The new version has been enhanced to such an extent that it no longer strikes me as an arcade game. It now supports the normal 84 key keyboard and the enhanced 101 key keyboard that is also available. This is one of the better updates that I have seen in a shareware program. If you require Fas-Type v3.00, please send in your old Fas-Type diskette along with a cheque for \$6.00 and I will forward the new version to you. If you don't have an old version to upgrade, Fas-type is available to you for \$10.00.

Onto this month's commands. We will be looking at two commands that belong together, and they both deal with diskettes. These commands are DISKCOPY and DISKCOMP.

DISKCOPY is used to do exactly what it's name implies, and that is to copy diskettes. DISKCOPY will copy the entire contents of a diskette in the source drive to a diskette in the target drive. The target diskette will also be formatted during the copy, if this is necessary.

The correct syntax for the DISKCOPY commands is as follows:

```
DISKCOPY [d:] [d:] [/1]
```

As always, the switches in the square brackets are optional, but they allow a lot more control over the copying process. The first [d:] indicates the source drive that will contain the diskette that you

wish to copy. The second [d:] indicates the target drive that will contain the diskette that you wish to copy to. This can be that same drive, if you only have one diskette drive. The last switch, [/1] specifies that you only wish to copy the first side of the diskette, no matter what it's format.

DISKCOPY will check out the disk and decide on the format. Then it will give you an exact copy in the target drive, except in three instances. The first instance relates to the [/1] switch. With this in force, DISKCOPY will only ever copy the first side of the diskette. The second instance relates to DISKCOPY striking an error on the diskette. It will inform you of the error and where it occurred, and then continue copying. It is up to you to find out if your target diskette is usable. The third instance relates to copy protected diskettes. Because of the funny way that these diskettes are formatted, DISKCOPY will attempt to copy them, but will more than likely give an error similar to instance two.

After finishing a copy, DISKCOPY will give you the option of performing another copy. Just answer Y or N as required, and proceed from there. A little bit more about DISKCOPY after we talk about DISKCOMP.

DISKCOMP is the second of our two commands for the month. DISKCOMP compares the entire contents of a diskette in the source drive, with the diskette in the target drive.

The correct syntax for the DISKCOMP command is as follows:

```
DISKCOMP [d:] [d:] [/1] [/8]
```

As with DISKCOPY, the switches are very similar, and they react in much the same way. The first [d:] relates to the source drive that will contain the master

diskette. The second [d:] specifies the target drive that will contain the second diskette. The [/1] switch will also force DISKCOMP to only compare the first side of the diskettes, no matter what their formats. The last switch [/8], will force DISKCOMP to only compare 8 sectors per track. The normal standard for 360k diskettes is 9 sectors per track.

DISKCOMP will go through the diskettes and compare track by track. If it finds an error, it will inform you where the error is, and then continue with the comparison. After the comparison is finished, you will be offered the choice of doing another comparison, simply answer Y or N as needed.

Now onto a couple of things that apply to both commands. If you try to specify a fixed disk drive (hard disk) as either the source or the target drive, both commands will give an error.

Both of these commands will work with a single diskette drive. When using either command, simply omit the drive specifiers. Both commands will then prompt you at the times when it is necessary to change the diskettes.

With the diskette drives fitted to your Amstrad PC, you have the ability to DISKCOPY and DISKCOMP the following types of diskettes: Single sided 160/180k diskettes, and Double sided 320/360k diskettes.

Lastly, remember that both DISKCOPY and DISKCOMP are meant to work with complete diskettes only. The necessary commands to work with files are COPY and COMP, but we will talk about those another time.

The three diskettes that we will look at this month are as varied as I can make them. They include extensions to DOS, diskette utility programs, and a program that makes forms. Now onto the first diskette.

The first diskette this month is called Bakers 12/XDOS. In order these are two archive files that contain 13 small programs put together by Jim Button (of PC File+ fame). The programs include the following:

ButtonCalc: a small one page spreadsheet with built in help screens, and an amazing array of commands for such a small program.

Calendar: a small calendar type program that allows viewing forward or backward by month or year. Also allows

saving of extra dates to disk.

**Locate:** allows you to search your current drive for either a file, or a text string inside a file. Also allows wildcards in the file search mode.

**P90:** sideways printing of text files. Requires an Epson compatible printer. Heaps of options available to the user.

**DiskUtil:** very powerful disk utility. Used to modify diskettes. File Allocation Tables, and also sectors on a diskette. Not for the faint of heart.

**PC Sort:** allows sorting of text files on up to four fields.

**GKey:** allows you to find the scan codes for keys as they are pressed or released. Also shows HEXADECIMAL and DECIMAL representations of the key codes for various characters.

**Prn File:** allows redirection of printer output to a disk file.

**RDIR:** removes directories from diskettes, whether they are empty or not.

**Set Scrn:** used to set the colours and border on your screen.

**Snapshot:** can be used to take a picture of an 80 column text screen, and then be used to replay them later. Good for creating help screens.

**SWCOM12 and SWLPT12:** the first is used to swap the COM (serial) ports, so that anything destined specifically for

COM2 can be redirected out COM1. The second program does the same for the LPT (parallel) ports.

All of the programs can be run from the menu supplied, or from the command line with you supplying all of the parameters. All of the programs also contain help screens to assist you in their use.

The second archive file on this diskette is XDOS. This is another group of programs from J. Button. It is not a replacement for DOS, but simply a set of eXtensions to DOS. They include the following commands:

**ATTRIBUTES:** Can be used to change the attributes of a file. These include markers that tell DOS whether a file is Read / Only, Read / Write, System or Directory and how is the Archive bit set.

**COPYING:** very similar to the DOS COPY command.

**DELETING:** very similar in use to the DOS ERASE or DEL commands.

**KILLDIR:** allows for the removal of a directory of a diskette, whether it is empty or not.

**LIST:** shows text files on screen.

**MOVE:** moves files around on a diskette, without actually moving the file. Useful if you wish to move a file from, say the root directory to a sub-

directory.

**RENAME:** allows for the renaming of files, and also directories.

**SEARCH:** allows for the searching of files for a text string that may be imbedded in one of the files.

**TIME:** allows you to reset the time.

**UPDATE:** searches across a diskette to find files with a later creation date, that will match the file specification listed. Will then copy them into the directory listed in the file specification.

All of the programs can be run from the menu program provided, or they can be run from the command line by giving the necessary parameters. All of the programs have help screens in-built, and although some of the commands are duplicated in DOS, some may find them easier to use because of the menu system. Some commands are also duplicated in Baker's Dozen, which is why I have put both programs on the one diskette.

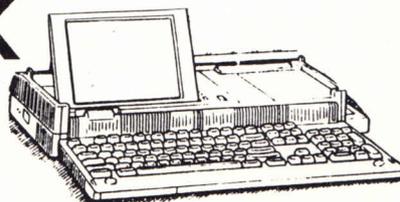
The next diskette to be looked at is called Disk Utilities. This is definitely not a diskette for the novice PC user. This diskette contains only 5 small programs, but three of them are very dangerous in the hands of beginners.

The first program on the diskette is DIAGS. This is a very advanced diagnostics program for the PC. It will show you

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various things about the way your machine is set, and allows you to play around with these various parts. If you don't know your way around the inside of a computer, please DO NOT play with this program.

The next three programs on the diskette are DiskUtil (Baker's Dozen), DiskTool, and DJ (Disk Jockey). DiskUtil has been mentioned above, so I won't go over it again. DiskTool is very similar to XDOS, but I believe that it is a lot more elegant and better programmed. Disk Jockey is a sector editor. It allows you to get deep into your diskettes, and modify each byte on the disk separately. Very powerful.

The last program on the diskette is FM (File Modify). This program is very similar to Disk Jockey, except that it works on files, instead of diskettes.

All of the programs on this diskette are for the ADVANCED PC user, not the beginner. Please be careful.

The last diskette for this month is EZ-Forms. This is another shareware program, and is used to design forms. Now some would say that forms are the

tools of the government, and are therefore to be avoided at all costs. But no matter how you look at it, forms exist in their millions today and they are not likely to go away.

EZ-Forms is designed from the ground up to be very easy to use. To that extent, it is not really necessary to read the instructions to operate the program. The only problem I had in operating the program was in the definitions used by the program. That is simply what the different names used to designate the type of form. After sorting all that out, it was very easy.

You can select the size of the form that you wish to create, from very small to a maximum 66 lines by 80 characters. You also have some forms already created on the diskette for you to use or modify. These include order forms, business card forms and many others.

EZ-Forms also supports a wide variety of printers. If you haven't used the program before, when you go to print a form, EZ-Forms will prompt you to supply the information necessary, and will then remember it for the next time

that you use the program.

The only complaint that I could come up with for this program is the fact that it will only use the normal characters that you can type from the keyboard. It will not use the extended characters. One assumes that this has something to do with keeping the program available to all printers and not just IBM compatible printers. This appears to be the only flaw in the program.

As always, all the diskettes that I review are available at the following address:

C.J. Collins  
1 Woods Street  
Newport 3015

Please make your cheques/money orders payable to C.J. Collins, and remember that the first diskette of any order costs \$10.00, any other diskette in the same order is only \$6.00.

Well, there you have it. Two commands for the month, and also three diskettes. I hope that this will keep all my readers happy until next month.



You probably all know that the PC is capable of holding data in a variety of types, but when it boils down to it these types fall neatly into two groups - either numbers or strings - both of which are generally considered to be quite distinct and incompatible with each other. Let's examine their options more closely.

### Numbers

The simplest form of numbers are integers (whole numbers) and real numbers (a number having a decimal fraction part). Both types of numbers are stored in the same way.

An integer can be either positive or negative or even zero. Basic2 on the Amstrad PCs handles integers much more easily and thus faster and if you have used other versions of Basic before, you may have already discovered that Basic2's handling of numbers as integers by default is a little different from what you would normally expect. By using integer arithmetic, Basic2, wherever possible, saves you the hassle of choosing between integers or real numbers.

A real number (with a decimal fraction part) can also be positive or negative or zero, in the latter case being expressed as 0.0, and any real number can be converted to an integer when required.

Real numbers can also be expressed as "scaled numbers" or "scientific format" numbers. These numbers look small - a decimal fractional number between one and a touch short of ten - but are followed by an 'E' and then a signed power of 10 which hides the enormous possibilities. For example, 4728000 can be expressed as 4.728E+6. Changing the plus sign to a minus translates the number to .000004728.

Numbers can also be expressed in

binary (to the base 2) or hexadecimal (to the base 16). In Basic2, binary constants are preceded by '&X' followed by the 'ones' and 'zeros' representing the number. The hexadecimal numbers are preceded by '&' followed by numbers in the range 0 to 9 and letter A to F ('A' meaning 10, 'F' meaning 15). So the number 13 can be expressed as &X1101 in binary (8 + 4 + 0 + 1) or simply &D in hexadecimal. The following small program will do a conversion for you.

```
REM Hex and Binary Converter
PRINT "DECIMAL", "HEX", "BINARY"
FOR n%=1 to 100
  PRINT n%, HEX$(n%), BIN$(n%)
NEXT
```

### Strings

The other group to look at is 'strings' (sometimes called 'text strings'). These can vary in length from between 0 to 4096 text characters. On your PC, the standard ASCII character codes are maintained (128 in all) plus a further 64 are made available under GEM. The complete set can be seen by entering this small program in the dialogue window.

```
REM Text Characters
FOR txt=0 to 255
  PRINT CHR$(txt);
NEXT
```

Try entering some of the characters on the screen. To start you off, press [Alt] and 227 on the numeric keypad - this will display the pi symbol in the dialogue box. You could also try PRINT CHR\$(7) to get your PC beeping. A string constant is distinguished from a number or variable name by placing double quotes at the start and end of the string. Of course, you can have numbers in a string, eg. "3456", but you cannot perform a calculation on it because it is to all intents and purposes still a string of text. In passing, a string with nothing in it, eg. "", is known as a null string.

### Variables

Information supplied to a program from, say, an answer to a prompt, is stored in a 'variable' which carries a name chosen for it by the programmer. Basic2 remembers this name, where it has stored it and the information it contains. The name chosen for a string variable should always be meaningful - back\_order\_qty is better than boq. Fortunately Basic2 allows a generous 40 characters (including the underline symbol). There are a number of rules to keep to when choosing a name, the most important is not to use a Basic2 keyword (PRINT, STOP, OPEN etc.). You can't use a space or start the name with a numeric.

Basic2 is similar to other versions of Basic in that a string variable name must end with a dollar sign (\$). However, it is a little different when it comes to numeric variables. Normally, integer variable names end with a percent sign (%) and a hash sign (#) identifies double precision floating point numbers. Basic2 will still allow you to use these characters and it may help you to identify the type of string you are looking at when studying a listing, but you don't have to use them. Quite simply, any variable without a dollar sign at the end of its name is a numeric variable.

### Arrays

Strings or numbers (numeric values) are often structured. That is, each is of

the same length and probably related to one another (though not necessarily). If you wanted to store sales figures for each month of a year, you could set up twelve different variables. A quicker way is to establish (dimension) an array which would hold all the sales information in month order, with each month's figure being indexed by the month number (01=Jan, 02=Feb and so on).

[ 'Records' are another type of data structure that Basic2 uses. They are similar in concept to templates and are not classified as variables, so they will be left alone for the moment.]

Arrays are simple to define. DIM wombat(6) will define a seven element array of real numbers (no dollar sign after wombat, remember?) from wombat(0) to wombat(6). Note that in this instance the first element is labelled with a zero. If you prefer to start at some other number, DIM wombat(10 TO 16) will define wombat(10) to wombat(16).

Assuming you don't want a floating point array, one of the following keywords can follow your dimensioning statement:

**INTEGER:** a range of minus 2 billion to plus 2 billion with 4 bytes per element.  
**WORD or UWORD:** a range of minus 32768 to plus 32767, or 0 to 65535 with 2 bytes per element.

```
REM Scrabble Cheat
STREAM #2
WINDOW OPEN:WINDOW FULL ON
CLD: INPUT "Enter your letters "; lett$
WHILE BUTTON=-1
  oldword$="9"+lett$+"9":newword$=""
  REPEAT
    char=1+RND(LEN(oldword$)-2)
    newword$=newword$ + oldword$(char)
    oldword$=oldword$(TO char-1) + oldword$(char+1 TO)
  UNTIL LEN(oldword$)=2
  PRINT newword$,
WEND
```

### Continuing Coordinates

You will recall that last month we drew a few circles in the Results1 window. When Basic2 is first loaded, this window can be considered to be 5000 x 5000 user coordinates in size. Any changes to the shorter side (vertical) are automatically scaled on the longer side (horizontal) so that a circle remains round and a square remains square. The USER SPACE command allows you to

**BYTE or UBYTE:** a range of minus 128 to plus 127, or 0 to 255 with 1 byte per element.

Thus, DIM wombat(6) UBYTE will consume just 7 bytes and can accommodate 7 integers. Three dimension arrays can be achieved with, for example, DIM wombat(1 TO 6, 1 TO 6, 1 TO 6). This will provide a total of 216 elements.

As if you need reminding again, string array names must end in a dollar sign (\$). So DIM dingo\$(6) will allow 7 strings of variable length to be placed in the array. For fixed length elements, DIM dingo\$(6) FIXED 8 immediately reserves enough space for the eight character strings filling them with zeroes.

### Manipulating Strings

What better way to illustrate string handling than a small, but useful (to some at least) program. If you can disguise your PC and have it sitting near to you when playing Scrabble, this program will provide different and random combinations of the letters you have in front of you until you press a mouse button.

The challenge is to make the program more sophisticated! Just remember that with only eight letters, there are over 40,000 combinations. We look forward to receiving your improvements.

tinker with these sizes, but beware - if you try to draw a circle after the command USER SPACE 600,300 you'll not get what you want. It is probably best to confine any re-specification to just one dimension and let Basic2 take care of the other side.

We have purposely kept away from text and pixel coordinates so that we both don't get confused, and will take up the subject a little later on.

By way of a demonstration (and some homework if you want to experiment further) there follows a short program which ties together some of the point raised in last month's article. Not only will it show you how depression of the left-hand button is sensed (read) but it also contains an algorithm which provides the user coordinates for giving the position of a mouse within a window. The results can then be used in the LINE and PLOT commands.

```
REM Mouse Art
WINDOW OPEN: CLS
prevx=0:prevy=0
REPEAT
IF BUTT=0 THEN GOSUB line
IF BUTT=1 THEN GOSUB noline
```

UNTIL something

```
LABEL line
GOSUB calc
LINE prevx;prevy,nextx;nexty
prevx=nextx:prevy=nexty
```

```
LABEL noline
GOSUB calc
PLOT nextx;nexty
prevx=nextx:prevy=nexty
RETURN
```

```
LABEL calc
nextx=(XMOUSE-XPLACE)*XPPIXEL
nexty=(YMOUSE-YPLACE)*YPPIXEL
RETURN
```

To use the program, merely put the

mouse (arrow) at the start point on the screen and shift/click. Then move the mouse to where you want the line to end and click the left button. Further mouse movement and left button clicking will draw further lines. If you have a steady hand, it is possible to draw curves by holding down the left button while slowly dragging the mouse. You can vary the styles and colours by referring to the relevant pull-down menus at the top of the screen. By the way, keep within the window as the program does not check to see if you go outside.

Souped-up versions of the above are welcome (with explanations of what you have done) and may be published in a future issue.

Finally, we promised a list of the more frequently used keywords for graphics control. Some have already been mentioned, the rest you will find in your manual.

**For pixel values:**

XACTUAL, YACTUAL [#stream] - dimensions of window  
 XWINDOW, YWINDOW [#stream] - dimensions of window  
 XDEVICE, YDEVICE [#stream] - dimensions of monitor  
 XMOUSE, YMOUSE - position of mouse  
 XPLACE, YPLACE [#stream] - bottom lh corner of window  
 XUSABLE, YUSABLE [#stream] - usable area of screen

**For user coordinates:**

XPOS, YPOS [#stream] - position of cursor  
 XPIXEL, YPIXEL [#stream] - dimensions of pixel  
 XSCROLL, YSCROLL [#stream] - position of window on virtual screen  
 XVIRTUAL, YVIRTUAL [#stream] - dimensions of virtual screen  
 YASPECT [#stream] - height/width distortion ratio (1=symmetrical)

**General Graphics commands:**

All the following have parameters in user coordinates (unless mentioned other wise) and can have [#stream] as the first.

CLS - clears the virtual screen

ELLIPSE x;y, radius, aspect ... (other parameters are the same as a circle) - draw an ellipse with a centre on x;y, yradius/xradius=aspect.

MOVE x;y - move cursor to x;y

PIE x;y, radius ... (other parameters are the same as a circle) - draw a pie sector.

PLOT x;y,x;y ... MARKER n SIZE n COLOUR n MODE n - plot a list of points.

SCREEN GRAPHICS [width[FIXED], height[FIXED]] [MINIMUM width,height] [MAXIMUM width,height] [UNIT width,height] [INFORMATION on,off] - define or redefine a virtual graphics screen, using pixel dimensions.

SHAPE x;y, ... x;y - draw a polygon between the points.

STREAM #stream - set the default stream number.

TEST x;y - return the colour at point x;y.

USER [#stream,] ORIGIN x;y - set graphic origin to x;y.

USER [#stream,] SPACE n,m - set scaling of user coordinates.

WINDOW [#stream] CLOSE - remove window from display

WINDOW [#stream] FULL ON/OFF - restores window to the maximum or minimum size when the screen was opened.

WINDOW [#stream] OPEN - restores a closed window.

WINDOW [#stream] PLACE x;y - positions the bottom lh corner.

WINDOW [#stream] SCROLL x;y - move a window across a virtual screen.

WINDOW [#stream] SIZE x;y - specify (in pixels) a new window size.

WINDOW [#stream] TITLE string - specify content of title bar.

# Studio 100

## An overview of Amstrad's integrated midi hi-fi, DJ and studio system

What, you may ask, are we doing looking at a piece of equipment that bears no relation to your computer? Well, now that Amstrad are officially handling their own equipment in Australia the home consumer is likely to see the Amstrad name become pretty well known for more than just low priced computers. To celebrate Amstrad's arrival, we have picked the Studio 100 system, due for release this month, and bring you an exclusive overview. Space, time and other constraints permitting we may bring you details from time to time of other non-computer Amstrad products - but don't bank on it!

If you are attracted by equipment with a mass of switches, buttons and other controls, you'd probably buy Studio 100 for its high-tech look alone. On the other hand, with over 80 controls on the main panel, the thought of coping with so many could seem daunting to some. It's not. The system has been cleverly designed and the manual carefully written to take the new user at his or her own pace through the various features of the three-in-one system.

### What you get

The whole system comes in two boxes. One contains two black gauze fronted speakers with connecting cables, and the other the Studio 100 system itself

which, apart from the mass of controls, features a turn table, twin cassette decks and an AM/FM radio. In addition to the main system, four microphones with stands, a pair of headphones, a user guide and a demonstration cassette are provided.

### As a Hi-Fi system

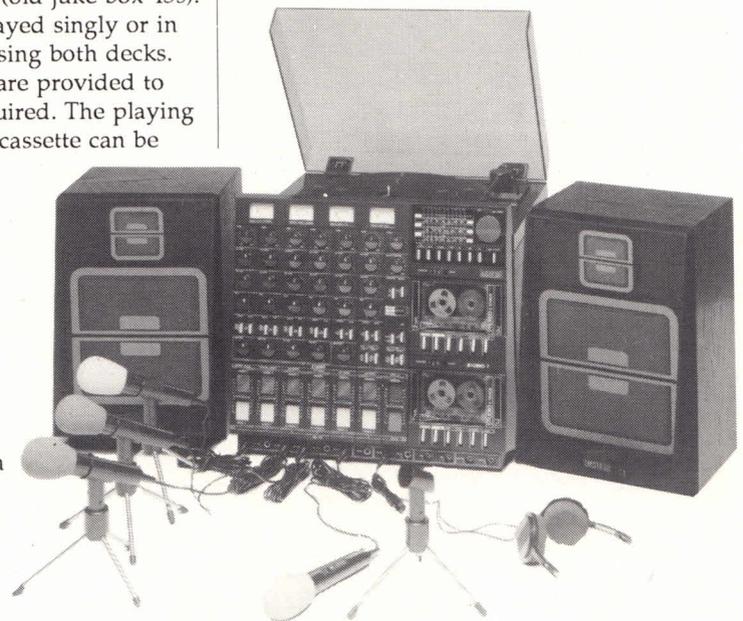
The turntable accommodates the standard 33 or 45 rpm speeds and starts to revolve once the arm is moved towards the record. A cue lever holds the stylus above the required track. There is a built-in hole adaptor in the centre of the turntable to allow you to play records which have had the centres removed (old juke box 45s).

Cassettes can be played singly or in 'continuous mode' using both decks. Two separate filters are provided to remove "hiss" if required. The playing speed of the bottom cassette can be adjusted by turning the PITCH knob (useful when in Studio mode for tuning pre-recorded instrument tracks), and both deck motors can be operated by remote control, eg. a foot pedal switch, though a PUNCH socket on the console.

The radio has a built-in ferrite rod aerial for AM reception, but an external aerial is suggested for FM stations. However, living near the city I had no trouble picking up stereo broadcasts without the aerial. The mono/stereo switch also has a beat eliminator to remove whistles when recording from AM broadcasts. The FM section has an

automatic frequency control (AFC) function which locks into the selected station. The radio, record and tape players are all considered to be internal sources to the Studio 100 system. External sources, such as a compact disc player are connected through two auxiliary input sockets.

Left and right bass, treble and mid-range output can be adjusted through the six slider controls at the bottom of the console. Overall output can be monitored on the left and right meters at the top left of the console and heard either through the speakers or the standard headphones supplied. I preferred to use my own higher



quality headphones with integral volume control.

A useful feature if you want to record your own voice over a commercial recording is a CANCEL switch. This relies upon the original recording having the lead singer or instrument

playing centre-stage. Pressing this switch cancels the common in-phase component of the stereo signal and has the effect of suppressing or pushing to the back the 'centre' sound.

#### As a DJ console

Although you already have a turntable supplied with the system, you may wish to add others. Any additional turntables with magnetic cartridges must be fitted with a pre-amplifier. This is to compensate for the non-linear frequency response of magnetic cartridges. Up to two external sources can be attached to the system and are controlled through the first four channels on the console, however only one external source can be used if one of the internal sources has also been selected.

No DJ system would be complete without a microphone and in this mode, Studio 100 can take up to two microphones, either those supplied with the system or your own. An ECHO knob can be used to add echo to input from channels 5 and 6, in other words the microphone.

TRIM knobs adjust the input sensitivity range for each channel and the EQ LOW and EQ HIGH set the base and treble. The trick is to listen to each sound separately, adjust where necessary and finally play a balanced mix. The Master fade slider is the means to fading in internal and external sources and fading out the microphones, and vice versa, although you can if you wish, fade the sources individually. The whole lot can be monitored through the headphones before you 'go public', or recorded onto cassette, or even sent through a public address system.

#### As a Studio Mixer

In this mode you again have the choice of internal and external sources. Up to six external sources can be used and are connected through the MIC/LINE sockets numbered 1 to 6. The six fader switches come into play, as do the PAN knobs for each channel. These knobs 'position' the sound across the stereo stage. In other words, a channel with the PAN knob turned fully left will cause the sound from that channel to be heard from the left speaker or left

side of the stage.

Using an internal source, eg. tape deck, reduces the number of channels available for external sources by two. The operation of each source is the same as in DJ mode with the same adjustments being available on each channel. Once the individual sounds have been selected, final overall adjustments can be made through the amplifier, namely volume, balance, bass, mid-range and treble. Again, the output can be sent through the headphones, speakers, public address system or recorded on cassette.

Where the Studio Mixer comes into its own is the ability to record four tracks at the same time. Let me explain.

A standard cassette will have four tracks but side one is recorded on the first two tracks, and side two recorded on the other two in the opposite direction. With the Studio 100 system, all four tracks can be used at the same time using the bottom deck. This obviously means that you are unable to play (successfully at least) a four track recording in a two track player, but that is not what the feature is built for. You can also control each of the four tracks independently. Think of the possibilities! You could take what you have recorded on the first three tracks, combine (mix) them, add another sound source and record the output onto track 4. You could go further and take that composite recording (on track 4), add to new recordings on tracks 3 and 2, and output to track one. This method is called 'compound overdubbing'.

As already explained, there are four tracks available for recording. Any more than four external sources are recorded by 'track sharing'. Thus, sources through channel five and six are diverted and recorded on any of the first four tracks by making a selection on the track share switch. All this mixing and switching gives you the capability of turning a four track recording into a standard two track stereo tape.

#### Demonstration cassette

This is a useful addition to the system and allows you to start playing with the system almost straight away. It

contains a few songs with the vocals excluded - I particularly liked 'Lady in Red', and there's even one for Beatles fans. Lyrics are provided on a separate sheet. On the other side of the cassette are a number of pre-recorded rhythms from heavy rock to swing - all of which last long enough to put together a mix of acceptable length.

#### Manual

This has been carefully thought out (Amstrad have obviously learned from their computer manuals) and adopts a step-through system. You choose what you want to do by answering a question at the beginning of the book and you are directed to a certain page. If you want to do more, the manual points you in the right direction each time. Naturally, it can only tell you which buttons to press or knobs to turn - it cannot possibly tell you how to get a professional result - in the end that is up to the user and his or her own ears.

#### Summary

I must admit, when the Studio 100 system was in operation at home, not much television was watched and I was amazed at the unbridled talent shown by the younger children. As a unit for family entertainment it was certainly different and great fun. For the young aspiring DJ (even older ones like me), it must surely provide an insight into the mechanics of musical entertainment. As a studio mixer for a budding or amateur sound engineer, it combines all that is necessary to achieve a very acceptable and professional sounding result. After using the Studio 100 over a three week period, I shan't be able to go back to the old microphone and tape recorder again - it'll never sound the same.

We all know that Amstrad have been successful in opening the computer world to millions at a sensible price. There is no question that this piece of equipment will do similar things in the audio world.

*Studio 100 will be released by Amstrad Pty Ltd. in June 1988 and will be available through your Amstrad dealer at around \$999.00.*

# Introducing Arnold to animation

Gary Koh explains the concepts behind animation

This month we are going to look into animation. There are basically two types of animation used on computers, sprite animation and vector graphics. Sprite animation is the easiest type to implement and basically involves moving a small object around the screen. Vector graphics are very much harder to produce. They involve the use of complex mathematical functions.

Most people are used to animation in Basic using the print command. This is very similar to sprites except they are slow and jerky.

Both types of animation have their advantages and disadvantages. Both types can be produced using Basic although to produce true representations of them you would need to delve into machine code. Sprites are only useful if you want to animate small objects or figures. Vector graphics are used for large scale animation, for example an object which would almost fill an entire screen.

We will be discussing sprite graphics first of all. Animation is the art of fooling the eyes into thinking an object is moving on the screen. What all types of animation rely upon is redrawing of the figure or object several times a second. Basic can be used to produce animation however it is not as good.

Listing 1 is an example of animation produced in Basic. As you can see, animation of this sort is rather flickery. You can control the helicopter by using the cursor keys. Up and down keys simply move the helicopter up and down. Pressing the left and right cursor keys increases and decreases its speed. Good exercise in inertia and velocity isn't it?

## Listing 1

```
100 ' Listing
110 ' Helicopter Animation Demo
120 ' by Gary Koh
130 ' The Amstrad User June(88)
140 '
150 CALL &BBFF:INK 0,2:INK 1,26:MODE 1:BORDER 2:PAPER 0:SY
MBOL AFTER 248:FOR a=0 TO 3:heli$(a)=CHR$(248+a*2)+CHR$(24
8+a*2+1):NEXT:height=200:vloc=5:a=640
160 SYMBOL 248,255,2,63,76,95,63,9,127:SYMBOL 249,248,1,25
4,100,192,128,0,192
```

```
170 SYMBOL 250,63,2,63,76,95,63,9,127:SYMBOL 251,224,0,255
,224,192,128,0,192
180 SYMBOL 252,15,2,63,77,95,63,9,127:SYMBOL 253,128,4,254
,97,192,128,0,192
190 SYMBOL 254,2,2,63,78,95,63,9,127:SYMBOL 255,0,2,254,98
,192,128,0,192
200 PLOT 800,800,1:TAG:WHILE a>-42 AND a<642:count=count+1
:bframe=count MOD 4:a=a-vloc:MOVE a+vloc,pheight:CALL &BD1
9:PRINT " ";:MOVE a,height:CALL &BD19:PRINT heli$(bframe);
:pheight=height
210 IF INKEY(0)=0 AND height<394 THEN height=height+4
220 IF INKEY(2)=0 AND height>20 THEN height=height-4
230 IF INKEY(8)=0 AND vloc<20 THEN vloc=vloc+1
240 IF INKEY(1)=0 AND vloc>-20 THEN vloc=vloc-1
250 WEND:IF a<0 THEN a=640 ELSE a=-40
260 GOTO 200
```

Listing 1 fools you into thinking the helicopter is moving by drawing it many times a second. To make it even more realistic there are 4 different frames of the helicopter.

To produce true sprites you really need to delve into machine code. But before we start printing sprites onto the screen we need to create them. This is where listing 2 comes in. This program is a sprite designer.

Unlike Basic type sprites, the sprites you create with this sprite designer can be multi-coloured and are less messier to use. A far cry from flickering single-colour Basic character animation.

You can create up to 99 sprites with this program. It is rather crude and a bit user-unfriendly but I have found that most people like to alter a program to their own needs. Besides, making it foolproof and user-friendly would have doubled the length of an already long program.

Upon running the program you will be asked in which mode you want to design the sprites. The program will only work in modes 0 and 1. Anything else you type in should be rejected. Well, that's the theory.

After this the screen will clear and you should be presented with 3 boxes and several bits of text. The box below the words "Actual sprite" shows the actual size of the sprite you are working on. The box below that contains any prompts or questions the sprite editor might throw at you. The last remaining box contains a blown up picture of the sprite which is where the actual editing occurs. Anything plotted on this is also plotted on the smaller box.

The cursor keys will move the cursor around. COPY will

plot the current pen on the sprite. T will toggle the trail option on or off. When trail is on the cursor will leave a trail of points behind it whenever it moves.

The < and > keys move the pen pointer selector left and right respectively. The ink colour for each pen is stored in the data statement in line 230. If you're not satisfied with the present ink colours just change their value in the data statement.

M will memorize the current sprite into memory. R will recall a sprite. You will be prompted for which sprite to recall. Remember that you have to press M and then R if you want to edit another sprite. Otherwise, the sprite that you are currently editing will be erased.

S will save a set of sprites and L will load a set of sprites. In both cases you will be prompted for how many sprites you want to save or load and the filename.

The sprite editor will allow you to design sprites of 16 by 16 mode 1 pixels. From now on when we are dealing with sprites we will be using "byte" co-ordinates. Byte co-ordinates start in the top left hand corner. The x co-ordinate ranges from 1 to 80 instead of the usual 1 to 640 with the normal graphics commands. The y co-ordinate is numbered from 1 to 200.

The sprites that are designed on the sprite editor when measured in byte co-ordinates are 4 by 16. It helps to remember that 2 mode 0 pixels, 4 mode 1 pixels and 8 mode 2 pixels are all equivalent to 1 y byte-co-ordinate.

I call it byte co-ordinates because that is how many bytes are needed to encode one line of the screen. If you multiply 80 by 200 you get 16,000 which is how many bytes constitutes a screen. This means that each of the sprites that you create take up 64 bytes of memory (4\*16).

Next month we will be carrying on with the sprite business. All the technicalities will be discussed and several sprite routines will be given.

## Listing 2

```

100 ' listing 2
110 ' Sprite editor
120 ' by Gary Koh
130 ' The Amstrad User June (88)
150 premem=38000:newmem=premem-6336:SYMBOL AFTER 256:MEMOR
Y newmem:SYMBOL AFTER 250:SYMBOL 251,255,129,129,129,129,1
29,129,255:INPUT"Which mode do you want";md
190 IF md<0 OR md>1 THEN 180
200 IF md=0 THEN md=2:MODE 0 ELSE md=1:MODE 1
230 DATA 0,26,6,2,18,3,8,9,12,13,15,16,7,19,21,25
240 KEY 138,"mode 2:pen 1"+CHR$(13)
245 spn=1:tt=0:pp=0:px=1:py=1:x=1:y=1:ton$=CHR$(22)+CHR$(1
):toff$=CHR$(22)+CHR$(0):DEF FNmd(mde)=ABS((md=1)*2)+ABS((
md=2)*1):FOR a=0 TO 15:READ b:INK a,b:NEXT
250 MOVE 308,374:DRAWR 276,0,1:DRAWR 0,-268:DRAWR -276,0:D
RAWR 0,268:MOVE 20,262:DRAWR 276,0:DRAWR 0,-172:DRAWR -276
,0:DRAWR 0,172:MOVE 84,326:DRAWR 54,0:DRAWR 0,-46:DRAWR -5
4,0:DRAWR 0,46
280 WINDOW #1,2*FNmd(md)+(md=1)*1,9*FNmd(md),10,19:WINDOW
#2,11*FNmd(md)+(md=1)*1,18*FNmd(md),3,19:WINDOW #3,11*FNmd
(md)+(md=1)*1,18*FNmd(md),3,18:PEN 1:LOCATE 2+(2-md),2:PRI

```

```

NT"Actual":LOCATE 2+(2-md),3:PRINT"Sprite"
300 LOCATE 1,21:PRINT"Pen:";FOR a=0 TO 3-((md=2)*12):PEN
a:PRINT CHR$(233);:NEXT:PEN 1:LOCATE 1,23:PRINT"Trail:";P
EN 2:PRINT"off":PEN 1:LOCATE 1,25:PRINT"Sprite number:";P
EN 2:PRINT spn;LOCATE 1,1:GOSUB 470:LOCATE 5,21:PEN 2:PRI
NT ton$;CHR$(251);toff$
330 a$=UPPER$(INKEY$):IF a$=""THEN 330
340 IF a$=CHR$(243) THEN IF x<8*FNmd(md) THEN x=x+1:GOSUB
470
350 IF a$=CHR$(242) THEN IF x>1 THEN x=x-1:GOSUB 470
360 IF a$=CHR$(240) THEN IF y>1 THEN y=y-1:GOSUB 470
370 IF a$=CHR$(241) THEN IF y<16 THEN y=y+1:GOSUB 470
380 IF a$=CHR$(224) THEN LOCATE #2,x,y:PRINT ton$;PEN #2,
pp:PRINT #2,CHR$(233):PRINT toff$;PLOT 94+x*(md*2),320-y*
2,pp
390 IF a$="<" OR a$="," THEN IF pp>0 THEN LOCATE 5+pp,21:PE
N 0:PRINT USING"&";ton$;CHR$(251);toff$;pp=pp-1:LOCATE 5+
pp,21:PEN 2:PRINT USING"&";ton$;CHR$(251);toff$;
400 IF a$=">" OR a$="." THEN IF pp<3-((md=2)*12) THEN LOCAT
E 5+pp,21:PEN 0:PRINT USING"&";ton$;CHR$(251);toff$;pp=pp
+1:LOCATE 5+pp,21:PEN 2:PRINT USING"&";ton$;CHR$(251);toff
$;
410 IF a$="T" THEN LOCATE 7,23:PEN 2:IF tt=0 THEN tt=1:PRIN
T"on "; ELSE PRINT"off";:tt=0
420 IF a$="M" THEN GOSUB 490
430 IF a$="R" THEN GOSUB 530
440 IF a$="S" THEN INPUT #1,"How many sprites to save:";pmt
:pmt=pmt MOD 99:INPUT #1,"Filename:";pmt$:dummy=FRE("):SA
VE pmt$,b,premem-(pmt*64),pmt*64:PRINT #1,"Finished..."
450 IF a$="L" THEN INPUT #1,"How many sprites to load:";pmt
:pmt=pmt MOD 99:INPUT #1,"Filename:";pmt$:dummy=FRE("):LO
AD pmt$,premem-(pmt*64):PRINT #1,"Finished..."
460 GOTO 330
470 LOCATE #2,px,py:IF tt=0 THEN PEN #2,0:PRINT #2,USING"&
";ton$;CHR$(251);toff$; ELSE PEN #2,pp:PRINT #2,USING"&";t
off$;CHR$(233);:PLOT 94+px*(md*2),320-py*2,pp
480 px=x:py=y:LOCATE #2,px,py:PEN #2,2:PRINT #2,USING"&";t
on$;CHR$(251);:RETURN
490 cnt=0:PRINT #1,"Memorizing sprite"
500 FOR a=&C19C TO &FFFE STEP &800:FOR b=0 TO 3:POKE preme
m-(spn*64)+cnt,PEEK(a+b):cnt=cnt+1:NEXT:NEXT
510 FOR a=&C1EC TO &FFFE STEP &800:FOR b=0 TO 3:POKE preme
m-(spn*64)+cnt,PEEK(a+b):cnt=cnt+1:NEXT:NEXT:PRINT #1,"Fin
ished...":RETURN
530 cnt=0:INPUT #1,"Sprite to be recalled:";spn:spn=spn MO
D 99:cnt=0:LOCATE 15,25:PEN 2:PRINT spn;LOCATE 1,1:PRINT
#1,"Recalling sprite"
540 FOR a=&C19C TO &FFFE STEP &800:FOR b=0 TO 3:POKE a+b,P
EEK(premem-(spn*64)+cnt):cnt=cnt+1:NEXT:NEXT
550 FOR a=&C1EC TO &FFFE STEP &800:FOR b=0 TO 3:POKE a+b,P
EEK(premem-(spn*64)+cnt):cnt=cnt+1:NEXT:NEXT
560 CLS #3:FOR b=318 TO 288 STEP -2:FOR a=96 TO 126 STEP m
d*2:PEN #3,TEST(a,b):PRINT #3,CHR$(233);:NEXT:NEXT:PRINT #
1,"Finished...":RETURN

```



# Life after your BASIC Manual

Paul Gerard starts a new series explaining how to write BASIC programs using a structured approach

This series is NOT a description of the function of the various commands used in Locomotive BASIC. The assumption is that you have already been through your manual, and written a few simple programs for yourself. It does not assume you are an "advanced programmer", but it is not for the very new beginner either. Nor is it just a "hints" column, although you will probably pick up plenty of exciting new ideas. What it IS about is really an approach that takes advantage of those aspects of "professional" programming that make hobby programming easier, more rewarding, and better fun. We will be building up three "example" programs, an adventure game framework, a simple database, and a "conversation" program. In fact most of the routines in the three programs will be identical or very similar indeed - the difference will lie mainly in the DATA statements.

There are two essential features that a well written program must possess. The first is obviously that it should run efficiently and do exactly what you want, within the limitations of the machine and the language used. What the beginner does not always realise is that it is just as important that the code should be easily readable by a stranger (and that includes you in a week or two) who wants to change or improve something, or even locate a subtle bug that was not initially apparent! "Structured code" has the further advantage that one can freely add pieces of programming from other programs, isolate sections of the program that are not quite functioning properly and test them in other environments, and so on. Professional programmers ALL write their programs this way - most amateur or self-taught programmers eventually gravitate towards something like it.

There is another aspect to this series. Locomotive BASIC, while in many ways an excellent application of the language, has a number of features that require special treatment. The "INPUT" command, for instance, is virtually unusable, at least for our purposes here, and the next article in this series looks at substitutes. Large programs written in Locomotive BASIC and using large string arrays (and all our example

programs will fall into this category) habitually stall into a series of interminable "garbage collections" - there is however a relatively simple way out of this, which we will cover. In fact, while the whole series of articles forms a unified whole I have tried to make sure that each one includes something that you can use in your own programs right away.

## Line Numbers

Quite a few programming languages, including some dialects of BASIC, get away from the whole idea of line numbers. As we are stuck with them in Locomotive BASIC, we may as well use them to our advantage. In particular, certain blocks of line numbers can be allocated to certain purposes, making it easier to find and list particular parts of our program. The following is a sensible allocation, which you will find worth thinking about at least:

Lines 1-9 (increment 1) Heading or name of program, other opening remarks.

Lines 10-90 (increment 10) Main program - principally a list of GOSUBs - some of these within a loop.

Lines 100-900 (increment 10 - subroutines at 100 line intervals) Sub-GOSUBs called frequently by the main GOSUBs - (see below).

Lines 1000-9000 (increment 10 - subroutines at 1000 line intervals) Main GOSUBs - ie. the essential building blocks of the program. These will call other GOSUBs.

Lines 10000-40000 (increment 10 - subroutines at 1000 or 10000 line intervals) Sub-GOSUBs called once, or infrequently.

Lines 40000-(65535) (increment 10) - DATA lines (although these may sometimes be more usefully sprinkled around the program, especially when most arrays etc. are fairly short.

Below is a skeleton program illustrating this pattern, (obviously, there is little point in typing this in at this stage).

As far as possible we will be keeping to the pattern set here for the tutorial programs - for instance our INPUT routine will slot in at line 200, and so on.

Of course once your program is well debugged and ready to be sent to The Amstrad User you may like to do a simple

RENUM. This will mean that someone typing in your little effort will be able to use AUTO, and check for missing lines etc. easily. Keep a version with the old line numbering, however, as you will find that it is much easier to debug or enhance!

```

1  \  Skeletor
2  \  a skeleton program illustrating
3  \  helpful line numbering
4  \
5  \ N.B.  This program does not actually
6  \      do anything - but illustrates
7  \      a pattern that will be found
8  \      useful when writing programs
9  \      that do.
10 \ Main Program
20 GOSUB 2000          \ Initialisation + Introduc-
tion
25 \ Main loop
30 WHILE NOT finished
40   GOSUB 2000        \ Screen fo new operation
45   \ sub loop
50   WHILE NOT new.process
60     GOSUB 3000      \ Process user input (parser)
70     GOSUB 4000      \ Switch to actual operations
80   WEND
90 WEND
99 CALL 0 \ More drastic form of END
100 \ Heading printer
110 \
190 RETURN
200 \ Get user input
210 \
290 RETURN
300 \ User Messages
310 \
390 RETURN
400 \ Error messages
410 \
490 RETURN
500 \ Yes/No
510 \
520 \ GOSUB 200
590 RETURN
600 \ Screen mode/windows change
610 \
690 RETURN
700 \ Pause
710 \
790 RETURN
800 \ Press any key
810 \
890 RETURN
1000 Initialise
1010 GOSUB 00000        \ Set inks, ents and envs
1020 GOSUB 11000        \ Display opening screen
1030 GOSUB 12000        \ Play opening tune
1040 GOSUB 13000        \ Initialise variables, dim
arrays etc.
1050 GOSUB 14000        \ Symbol settings
1060 screenmode=1:GOSUB 600 \ Set mode & windows for
start
1090 RETURN
2000 Menu routine
2010 \ (print menu)
2020 GOSUB 200          \ Get user input
2030 (evaluate this)

```

```

2900 RETURN
3000 \ Process user input
3010 \
3900 RETURN
4000 \ Switch to main processes between 5000 and 9000
4010 \
4900 RETURN
10000 \ Set inks, ents and envs
10010 \
11000 RETURN
11010 \
11900 RETURN
12000 \ Opening tune
12010 \
12900 RETURN
13000 \ Initialisation of variables
13010 \
13900 RETURN
14000 \ Symbol settings
14010 \
14900 RETURN
20000 \ various subroutine here connected with 2000
30000 \ various subroutine here connected with 3000
40000 \ DATA lines from here
40010 \ N.B. Each block of DATA must be identified!!

```

### Rems

The most important "word" in BASIC is of course the REM statement. In Locomotive BASIC we can just use an apostrophe ('). There need not be that many of them, in fact the skeleton program above probably contains the majority of REMs that would be required in the full program. They should be short, but NOT cryptic, and should serve as a clear, explicit signpost to exactly what is happening. In a program of any length at all it is especially important that all subroutines be clearly labelled, and that this label should also accompany every GOSUB calling the subroutine.

Many amateur programmers tend to shy clear of REMS - as they don't DO anything (the reasoning seems to run), the program will be shorter without them, and yet DO exactly the same things. Thus we can save typing time and memory by leaving them out. In fact the time it takes to actually type a program in is a tiny fraction of the total time taken - most of which, whether you are typing in your own programming or someone else's, is DEBUGGING. Well chosen, clear and helpful REM statements save far more time at the debugging stage than they cause at the typing stage. As for memory - this argument did make some sense when the average micro had 16k or so of available RAM. In a modern micro with 64k or more, there is generally plenty of room for REMS, and in fact if these are kept few and short they take up a small proportion of the total space occupied by the program anyway.

### Gosub

Some languages have all kinds of devices designed to assist in "structuring" our programs. PASCAL (heaven deliver us) is a prime example. BASIC is fortunate in having only one (discounting FN for the moment), so that a well structured BASIC program MUST be built around subroutines called by GOSUB. There are three kinds of subroutine.

The first actually does something itself. This should ideally

be something that is in itself very simple indeed. In fact from the point of view of structuring an operational subroutine should ideally have only one command. In practice this would result in so many subroutines that not only would the simplest of programs get too long to fit into our memory but also the structure itself would become obscured; but an operational subroutine that stretches over more than ten lines or so probably needs breaking down. A subroutine to print a heading, for instance, might be simply:

```
100 ` Heading
110 LOCATE 12,1:PRINT "SKELATOR"
190 RETURN
```

Assuming that this is a frequently called routine - ie. we often want to print this heading, and in a number of different contexts - then it is likely that a number of routines will have a line reading "GOSUB 100 ` heading". The routine will of course have been thoroughly debugged (in this case we will have confirmed that the heading is exactly where we want it, and is spelled correctly, for instance), so that whenever we want the heading we will be able to simply GOSUB 100 without worrying about spelling the name wrong, or putting it in the wrong place. This is one of the fundamental advantages of structured programming - we do not need to ever find the same bug twice. Most of our routines will probably be a good deal more elaborate than this one, but the general idea is the same.

But what if we want to be able to print a number of different headings? One way would be to have a separate routine for each one - but obviously the best idea would be to have one routine for all headings. This introduces the idea of a subroutine with parameters. To take a very simple case, we might change our subroutine to :

```
100 ` Heading
110 LOCATE 12,1:PRINT heading$
190 RETURN
```

Each call of the subroutine will now need a definition of "heading\$" before the GOSUB - for instance:

```
11010 heading$="SKELATOR":GOSUB 100 `heading
```

There are two things wrong with this as it stands. One is that Locomotive BASIC does not take kindly to having the value of a string variable changed all the time (we will have a look at how to get round this in a later article). The other is that if we have (for example) a heading\$ of a different length to "SKELATOR" (say "MENU" or "WHAT TO DO IF ALL ELSE FAILS") then our careful location statement will not result in a nicely centred heading! Assuming the heading is to go on a mode 1 screen, we can get around this by changing our routine to something like this:

```
100 ` Heading
110 LOCATE (40-LEN(heading$))\2, 1:PRINT heading$
190 RETURN
```

This will work provided that we don't try to head a mode 1 screen with a heading of more than 40 characters. If however

we have screens in Modes 0 and 2 we can cover this by a further elaboration:

```
100 `Heading
110 LOCATE (modewidth-LEN(heading$ ))\2,1 ` centre
heading
120 PRINT heading$
190 RETURN
```

Which will be called:

```
11010 modewidth=40:heading$="SKELATOR":GOSUB 100 `
heading
```

Not all operational routines will be this short and simple, but many of them will. In any case each routine basically does one thing, and can be tested and debugged separately. Many subroutines (the above is an obvious example) will be useful in other programs.

The other kind of subroutine calls other (operational) subroutines. This in turn will probably be called by another super-subroutine, in fact the structure of the program can be drawn as a tree. This may sound unnecessarily fiddly, frankly for "short and nasty" little programs you write for yourself to do one quick job it probably is - but for anything at all ambitious it is not - unless the number of subroutines gets plain silly it makes things easier to break down the main task the program has to do into sub-tasks, and then break these down and so on, until by this process of divide and conquer the whole thing becomes a breeze..

I have suggested putting frequently called routines near the beginning of the program. The rationale behind this is that subroutines near the head of a program run a little faster than subroutines near the end because they are found more speedily. This is certainly true of some BASICS on some machines - whether it makes much difference with Locomotive BASIC on the Amstrad I admit I do not know. Putting the 'once only' routines 'up near the back' will at least have the advantage of giving the program a nice professional look.

Next time we will have a look at setting out our programs, the dreaded GOTO command, and our new INPUT routine.

### *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**

# Patience - Part 2

The card game converted for CPC computers

by Don O'Connor

This month we present the final part of Don O'Connor's CPC version of the classic game, Patience. As stated last month the complete version of the game will appear on this month's tape.

```

2690 PAPER 0:CLG
2700 FOR i=32 TO 416 STEP 64
2710 PLOT i,391,1
2720 DRAWR 50,0
2730 DRAWR 0,-29
2740 DRAWR -50,0
2750 DRAWR 0,29
2760 NEXT
2770 FOR i=1 TO 6
2780 FOR j=1 TO i
2790 PLOT i*64+j*10+22,395
2800 NEXT
2810 NEXT
2820 FOR i=1 TO 7
2830 col=ASC(RIGHT$(stack$(i,1),1))
2840 IF col=226 OR col=229 THEN xx=3 ELSE xx=2
2850 PLOT i*64-22,383,xx
2860 PRINT stack$(i,1);
2870 NEXT
2880 IF inst=0 THEN 2930
2890 WINDOW #7,1,30,4,25
2900 PEN #7,3:PAPER #7,0
2910 PRINT#7,"The card piles are shown here.The face up cards are printed in the boxes. The dots above the boxes indicate the number of cards face down in that pile. Think of these boxes as being numbered from 1 to 7."
2920 GOSUB 4020
2930 REM
2940 FOR i=1 TO 4
2950 PLOT 542,i*32+237,1
2960 DRAWR 50,0
2970 DRAWR 0,-29
2980 DRAWR -50,0
2990 DRAWR 0,29
3000 NEXT
3010 REM
3020 PLOT 536,380,3:PRINT"aces";
3030 IF inst=0 THEN 3070
3040 CLS#7:WINDOW #7,1,33,8,25

```

```

3050 PRINT#7,"These are the foundation piles. Place the aces in these boxes and build on them."
3060 GOSUB 4020
3070 REM
3080 PLOT 542,197,1
3090 DRAWR 50,0
3100 DRAWR 0,-29
3110 DRAWR -50,0
3120 DRAWR 0,29
3130 REM GRAPHICS PEN 3
3140 PLOT 538,215,3:PRINT"pack";
3150 IF inst=0 THEN 3190
3160 CLS#7:WINDOW #7,1,31,13,25
3170 PRINT#7,"The face up card from the pack is shown here ."
3180 GOSUB 4020
3190 MOVE 508,114
3200 DRAWR 38,0
3210 DRAWR 0,-20
3220 DRAWR -38,0
3230 DRAWR 0,20
3240 MOVE 588,114
3250 DRAWR 38,0
3260 DRAWR 0,-20
3270 DRAWR -38,0
3280 DRAWR 0,20
3290 MOVE 536,150:PRINT"card";
3300 MOVE 552,136:PRINT"no";
3310 REM GRAPHICS PEN 2
3320 PLOT 552,110,2:PRINT"of";
3330 IF inst=0 THEN 3370
3340 CLS#7:WINDOW #7,1,31,17,25
3350 PRINT#7,"The second box shows the total number of cards left in the pack. The first box shows the card number which is facing."
3360 GOSUB 4020
3370 REM
3380 PLOT 536,40,3
3390 DRAWR 24,0
3400 DRAWR 0,-20
3410 DRAWR -24,0
3420 DRAWR 0,20
3430 PLOT 574,40

```

```

3440 DRAWR 24,0
3450 DRAWR 0,-20
3460 DRAWR -24,0
3470 DRAWR 0,20
3480 MOVE 538,74:PRINT"your";
3490 MOVE 538,56:PRINT"move";
3500 IF inst=0 THEN 3620
3510 CLS#7
3520 WINDOW #7,1,31,16,25
3530 PRINT#7,"Possible moves:  box 1  box 2":PRINT#7
3540 PRINT#7,"  pile to pile:  1-7  1-7"
3550 PRINT#7,"  pile to aces:  1-7  A"
3560 PRINT#7,"  pack to pile:  P    1-7"
3570 PRINT#7,"  pack to aces:  P    A"
3580 PRINT#7,"turn over cards: P    P"
3590 PRINT#7," quit the game:  Q"
3600 GOSUB 4020
3610 CLS#7
3620 REM
3630 FOR i=564 TO 570
3640 PLOT i,30,2
3650 NEXT
3660 RETURN
3670 i$="A23456789#JQK"
3680 SYMBOL AFTER 163
3690 SYMBOL 163,&CE,&DF,&DB,&DB,&DB,&DF,&CE,0
3700 FOR i=1 TO 4
3710 FOR j=1 TO 13
3720 card$((i-1)*13+j)=MID$(i$,j,1)+CHR$(i+225)
3730 NEXT
3740 NEXT
3750 FOR i=1 TO 52
3760 j=INT(RND(TIME)*52)+1
3770 IF taken(j)=1 THEN 3760
3780 taken(j)=1
3790 pack$(i)=card$(j)
3800 NEXT
3810 x=1
3820 FOR i=1 TO 7
3830 FOR j=1 TO 7
3840 IF i=j THEN stack$(j,1)=pack$(x):x=x+1
3850 IF i<j THEN hidden$(j,i)=pack$(x):x=x+1
3860 NEXT
3870 NEXT
3880 pack$(0)=" "
3890 FOR i=29 TO 52
3900 pack$(i-28)=pack$(i)
3910 NEXT
3920 pack=24
3930 pface=0
3940 FOR i=1 TO 7
3950 stack(i)=1
3960 hidden(i)=i-1
3970 NEXT
3980 FOR i=1 TO 4
3990 ace(i)=0
4000 NEXT
4010 RETURN
4020 PRINT#7
4030 PRINT#7,"Press any key to continue..."
4040 WHILE INKEY$="":WEND
4050 RETURN

```

## Back Copy Bonanza

We are running out of space holding back copies of the English magazine "The Amstrad Computer User". For the next three months (June, July and August 1988 only) we are reducing the price of all our available ACU magazines published from 1985 to the end of 1987 to just \$2.00 each including postage.

The magazines we have are as follows:

1985: January/February (one mag), March, April, June, November and December.

1986: January, February, March, April, May, June, August, September, October, November and December

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# Printers on Parade

Richard Monteiro recommends four of the best to hang onto your CPC

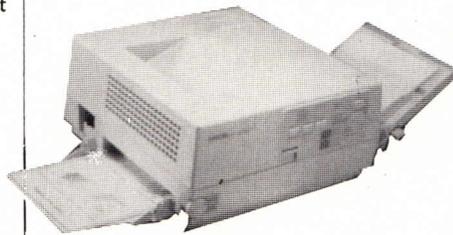
## Printer persona

There are five main types of printer. The commonest - and generally the cheapest - being the dot matrix printer. Images are produced via the printhead which fires a combination of pins at a ribbon. If looked at closely the image can be seen to be made up of many tiny dots: thus the name dot matrix. Dot matrix printers fall into two categories: near-letter quality (NLQ) - 9-pin printhead, and letter quality (LQ) - 24-pin printhead. On the plus side dot matrix printers are very versatile, inexpensive and reasonably fast. They can be noisy and the print quality, although passable does not meet the standards required for professional documents.

Two types of portable printer exist. Thermal and thermal/carbon transfer. These printers are probably the cheapest of the bunch, but tend to be slow, require special paper and output can be smudgy. Thermal printers use an array of heated elements (instead of pins) to produce an image on heat sensitive paper. The thermal/carbon transfer method uses a similar technique, but also employs a carbon ribbon to create an output that doesn't fade with time.

Ink jet printers don't require any form

of ribbon: they use a set of nozzles that squirt quick-dry ink directly onto paper.



The GQ-3500 laser printer from Epson - \$3990 and it's yours

The results are better than 9-pin dot matrix printers, but not - unless you pay through the nose - better than the 24-pin variety. Also a lot faster and a lot quieter.

Daisywheel printers really pump out

the decibels. They have a totally different method for placing print on the page - and it is this method that piles the dollars on the price. A swivelling daisywheel containing a character set is positioned vertically in the printer. Each time a character is printed the wheel turns until it reaches the required character, a hammer belts the character into the ribbon and on to the page - similar to a typewriter. The quality is excellent, but the time taken, speed and price are off-putting. Graphics are impossible.

The latest in printer technology is the page or laser printer. These are usually found tagged to an Apple Macintosh or similar for desktop publishing purposes. A page printer works by project-

## Vital statistics

| Printer         | Epson    | Epson    | Panasonic | Star     |
|-----------------|----------|----------|-----------|----------|
|                 | EX-800   | LX-800   | KX-P1081  | NL-10    |
| <b>Function</b> |          |          |           |          |
| Price           | \$840    | \$520    | \$639     | \$499    |
| Type            | d/matrix | d/matrix | d/matrix  | d/matrix |
| Interface       | parallel | parallel | parallel  | serial   |
| Draft Speed     | 200 cps  | 108 cps  | 89 cps    | 70 cps   |
| NLQ speed       | 44 cps   | 25 cps   | 20 cps    | 16 cps   |
| Dimensions      | 18x15x5" | 15x12x6" | 16x11x5"  | 16x3x4"  |
| Buffer size     | 8k       | 3k       | 1k        | 1k       |

## Feature facts

| Printer         | Epson<br>EX-800 | Epson<br>LX-800 | Panasonic<br>KX-P1081 | Star<br>NL-10 |
|-----------------|-----------------|-----------------|-----------------------|---------------|
| <b>Function</b> |                 |                 |                       |               |
| Bold            | ✓               | ✓               | ✓                     | ✓             |
| Condensed       | ✓               | ✓               | ✓                     | ✓             |
| Double Width    | ✓               | ✓               | ✓                     | ✓             |
| Double Height   | ✗               | ✗               | ✗                     | ✓             |
| Graphics        | ✓               | ✓               | ✓                     | ✓             |
| Italic          | ✓               | ✓               | ✓                     | ✓             |
| NLQ             | ✓               | ✓               | ✓                     | ✓             |
| Proportional    | ✓               | ✓               | ✓                     | ✓             |
| Super/subscript | ✓               | ✓               | ✓                     | ✓             |
| Underline       | ✓               | ✓               | ✓                     | ✓             |

ing a laser beam onto a rotating drum to form an image. Toner gets attracted to the areas of the drum that have been scanned (or hit) by the laser beam. When the paper is finally fed through, the toner is attracted to it and fixed using heated rollers. The process sounds lengthy, it is in fact very fast; several pages per minute is the usual output. Expensive and the quality, although good, is not quite up to the standard of the daisywheel. Their main advantage is where graphics and text are mixed, hence the DTP applications.

**EX-800**

Epson, (03) 543 4655

The EX printer combines the well known virtues of cheaper 9-pin printers and several up-market features normally reserved for the 24-pin variety. By adding a colour kit the EX-800 can be upgraded to a fully-fledged colour printer.

There are two NLQ styles to choose from: Roman and Sans Serif. These can be accessed from either control panel or software. As can Pica, Elite, condensed and proportional type.

Character widths are given in characters per inch (cpi). Pica refers to 10 cpi and Elite 12 cpi. Epson has cut corners by using a standard character width and simply altering the spacing between each letter to achieve Pica or Elite character spacing. This gives Elite text an unsightly squashed look.

A very fast printer with many useful options that is spoilt only by the sub-standard Elite font.



**LX-800**

Epson, (03) 543 4655

Epson's cheapest printer, the LX-800, follows on from the earlier LX-80 and LX-86 (both models discontinued, but can still be picked up in various stores for a reasonable price).

The 800 is surprisingly nifty - and relatively quiet - for its compact size. It has automatic sheet loading, built-in tractor feed and two NLQ fonts: Roman and Sans Serif. As with most Epson printers, extra features (such as cut-sheet feeder and longer-life ribbons) can be added.

Easily the fastest (sub \$550) 9-pin mentioned on this page. The only major short-coming is the method of paper-feeding; fine when going forward, but it tends to jam when in reverse.



**KX-P1081**

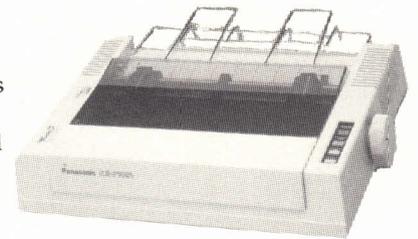
Megabus Microcomputers, (03) 598 5022

Panasonic are renowned for building sturdy printers; the KX-P1081 is no exception. It's not just the chassis that gives impression either, but also a combination of tractor feed, roller mechanism and other internals.

The printer accepts all the standard Epson codes for alternating between type styles and graphics printing.

A switch sits on the main control which gives easy selection of print modes: normal (draft), NLQ or compressed. The compressed or condensed print mode cannot be altered to any other during printing which means output designed for wide paper (or wide carriage printers) may be used.

Although a fraction slower than Epson's LX-800, the KX-P1081 is fair value for money, given that it will survive hostile office environments like ours where printers get moved around a lot, sometimes less than delicately.



**NL-10**

Star Micronics, (02) 736 1144

Serial printers are slower than their parallel counterparts simply because data flows through one line rather than seven or eight. That said, the serial version of the NL-10 is only slightly slower than than Amstrad's due to be released DMP 3160.

The NL-10 is also available with a parallel interface. That will put you back another \$86, is a little faster, but otherwise is identical.

Star's printer is fully Epson compatible, and has a smattering of other useful type-face and graphics options. Double size and quadruple size characters, for example. Quick selection of character size and type is possible from the control panel which is handy.

A printer worth looking at due to its many functions and simple push button selection. It's only worth paying extra for the serial interface if you really need it, otherwise stick with the parallel model.



# Conway's LIFE

by Petr Lukes

Computers are ideal for modelling real life. The many tedious calculations can be performed in reasonable time, without taxing the patience of a rational being. One of the first published programs for the CPCs was a simulation (Kingdoms, second issue of the U.K. User and first issue of TAU).

LIFE is a classical modeling program, which simulates a colony of cells inhabiting an invisible grid. It regenerates according to simple rules which were postulated by John Conway, a mathematician at Cambridge. It has been implemented on most microcomputers, usually in machine language to produce rapidly changing patterns.

This is a fairly slow version, written in straight Basic which would need very little modification to run on most computers. I wanted to watch the effect of the rules as each generation develops, so the display shows the state of the current generation and the changes in the succeeding generation as they happen. The births and deaths happen simultaneously at the moment of regeneration: a birth/death will not affect an adjacent survival/death/birth if the conditions are right. The changes are recognised only when the succeeding generation becomes the current generation.

Each colony will produce a different pattern. Some colonies may expire quickly, while others, seemingly on the point of extinction, may suddenly explode. Some patterns will oscillate between two states with a period of two or more generations, and others will become static. The random initialisation of each new colony could be changed to allow the study of selected

starting patterns.

This is definitely not a fast action-packed interactive game, but patience will be rewarded by the development of interesting patterns.

```

10 name$="Conway's LIFE LKS 871121"
20 MODE 1:PRINT name$
30 PRINT:PRINT"LIFE models a colony of
  cells which""develops according to th
  ese rules:"
40 PRINT:PRINT"A cell with two or thre
  e neighbours""survives."
50 PRINT"A new cell is born in a vacan
  t space""with exactly three neighbours
  ."
60 PRINT"A cell' with fewer than two or
  ""more than three neighbours dies."
70 PRINT:PRINT"Every cell has eight ne
  ighbours:"
80 PRINT"  1 2 3"
90 PRINT"  8 + 4"
100 PRINT"  7 6 5"
110 vacant$=CHR$(&90)'dot
120 adult$=CHR$(&E9)'square
130 born$=CHR$(&E7)'diamond
140 dead$=CHR$(&AB)'cross
150 PRINT:PRINT"Cell symbols:"
160 PRINT"Vacant : "vacant$
170 PRINT"Adult : "adult$
180 PRINT"Newborn : "born$
190 PRINT"Deceased : "dead$
200 DEFINIT a-z
210 ' Setup string matrices
220 hor=10:vert=20'matrix dimensions
230 DIM curr$(vert),succ$(vert)
240 FOR a=0 TO vert
250 curr$(a)=STRING$(hor,vacant$)
260 succ$(a)=curr$(a)
270 NEXT a
280 ' Random colony
290 FOR a=1 TO vert-1
300 FOR b=2 TO hor-1
310 IF RND(TIME)>.6 THEN MID$(curr$(
  a),b)=adult$
320 NEXT b
330 NEXT a
340 PRINT:PRINT"Press a key to start"
350 WHILE INKEY$="" :WEND
360 CLS:PRINT name$
370 gen=0:birth=0:death=9'counters
380 ' Display current and process succ

```

eeding generation

```

390 WHILE birth+death>0:birth=0:death=
  0
400 LOCATE 1,3:PRINT"Generation"gen"--
  >"gen+1:gen=gen+1
410 FOR a=1 TO vert-1
420 PRINT curr$(a)SPACE$(4)'current g
  eneration
430 NEXT a
440 FOR a=1 TO vert-1
450 FOR b=2 TO hor-1
460 neigh=0'neighbour count
470 IF MID$(curr$(a+1),b-1,1)=adult$
  THEN neigh=neigh+1
480 IF MID$(curr$(a+1),b,1)=adult$ T
  HEN neigh=neigh+1
490 IF MID$(curr$(a+1),b+1,1)=adult$
  THEN neigh=neigh+1
500 IF MID$(curr$(a),b+1,1)=adult$ T
  HEN neigh=neigh+1
510 IF MID$(curr$(a-1),b+1,1)=adult$
  THEN neigh=neigh+1
520 IF MID$(curr$(a-1),b,1)=adult$ T
  HEN neigh=neigh+1
530 IF MID$(curr$(a-1),b-1,1)=adult$
  THEN neigh=neigh+1
540 IF MID$(curr$(a),b-1,1)=adult$ T
  HEN neigh=neigh+1
550 x$=vacant$:y$=MID$(curr$(a),b,1)
560 IF neigh=3 THEN IF y$=vacant$ TH
  EN x$=born$
570 IF y$=adult$ THEN IF neigh=2 OR
  neigh=3 THEN x$=y$ ELSE x$=dead$
580 MID$(succ$(a),b)=x$
590 NEXT b
600 LOCATE hor+1,a+3:PRINT" --> "succ
  $(a)'succeeding generation
610 NEXT a
620 ' Move succeeding to current
630 FOR a=1 TO vert-1
640 FOR b=2 TO hor-1
650 x$=MID$(succ$(a),b,1)
660 IF x$=dead$ THEN x$=vacant$:deat
  h=death+1
670 IF x$=born$ THEN x$=adult$:birth
  =birth+1
680 MID$(curr$(a),b)=x$
690 NEXT b
700 NEXT a
710 PRINT USING"births:### deaths:###
  ";birth;death
720 WEND
730 PRINT"Pattern is now stable"
740 END

```

# Artificial Intelligence

## Philip Riley introduces us to the marvels of A.I. plus our usual question and answers and the contact list

Several months ago we took a short and simple look at Artificial Intelligence. Now we will take a closer look at AI and the problems involved when trying to implement it in your programs.

We must first of all define intelligence. Intelligence is the ability to learn, the human brain has vast capabilities of learning, every day new information is stored and in most cases can be retrieved immediately.

Why did I say in most cases? Well surely you have had a word or a name on the tip of your tongue but just cannot quite think of it, or how many times have you forgotten where you put that pen only to suddenly remember at some later time. But this is getting away from the point.

Now some computer programs do have the ability to learn but only on a small scale compared to humans. For instance I have seen a game that was less than 2k long which played with twenty three matches. (I am sure you are all familiar with this game.) On playing the first game the program knew the rules and objective of the game but nothing else, so the first game could always be won without any worries whatsoever. But after each game the program looked at the game and found out why it had lost and altered it's play accordingly. As a result after five games the computer could win most of the games unless you knew the trick that enables you to win.

This is an intelligence of sorts but there is a big gap between this program and the human brain.

So now we move onto AI in adventure games. For this we need to be able to talk to the program in something near to English, but the English language is very complex and verbose, but what is worse is the way the same word can be used in different contexts.

For instance the phrase PHIL CAUGHT

A BALL, is simple enough, I put up my hand and caught a ball. But then we can have PHIL CAUGHT A TRAIN, now I did not put up my hand and catch a train (at least I hope I didn't). Next we have PHIL CAUGHT THE FLU or even PHIL CAUGHT A LEFT HOOK (again I hope I didn't). Here we have four uses of the word CAUGHT, all of them in a different context. How does a computer program know the difference? We know because we have the ability to learn but a program must be told the difference and cannot work it out for itself.

It would take a lot of memory to put all of the English language into a computer and then imagine how long it would take for the program to sort out a simple sentence like PHIL CAUGHT A BALL, work out exactly what Phil had caught and how he had caught it.

Now we can use the same words but in a different order. THE BALL CAUGHT PHIL. Now I did not go flying through the air to be caught in the strong arms of a bouncing ball. The ball came flying through the air and hit me. But it did not put out an arm and hit me as it flew past. It collided with me. But it was not flying because balls cannot fly. Somebody else had thrown it and it was sailing through the air. But sailing through the air is nothing like sailing is it, you won't ever see a ball winning the America's Cup. So perhaps we had better say that the ball had been thrown by someone and was moving through the air in my direction, the ball collided with my head and then fell to the ground (the ball fell to the ground, not my head).

Now I ask you who talks like that, certainly not me. But as you can see even from a simple four word sentence you can just keep going on and on. Now of course in an adventure game you only use the words that are relevant to the game and then you only use those words

in a context that fits the game. Even so the parser and vocabulary on any game can be extremely long but it is the most important part of any game.

Of course many good parsers are being used in today's games, so much so that before long the old two word input may be a thing of the past. This I think will be a great pity as the two word input games are great for beginners. Sentence input is fantastic but it can be very hard for the newcomer to grasp along with the type of thinking that is required to solve the adventure.

The two word input always did some of the thinking for you, sentence input makes you do a lot more of the thinking.

Over the coming months I will be taking other looks at AI including it's origins and languages that are used to program it but next month Drac's back. Yes, last month we got you into the castle, next month I will rejoice those lost souls and see what we can do.

Now for the big finish and this month it comes from Dean Stibbe who says MAY YOUR SLEEPLESS NIGHTS RESULT IN MANY SOLUTIONS, and if not don't worry the questions and answers are coming up next.

## QUESTIONS

First question is from Les Hancock and I think Les put it so well that we will publish it exactly as we got it, take it away Les.

How the hell do you get anywhere? #!\$#"!!! thing I have only travelled six locations and I die from mozzie bites, eaten by crocs trying to swim the river or sink in the swamp. I feel that I am having difficulty in communication, and it gives no assistance with its replies. All it can say is "You speak pidgeon English."

Well Les, look in the May mag and you should find some help.

A. Langton would like to know where to find the ring in the Hobbit.

To questions concerning Bastow Manor from Michael Fitzgerald. They are, how do you open the box and how do you carry the wine. (I know the way that I like to carry wine but we won't go into that today.)

Michael also has an urgent problem in Knight Tyme, how do you transport onto the Moon with the Tyme Guardians.

And while we are on Knight Tyme, Bill Harper would like to know how to get the tankard and other high objects.

Here's another from Michael, how do you get past the freezer in Necris Dome.

And while Michael is asking questions he would also like to know how to get into the ring of crystals in Warlord.

Dean Stibbe is stuck in part 3 of Dracula. He is in the tunnel between his tomb (that's Drac's tomb, not Dean's) and a mausoleum. He has desecrated the coffins but cannot move out of the tunnel without being killed. Can anybody help him.

Dean would also like to know how to get past the mulberry tree in Arnold goes somewhere else. He has asked this question before but has not had a reply yet.

Bill Harper has played Swords and Sorcery for two years now and in his words cannot work out how to play the stupid game.

I think it is time for an attic title of distinction, we have not had one for a while. This one goes to Michael Fitzgerald. Michael, I award you the title of SENDER OF THE MOST QUESTIONS CONCERNING THE LARGEST NUMBER OF GAMES IN ANY SINGLE MONTH, and just to back the title here are some more questions this time concerning Kentilla.

How do you get to the black castle? How do you open the steel door in the castle across the moat and what is Elva supposed to do with the bow and arrows?

We have a few questions concerning the Pawn this month, first these from Simon Lincoln. What do you use as a lever to move the boulder? Simon cannot find anything strong enough. Of what use is the wheelbarrow? What does the laughing guru want? (This one is answered later on in the column.) And should you kill the adventurer. (What sort of person are you killing, one of your own, shame on you Simon.)

And then we have these questions from Les Hancock. How do you get past the dragon and how do you climb down the hole in the paper room? Les knows that you have to tie the rope to the hook inside the cupboard but he still falls to a fiery death. How do you open the safe in Gringo Baconburger's office and finally how do you vote?

Gary Fraser is having trouble getting the pieces of document from the spies of China and Russia in Hacker. A. Langton is having trouble getting the piece of document from the Indian in the same game.

Timothy Ryder is having trouble opening the oak door in Castle Dracula (from the Adventure 4-pack). Just where is the key to this door, and he would also like to know how to examine the crack in the floor.

Bill Harper is also having problems in Tau Ceti. He has got all of the rods but cannot install all of them without dying of radiation poisoning. He would also like to know where the library is.

A. Langton has completed Smugglers Cove but has not been able to score 100%, he thinks the problem lies in the palatian room. How do you stand EE in the middle and look the other way.

## ANSWERS

Now it is onto the answers and Dean Stibbe has a couple of answers for us concerning Seabase Delta. Wake up the hen by chewing some gum and then blowing a bubble, the bubble will burst and wake the hen. To get the cannonball you must lever the cannon with the broken-off mast (of course I am sure that you have broken off the mast by firing the tigerfish missile).

Here is an answer to a question we asked some time ago. It concerns finding the study in Bastow Manor. Go to the grate and move it. The old man comes in and bops you. You will recover. Go to the mailbox and look in it and get the silver key. Go to the stairs and unlock the door. Open the door and go door. That one was supplied by Michael.

Lloyd Thamm was having trouble with light in the Pawn. Well, Les Hancock and Douglas Mansell have supplied this

answer. Lloyd has hopefully completed the task set to him by the guru which was to get some water which can be found in the form of snow at the Northern end of the path. The guru will then tell you that you will need some light in the forest. Travel South back to the forest clearing which has a gnarled tree stump in the middle of it. "LOOK TREE STUMP" and you will discover a pouch (the pouch only appears after you have given the water to the guru). "GET POUCH" (you may need the trowl the first time), upon opening the pouch you will find three colours, mix these colours and you will be rewarded with a brilliant light (now do you see the light?).

Now for Knightlore, the following tips were provided by Douglas Mansell and Dean Stibbe. The object of Knightlore is not to kill the wizard but to remove the spell that he has placed on you that turns you into a werewolf whenever the sun goes down. If you enter the wizard's chamber as a werewolf the stars above the cauldron will kill you, if you enter as a man they will show you the next item that must be placed into the cauldron. If you have the right object jump onto the cauldron and drop the item in. You will increase your percentage by exploring the castle and finding more objects to drop into the cauldron.

One for imagination here, how do you take the yo-yo from the lonely child of mildew. Douglas Mansell says give her an icicle.

Douglas Mansell, A. Langton and Gary Fraser have all provided this information for Hacker. When asked for the location of the test site try typing in "IDENTIFY TEST SITE", the test site is in fact Australia.

There it is for this month, except the Contact List below. Please remember the rules I quoted last month and try not to abuse the offers of help from those people on the list.

### THE CONTACT LIST

Jason Pavy, 105 Lyall St. Kalgoorlie, W.A. 6430

*The Hobbit, Forest at Worlds End*

John McNeill, 1 Hawkins St. Chatswood Hills, Qld. 4127

*Jewels of Babylon, The trials of Arnold Blackwood*

Karla Slack, P.O. Box 201 Springwood, N.S.W. 2777

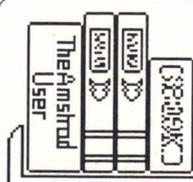
*Adventure Quest, Adventure Quest, The Neverending Story, The Hobbit, Lord of the Rings 1*

Dean Stibbe, 25 South Esplanade Bribie Island, Qld. 4507

*Seabase Delta, Subunk, Colossal adventure, Dracula (parts 1&2), The trials of Arnold Blackwood*

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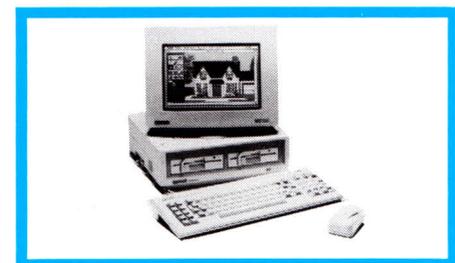
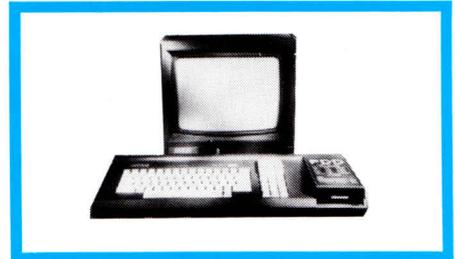
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| CS021 | Taxan   | KP-810 |                           |              |

03: Display Options  
Shear using ..... \*Y\*  
Alter data ..... \*A\*  
Erase data ..... DEL  
Assign to set ..... R  
First page ..... B  
Next page ..... ENTER  
Find new page ..... F  
Go to record number ..... G  
Print ..... P  
Print single record ..... R  
Erase record ..... E  
Insert new record ..... I  
Show re-sequenced ..... X  
Rotate format ..... R  
Go to search ..... S  
Exit to main menu ..... X

British United Freight  
493 Western Avenue  
Gloucester  
GL9 5JN  
Tel: 0452 354321  
Contact: Mike K  
Ref: BUP

| Invoice | Tax point | Amount    | Date paid | Comments        |
|---------|-----------|-----------|-----------|-----------------|
| 12004   | 20 Aug 87 | £235.00   | 02 Oct 87 |                 |
| 12399   | 29 Aug 87 | £98.00    | 02 Oct 87 |                 |
| 12450   | 01 Oct 87 | £305.00   |           | re              |
| 12453   | 21 Oct 87 | £133.00   |           |                 |
| 12533   | 03 Nov 87 | £1,004.50 |           |                 |
| 12598   | 10 Nov 87 | £355.65   |           |                 |
| 12703   | 11 Nov 87 | £200.00   |           |                 |
| 12782   | 11 Nov 87 | £39.20    |           |                 |
| 12839   | 04 Dec 87 | £083.55   | 04 Dec 87 | Cash with order |
| Totals: |           | £3,253.90 |           |                 |

Date of invoice

Drive:A File:INVOICE Records:00017 Selected:00009 Key: Format:1

Customer Details and Invoices

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493 Western Avenue  
Gloucester  
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Drive:A File:INVOICE Records:00017 Selected:00009 Key: Format:1

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