

The
Aussie Mag
for Amstrad owners

THE AMSTRAD USER

Issue No. 38 \$4.25

March 1988



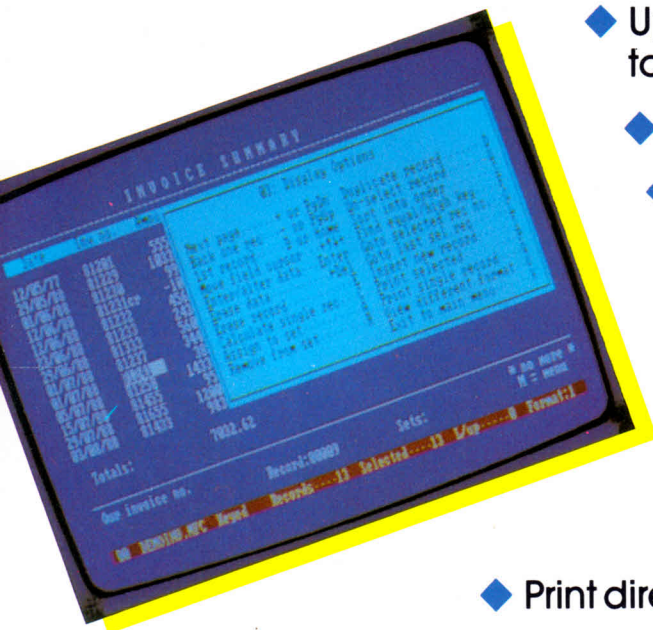
- **Feature - Educational Computing in the Classroom + Advanced Graphics + Hot Tips for CPC users**
- **Introduction to Assembly Language on the PCW + review of new Scanning device + The Pawn**
- **Compatibles Corner + PC Help**

FOR THE NOVICE & EXPERIENCED USER

MASTERFILE

PC

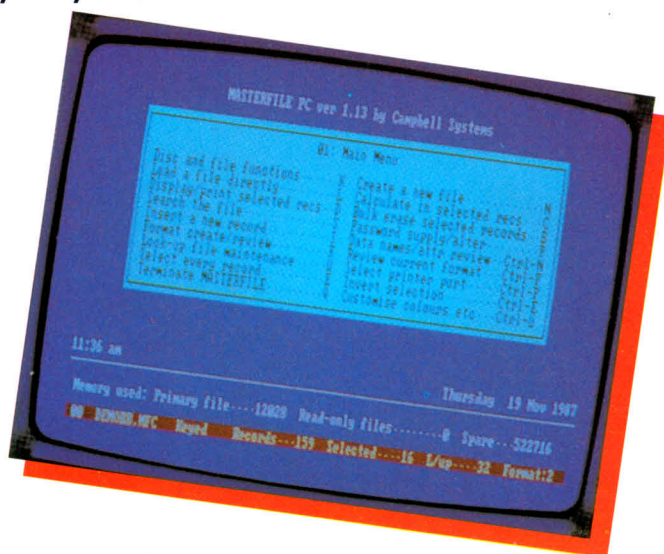
FEATURES



- ◆ Up to 80 fields per record, all variable-length up to 254 characters
- ◆ Keyed or unkeyed files
- ◆ Totals and field calculations
- ◆ Multiple user-defined display/print formats, up to 160 columns
- ◆ Fast and powerful combination searches
- ◆ Sort by any field

- ◆ Print direct or to disc
- ◆ Full relational database

- ◆ File load/save/merge/import/export
- ◆ Fully menu-driven, machine coded and fool-proof
- ◆ Detailed manual, tutorial and example files



Applications include:

Address lists, labels, stock control, inventories, price lists, shares-portfolio, club membership, bought/sales ledger, bank statements.



Campbell Systems

\$199
including postage

Available from the end of March 1988 and only through The Amstrad User - book yours now!

THE AMSTRAD USER

Issue No. 38
March 1988

Letters - your views, advice and comments from the mailbag	2	Instant Images - a review of a new scanning device from Database/Pactronics for PCWs	34
Classified Ads - the official order form to reach over 8000 readers of The Amstrad User	4	Protex March - Rob Ainsley gives more information on the alternative to LocoScript	36
Nationwide User Groups - a monthly update on Amstrad User Groups plus Contact List	6	Three-piece suite - a vocabulary tester, a printer utility and a LocoScript 2 word counter	39
News - Major distribution changes in Australia plus "Gossip from the UK"	8	DIY Database 2 - build your own database by using the PCW standard HELP command	41
Fonts - a utility from Petr Lukes to modify the in-RAM character set and produce extra fonts ...	10	Mail Order Software for PCW's and PC's Take your pick while stocks last	44
Educational Computing - computers in the classroom as seen by Thomas Lockwood	11	Masterly Masterfile PC - an overview of the new database system from Campbell Systems	45
Advanced Graphics 2 - Gary Koh completes the basic graphic commands and tackles masking ...	16	Dirigible DIRs and Shareware programs - where Chris Collins explains more about MS/DOS and details three new shareware packages	46
Hot Tips - short programming hints for CPC users ..	18	PC Help - more comments from Kevin McLean	47
Getting the message across - Kevin McLean , continues his introduction on Viatel	20	Firing up CP/M - 6 - ending a look at utility programs and starting Moving and dynamic debugging ...	49
Logo Quizzmaster for CP/M 2.2 - a revised version from Charles Clarke for 464 users	22	Masterfile III - an overview of the CPC version	52
Mail Order Software for the CPC464, 664 and 6128 An updated list, including new titles, of what's on offer from our shelves this month for CPC's	24	Words Work 2 - getting the most from your printer and word processor	54
Personal Property - how Logo stores data plus an example database	25	Gallimaufry X - four short CPC type-ins	56
Assembly Language Programming - the first PCW steps described by Helen Bradley	28	Program made Plain - tutorial type-in	58
The Pawn - a review of the Rainbird adventure	31	The Living Daylights - 007 on the small screen	60
		Adventurer's Attic - Philip Riley moves in all directions plus 'Jewels of Babylon' Hint Sheet	61
		Books, Binders and Back Copies - plus Year Discs and tapes for CPCs	64

ADVERTISER'S INDEX

Bunyip Software	2
Magnetic Data Storage	5
Living Image	9
Pactronics	31/32
Roberts Office Supplies	3
Top Disks	59

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

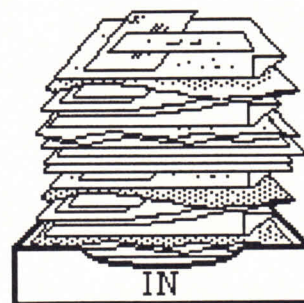
Side 1:	FONTS	-12	GWINDOW	-27	MASKEX	-37
	FLOODCIT	-51	CASVERT	-65	LEAGUE	-75
	FREEZE	-90	TEXTEDIT	-99	MEMORY	-128

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. The Amstrad User is normally published on the first working day of each month. Reprinting of articles published in The Amstrad User is strictly forbidden without written permission. Copyright 1988 by Strategy Publications. The single copy price of \$4.25 is the recommended retail price only.

The subscription rate (for Australia) is \$42.50 for 12 issues of the magazine only, or \$80.00 for 12 issues of the magazine plus tape (for CPC range only) containing programs appearing in that issue. Postage is included in the above prices. For subscriptions to New Zealand, PNG, Solomon Islands or Vanuatu please add \$21 airmail. Other overseas prices available upon application. Please note that whilst every effort is made to ensure the accuracy of all features and listings herein, we cannot accept any liability whatsoever for any mistakes or misprints. Contributions are welcome from readers or other interested parties. In

most circumstances the following payments will apply to published material: Cartoons \$10.00 and a rate of \$15.00 per page for programs, articles etc. unless otherwise previously agreed. Contributions will not be returned unless specifically requested coupled with a suitable stamped and return addressed padded bag (for tapes or discs). *The Amstrad User is an independent Australian magazine and is not affiliated in any way with Amstrad or their Australian distributors Mitsubishi Electric AWA Pty Ltd., or any other dealer in either software or hardware.*

Letters



I enjoy reading your magazine and enjoy relaxing in the evening reading it or working on my PCW8256, quite often with one or more babies perched on my lap.

While I am more than pleased with the capabilities and performance of my PCW I have one difficulty in that I am constantly using the printer and replacing ribbons at a minimum cost of \$22! is far too expensive.

I would be very interested in re-inking my ribbons but the local dealer here has not been able to help at all. Having read in your magazine about the difficulties experienced by some who used an unsuitable ink I am wary of buying without advice. I would appreciate any advice as to what ink to use and the most efficient, least messy way to go about it.

I am also interested in any information about coloured ribbons for the PCW as again my local dealer is unable to help in this matter.

Rosalie McDonald, Ulverstone, Tas.

In last month's 'CLASSIES' and indeed this month, appeared an ad offering a re-inking service. You may find the next letter of interest too.

For CPC Computers Bunyip Software's Screen Graphics Package V.7

Has a versatile Drawing program using Mode 0 and 1 that can save, then merge with any sized picture. A 'U.D.' Character designer program, an Epson compatible Shaded and B/W screen dump program and Library of pictures for the drawing program. Included with each order is a FREE Disc Label Utility.

S.G. Pak (Disc) - \$54.99 including P. & P.

S.G.P. Library disc #2 - \$21.99

Bankcard and Visa card welcome.

BUNYIP SOFTWARE

Box 591, MURRAY BRIDGE, SA 5253

For more details write to the above address.

There has been a lot of talk in your magazine over the year about the re-inking of printer ribbons and the inherent problems associated with not doing this procedure properly or using the correct materials.

A Brisbane company called

AUSSOFT
PO Box 476
Cleveland, Qld. 4163
(07) 286 5590

manufactures a DOT MATRIX INK and as its name implies, it is designed specifically for dot matrix printers.

A 60 ml bottle will cost about \$8.70 inc. postage. It contains the correct amount and type of emulsifiers and lubricants to do the job properly. All the pages in this package were done on a DMP 2000 ribbon that was as dry as a bone 2 weeks before the above date. The company is as efficient and courteous as one would hope and I found them only too helpful. They also manufacture a range of ink colours for the more adventurous. My 60 ml bottle will probably last me to the end of the next decade.

I have 2 brands of DMP 2000 ribbons with two different types of ink roller inside the main assembly. One is a hard styrofoam substance in a C-ITOH ribbon and the other is a felt-like roller made by AMSTRAD - I presume. The latter re-inks so much easier and holds the ink longer. One day a hole will wear in the ribbon but the ink has vastly increased the life of them for now.

Another Brisbane company called JANES COMPUTER SUPPLIES in Milton will re-ink ribbons for you but will not touch the continuous loop type ribbons such as those found on the DMP 2000. They replace the ribbon as part of the service and cannot replace a

continuous loop. The charge is around \$6.00 plus postage and the products are turned around in about a week. I hope your readers will find the above information as helpful as I did.

Anthony Trost, Gracemere, Qld.

I was reading through the advertisements in the December 1987 issue of TAU. I noticed the advertisement which included the The Knife (HiSoft). It stated that it would only operate under CP/M 2.2. You might know by now that that is not correct as The Knife which I got from you is of Version 2.35. This version is designed for the PCW machines and contains Knife2 J which is a great joy after a series of unnecessary disappointments which I got - firstly the manual supplied stated what you have stated ie. CP/M 2.2 only and then secondly after I discovered that The Knife worked under CP/M Plus that the Knife2 software didn't work properly especially the cursor keys. I am enclosing a copy of the READ.ME document.

Bruce Muller, Pasadena, SA.

I used to be a member of THE AMSTRAD USER when it first came out, but after listening to a few people I sold

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.

my trusty old CPC 464 to buy another brand. What a big boo boo. Twelve months without my CPC 464 was too much, so after going out and buying another CPC 464 recently, I find myself wishing to subscribe to your great magazine again. I already have issues 1 to 24 from my previous subscription. Lucky I kept them. I would appreciate if you could write back and let me know if it is possible to receive the back issues from number 25 to the current issue, and also subscribe for a further twelve months. Also, if you could let me know the total cost for the magazines and cassettes. thank you.

Neil Wiseman, Yendon, Vic.

Any other 464 user tempted to divest themselves of their computer take heed. Details have been sent to Neil answering his other questions.

In TAU July 1987, a method of producing cassette inlay cards on LocoScript was published in the Tip-Offs section. Here is my method to produce not

merely an inlay card but an entire cover on the CPC6128 using Tasword 6128 and the DMP 2000 or equivalent printer. Firstly, to set up the "TASTAPE" program:

- (1) Load up Tasword as normal.
- (2) Type CONTROL-ENTER for the main menu and then B to enter BASIC.
- (3) Alter line 110 to read as follows:
110 KEY 9, STRING\$(11, 243)+CHR\$(181)+STRING\$(5, 243)+CHR\$(181)+STRING\$(25, 243)+CHR\$(181)+STRING\$(23, 243)+CHR\$(4)
- (4) Save this by typing SAVE"TASTAPE"

To begin creating a cassette cover from scratch:

- (1) Load up the program with RUN"TASTAPE"
- (2) Type CONTROL-2 to disable the help screen.
- (3) Ensuring that the cursor is in column 1, type CONTROL-f9. This will produce a series of tab stops on the screen as follows:

-Back -Side Front Cover - Inside Flap-
Label

- (4) The relevant information may then

be typed in each column, up to one screen (23 lines with help off) full, using the tab stops as a guide to the appropriate positions.

(5) The following print options for the DMP2000 may be used with the program: Pica, NLQ-standard, Sub/Superscripts, Double-Strike, Italics, Bold and Underline. Different sized fonts ie. Proportional (+NLQ), Condensed, Elite, Double Width cannot generally be used, since they change the relative positioning of the tab stops. All of the styles reducing the print size can, however, be used in the final column provided that they are switched off at the end of the line.

(6) Once printed, the cover can be folded to shape, decorated with pictures etc.

Angus Kidman, Armidale, NSW

I have a PCW 8256 and have found the magazine very useful. I wonder whether it is possible to rewrite some of the CPC programs for the PCW. The CPC programs use commands such as

DISCOUNT DISKETTES

SPECIAL OFFER for THE AMSTRAD USER readers

Buy 1 box of 10 MAXELL CF2 3" Diskettes at \$76.00 a box

and receive FREE OF CHARGE 1 extra disc

XIDEX 5.25" Single Sided Double Density	\$25.00 a box	.....	LOCKABLE DISK BOXES	
XIDEX 5.25" Double Sided Double Density	\$30.00 a box	.....	3.5" - 40 Capacity	\$14.60
PRECISION 5.25" Single Sided Double Density	\$16.50 a box	.....	3.5" - 80 Capacity	\$18.00
PRECISION 5.25" Double Sided Double Density	\$18.00 a box	.....	5.25" - 60 Capacity	\$16.50
Mouse Mats	\$19.00	.....	5.25" - 100 Capacity	\$18.00
Printer Ribbon	Amstrad DMP2000 (Nylon)		\$19.00	.....
Printer Ribbon	SP80 - BMC 80 - Multistrike		\$11.50	.....
Printer Ribbon	Epson 8750 (Nylon) FX80 MX80 etc.		\$14.25	.....
Refill Pack	Epson 8758 (Nylon) for 8750 ribbon		\$12.38	.....

We accept Bankcard, Visa and Mastercard. People wishing to use their Credit Card may phone or mail form back to 271 Burwood Highway, Bennettswood, Victoria 3125. Allow \$4.00 for freight and handling.

*Please circle your credit card **BANKCARD VISA MASTERCARD***

Credit Card Number: _____ Expiry Date: _____

Amount: \$ _____ Signature: _____

**ROBERTS OFFICE SUPPLIES PTY LTD (5 doors from Station Street Corner)
271 Burwood Highway, Bennettswood, Vic 3125 - Telephone (03) 288 4166**

CLASSIES

FAMILY TREE for CPC6128, 5 generation trees to screen or printer. List cousins. Epson compatible. Uses BANKMAN. 3" disc, \$25. 5.25" disc (40 trk), \$20. Jeff Raphael, 3 Field of Mars Ave, Turrumurra 2074 (02) 449 6537

FOR SALE - PCW user's interesting index to stack of mags, with 70 headings and 40 entries under *Software*. \$2.37. Leni Matheson, PO Box 1, Sandgate, Qld 4017, ph (07) 269 6094

FOR SALE - Amstrad CPC6128 with colour monitor, near perfect cond. with all relevant manuals. Software includes system and utility discs, Tasword 6128, Zork, Colossus Chess and 4 blank discs. \$700 the lot. A/H ph (03) 707 5805

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. **Ribbons re-inked** \$4.50 plus return postage. Write to: Box 269, Two Wells, SA 5501

DDI-1 Wanted Urgently. Busy Scout Leader desperately needs to upgrade slow Tasword and Masterfile tapes to disc. Frank Dyer, 1 Centura Crescent, Armidale, NSW 2350, ph (067) 725157

PEN, INK, GRAPHICS, SOUND, BORDER etc., which are not represented directly in Mallard Basic. Has anyone to your knowledge attempted to find the equivalents in Mallard by either a single command or subroutine or is it merely a matter of trial and error?

Richard Harvey, North Carlton, Vic

Not an easy task, especially when the CPC Basic has specific graphics commands which do not exist in PCW Mallard Basic. The short answer is 'no', we have not heard of anyone plucky enough to attempt the task,

I would like to congratulate you on 3 years of good service to Amstrad owners. I think the magazine should be equally divided between machines. Also I think some sort of index should be set up so people can judge between games that are good or bad.

Can anybody help me? I am stuck in Academy in Level 1 on the mission meltdown. I've read the tips published before and still cannot succeed in this mission. Also how do you return to the menu in Leader Board Golf from the Driving Range as I cannot find it in the instructions.

D. Fallon, Warwick, Qld

An index of the first three years of publication will be printed in next month's magazine. It will be divided into machine type eg. CPC or PCW, and within each type will be subject headings such as 'Games Reviews', 'CPM', 'Listings' and so on. We can't help you with Academy, but with Leader Board we are reliably informed that you cannot go back to the menu. You have to do a cold start and reload the program.

I just received my renewal for the annual subscription to your magazine and have just finished writing my comments on the back of the form re: ways of improving the magazine. I thought I might "go public" with my comments.

It's a great magazine. Keep up the range of software available by mail order from your company. If I am going to buy by this method I can at least be assured that, in most cases you have reviewed the merchandise before you offer it for sale. I don't know what other states are like but South Australia is a "software desert". Suppliers haven't got the nerve to get at least one example of popular programs in stock for customer approval unless they have a definite sale. A typical example is the Master Scan device for the PCW. The state

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

Please place the following advertisement in the next available issue of The Amstrad User

I enclose payment of \$7.50 by Cheque/MO/Bankcard/ Visa/Mastercard (cheques payable to The Amstrad User).

Credit Card Number

Credit Card Expiry date

Name

Address

Telephone

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

supplier will not get one in unless a retailer orders one. Retailers won't order unless sale is made before hand. At just under \$300 I would like to try before I buy. A similar situation exists with DTP and graphic programs.

How about a problem solving section in your magazine?

People could write in with queries on hardware and software and if you couldn't give an answer perhaps other readers could help. Perhaps some suppliers might even get interested enough to give the back up service their customers deserve through your magazine. I find writing to suppliers frustrating because they hardly ever reply, especially I.S.D.

Can anyone out there tell me how I can get the Electric Studio Mouse to work on Fleet Street Editor Plus. The Light Pen works with it and I'm told the mouse does too, but I need some assistance.

David Breach, Hallett Cove Estate, SA

I am the owner of a PCW 8256 and have just purchased the Amstrad Users book for January 1988. I have installed the program 'Amstrad Users clock' as listed in the magazine. Unfortunately I find my computer bombs out on line 310 with syntax error. Could you please explain what the problem is.

C. Large, West Gosford, NSW

At a guess, your fingers. The screen dump shown in that article was produced from the published program. You had better check the line again carefully.

There's a great Amstrad mag from Glen Waverley

With advice and help we treat favourably

And Type-ins and Cheat Modes, Tip-Offs and real loads

Of info to keep us all neighbourly.

The Banks Family, Croydon Park, NSW

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

Issue	Booking by	Copy by
MAY '88	14/03/88	25/03/88
JUN '88	15/04/88	29/04/88
JUL '88	16/05/88	30/05/88

Please refer display advertising enquiries to DERRICK LEWIS & ASSOCIATES on (03) 51 9984.

Classified ads should be sent or phoned directly to The Amstrad User.

WALLET FRIENDLY



SPECIALS!!

WE DO SUPPORT OUR SALES WITH POST WARRANTY SERVICE

WE MAIL AUSTRALIA WIDE

<p>TEAC MITSUMI</p> <p>Shugart</p> <p>MPI <small>MINI PERIPHERALS INC</small></p> <p>ASTEC</p> <p>AMSTRAD</p> <p>PCW 8256 8512</p> <p>PC 1512</p> <p>CPC 6128</p>	<p>FLOPPY DISK DRIVES, LATEST FROM TEAC</p> <p>5.25" FD55, BR 40 tracks 360KB \$ 179.00 5.25" FD55, GFR 80 tracks 1.2MB \$ 199.00 3.5" D-357K-720K \$ 199.00</p> <p>5.25" SA460FH 80 Tracks 1MB \$ 138.00 5.25" SA455 40 Tracks 1/2HT. Rec. \$ 120.00</p> <p>5.25" 52SAFH 360KB DSDD Reconditioned \$85.00</p> <p>65 Watt Switch Mode Computer quality power supply unit \$ 78.00 D.C. Cable loom to fit \$ 14.00</p> <p>DO IT YOURSELF UPGRADES</p> <p>Memory upgrade kit 120ns to 512k \$ 69.00 Second external 720KB SA460FH New Ready to plug in and use MOONSTONE'S MFU for extra versatility \$ 299.00 Memory upgrade kit 120ns to 640k \$ 75.00 Second internal FD55BR 360KB 5 1/4" Including mounting hardware kit \$ 199.00 External 5 1/4" 360KB DSDD52SAFH Rec. Ready to plug in and use both sides \$ 247.50</p> <p>Original Nashua 5.25" diskettes fully boxed in U.S.A. \$ 19.90 per box of 10.</p>
---	--

All prices subject to change without notice. All new products 90 days warranty. Reconditioned units 60 days warranty. Cost of packing & postage extra-all prices include sales tax






**59a Boronia St, (P.O. Box 330)
Kensington N.S.W. 2033, Australia**
Tel: (02) 662 4884 Fax: (02) 662 1339
Telex: AA121822 (SY2567)

USER GROUP INFORMATION

Nationwide User Groups

This month we have had to find space for the Murwillumbah Amstrad Users Group who join our growing list. Welcome! A reminder to all groups who have been quiet over the last few months - we would be happy to be included on your mailing list for any newsletters you may produce. Thanks.

WESTERN AUSTRALIA

ALBANY AMSTRAD USER GROUP

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

AMSWEST (Perth)

President: Carl Hindle (09 419 1411)
Vice Pres: John Lansdown (09 342 3154)
Secretary: Saskia Quinn (09 444 8147)
Treasurer: Mario Ioppolo (09 444 7691)
Venue: Royal Institute for the Blind, cnr. Whately Cres. and Guildford Road, Maylands on the first and third Tuesdays of each month starting at 7.30.

AMSWEST (Blackwood) USERS GROUP

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

ROCKINGHAM-KWINANA AMSTRAD USER GROUP

President: Bob Harwood
Vice-Pres: Keith Saw
Treasurer: Rob MacIroy
Secretary: Ben Hille (095 27 5246)
Venue: Cooalongup Primary School, Westerly Way, Cooalongup (Rockingham), every second Wednesday at 7.30 pm.
Mail: 29 Milgrove Ave., Cooalongup, WA 6168

SOUTHSIDE AMSTRAD USER CLUB

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

AMSTRAD COMPUTER CLUB TOM PRICE

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

SOUTH AUSTRALIA

AMSOUTH AMSTRAD USER'S GROUP

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

AMSNORTH AMSTRAD USER'S GROUP

Organisers: J.T. Clarkin (08 262 6342)
R. Britton (08 258 7861)

Venue: Lacrosse Hall, Terama Street, Gepps Cross every Wednesday at 7.00 p.m.

AMSTRAD COMPUTER CLUB INC. (SA)

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

NORTHERN COMPUTING SOCIETY INC.

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

PORT LINCOLN AMSTRAD USERS GROUP

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

PORT PIRIE AMSTRAD USER GROUP

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

SOUTH EAST AMSTRAD USER GROUP (SA)

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

NORTHERN TERRITORY

DARWIN AMSTRAD USER GROUP

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

VICTORIA

CENTRAL AMSTRAD USER SOCIETY

President: Fred Gillen (03 580 9839)
Vice-Pres: Dennis Whelan (03 367 6614)
Treasurer: Doug Jones (03 560 8663)
Secretary: Craig Tooke (03 359 3736)
Venue: Corner of Church and Somerset Sts, Richmond on the first Sunday of each month commencing at 1.00 and generally twelve days later on a Friday evening at 7.00.

EASTERN AMSTRAD USER GROUP Inc.

President: J.L. Elkhorne
Secretary: Bob MacDonald (03 878 7783)

Treasurer: Ron Dunn (03 277 7868)
Venue: St. Ninian's Church Hall, cnr. McCracken Avenue and Orchard Grove, South Blackburn on the 1st Sunday of each month from 1.00pm.
Mail: R.D. MacDonald, 6 Ashwood Drive, Nunawading, Vic 3131

GEELONG AMSTRAD USER CLUB

President: Reg Morse (052 43 3239)
Vice-Pres: Arthur Pounsett (052 78 2160)
Secretary: Ron Butterfield (052 50 2251)
Venue: South Barwon Community Services Ctr, 33 Mount Pleasant Road, Belmont on the first Wednesday of each month, starting at 7.30p.m.

GOULBURN VALLEY AMSTRAD USERS CLUB

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

LATROBE VALLEY AMSTRAD USER GROUP

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

MARYBOROUGH AMSTRAD USER CLUB

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

MOUNTAIN DISTRICT AMSTRAD USER GROUP

President: Ian Pol (03 758 5282)
Treasurer: Lindsay Bell (03 758 9921)
Venue: Country Womens Association Hall, 4 Sundew Avenue, Boronia from 7.00 pm. every second Monday of the month.
Mail: PO Box 132, The Basin, Vic 3154

NORTHERN AMSTRAD USER GROUP

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

SOUTHERN AMSTRAD USER GROUP INC.

President: Noel Sheard (03 786 5469)
Secretary: Bob Patterson (03 786 6976)
Treasurer: Christine Donaghey
Venue: Senior Campus at John Paul College, Frankston every third Tuesday from 7.30p.m.
Mail: The Sec., PO Box 100, Seaford, Vic 3198.

SUNBURY MELTON AMSTRAD USER GROUP

Contacts: Wayne Urmston (03 744 2719)
Norma McEntee (03 743 7104)
Venue: Contact above for more details.

WENDOUREE AMSTRAD USER GROUP

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

WESTERN COMPUTER CLUB

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

ACT

CANBERRA AMSTRAD USER'S GROUP

Convenor: Paul Kirby (062 86 5460)
Secretary: Michael Hickey (062 58 5719)
Treasurer: Rod MacKenzie (062 54 7551)
Venue: The Oliphant Building, ANU, Canberra on the first Wednesday of each month from 7.30 pm.
Mail: PO Box 1789, Canberra, ACT 2601.

NEW SOUTH WALES

AM-USER's (North Ryde)

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

BLUE MOUNTAINS AMSTRAD USERS

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

CENTRAL COAST AMSTRAD USERS CLUB

President: Lloyd Mitchell (043 88 2950)
Secretary: Ray Thompson (043 32 9095)
Venue: The Entrance Aquatic Club, Salt Water Reserve, Long Jetty every second Monday at 7.30 p.m. sharp.

COFFS HARBOUR AMSTRAD COMPUTER CLUB

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

FAIRFIELD MICRO USER GROUP

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

HAWKESBURY AMSTRAD USER GROUP

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

ILLAWARRA AMSTRAD USERS CLUB

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

LISMORE DISTRICT AMSTRAD COMPUTER CLUB

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

S & W MILLER AMSTRAD USER'S CLUB

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

MURWILLUMBAH AMSTRAD USERS GROUP

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

NEWCASTLE AMSTRAD USER GROUP

President: John Harwood
Treasurer: Erica Harwood
Secretary: Janet Bowen
Venue: Kotara Public School, Park Avenue, Kotara on the first Tuesday of each month. Contact the above for meeting times.
Mail: PO Box 18, Charlestown, NSW 2290

PCW AUSTRALIA GROUP

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

USER GROUP INFORMATION

PORT MACQUARIE AMSTRAD USERS GROUP
 Mail: Craig Tollis, Box 584, Pt. Macquarie, 2444.

SYDNEY AMSTRAD COMPUTER CLUB
 President: Bob Knowles (02 810 7373)
 Secretary: Reed Walters (02 560 9487)
 Treasurer: Jim Chryst (02 327 7872)
 Venue: Newtown area on the 1st Saturday of every month for a normal club meeting and on the 3rd Saturday for the purposes of programming tutorials only. Both meetings commence at 2.00 p.m. For more details contact the Secretary or Treasurer between 6.00 p.m. and 9 p.m.

SYDNEY PC1512 USER GROUP
 Contact: Geoff Crane (02 76 6467) A/H (02 412 9213) B/H
 Venue: To be arranged; meeting initially on the third Tuesday of each month at 7.00 pm.

QUEENSLAND

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

BUNDBERG AMSTRAD USER'S GROUP
 President: Ray Babbidge (071 72 1223)
 Secretary: Clive Barrett (071 71 3668)
 Treasurer: Sheila Cole (071 72 8884)
 Venue: The third Tuesday of the month. For more details contact the above.
 Mail: PO Box 865, Bundaberg, QLD 4670.

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

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

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

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

HERVEY BAY - MARYBOROUGH AMSTRAD COMPUTER USER GROUP
 President: Ian Jardine (071 28 3688)
 Vice-Pres: Gerhard Schulze
 Sec/Treas: Les Patford (071 28 9737)

Venue: The first Thursday of each month at 7.00 alternating between the Hervey Bay Senior College and Maryborough TAFE College. Contact the above for more details.
 Mail: Les Patford, PO Box 24, Torquay, Q 4657

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

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

PENINSULA AMSTRAD CLUB (amalgamated with BACC)
 President: Ivan Dowling (07 269 8795)
 Treasurer: Keith Johnston (07 203 2339)
 Secretary: Tracie Payne (07 267 6645)
 Venue: Kippa-Ring State School Library, Elizabeth Avenue every third Tuesday of the month at 7.30 pm.

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

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

TOWNSVILLE AMSTRAD USER GROUP
 President: Ian Wallace (077 73 1798)
 Vice Pres: Doug Selmes (077 79 6011 xt 252)
 Treasurer: Chris Nisen (077 79 6299)
 Secretary: Alistair Buckingham (077 73 3955)
 Venue: Science Block of the Kirwan High School in Thuringowa Drive on the first and third Tuesdays each month at 7.30pm.

THE WARWICK AMSTRAD USER GROUP
 President: Mrs. D. Christensen
 Secretary: John Wode (076 61 5176)
 Treasurer: Neville Christensen
 Venue: Warwick Education Centre on the first Saturday of each month from 3.00 p.m.

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

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

TASMANIA

SOUTHERN TASMANIAN AMSTRAD USER CLUB
 President: Frank Self (002 49 5499)
 Secretary: Peter Campbell
 Treasurer: Cindy Campbell

Publ. Off: Danny Brittain (002 47 7070)
 Venue: Elizabeth Matriculation College on the first Wednesday of each month from 7.30 pm.

NORTHERN TASMANIA AMSTRAD COMPUTER CLUB
 President: Russell Lockett (003 44 8972)
 Treasurer: Keith Chapple (003 26 4338)
 Secretary: Shane Crack (003 97 3298)
 Publicity: Michael Watts (003 31 1944)
 Librarian: Patrick Salter (003 97 3379)
 Junior Del: Bobby Lockett (003 44 8972)
 Venue: Launceston Community College (opposite Park Street) in Room 11 on the first Saturday of the month at 5.00 p.m.

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

NEW ZEALAND

THE AMSTRAD COMPUTER CLUB OF CANTERBURY
 Contact: Christine Linfoot 897 413
 Ian Orchard 524 064
 Venue: Four Avenues School, cnr. Madras Street and Edgeware Road, Christchurch 1 on the fourth Wednesday of each month.
 Mail: Box 23.082 Bishopdale, Christchurch, NZ.

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

User Group Contact List

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

NSW			
Nick Rogers	Bogan Gate	(068) 64 1170	
Chris Craven	Canowindra	(063) 44 1150	
Trevor Farrell	Coolah/Mudgee area	(063) 77 1374	
David Higgins	Inverell	(067) 22 1867	
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 Alberry	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.

Gossip from the UK

Printer Peace

Referring to my report to you last month, peace has broken out between Amstrad and Epson following threats of legal action when Amstrad started using the letters 'LQ' in the names of their letter quality printers - a designation that Epson regarded as their own.

In a press release from Amstrad it was announced that "An understanding has been reached" and that both companies will continue to use the LQ designation on their printers.

"Amstrad has always recognised that the printer designation LQ in combination with a number is a designation that has been previously used, is presently used and will in future be used on a range of Epson letter quality printers," say Amstrad.

However, Epson have not insisted the Amstrad cease using the LQ prefix. To demonstrate the new found understanding between the two companies, Amstrad have revealed that they plan to launch the LQ5000 (a wide carriage printer) while Epson will be launching the LQ500 (no relation) at the same time. *(We are not likely to see the LQ5000 until at least the middle of the year. See below - Ed).*

Digital Research launches GEM/3

The developers of the GEM operating system provided with the Amstrad PC range, have announced the development of the new improved version, GEM/3, and appropriately at the same time, Version 2.0 of its wordprocessor, 1st Word Plus was also released.

Gem/3 is a dramatic improvement on its younger brother. DR claim GEM/3 outputs to screen and printer two to four times faster, has simpler installation routines, and is also fully compatible with earlier versions of GEM, including the GEM packaged with Ventura Publisher.

Bitstream's Fontware installation Kit which generates fonts in half point sizes from 6 to 72 point is also supplied with the package.

Fonts such as Dutch and Swiss faces and light serif face Charter are also supplied. Furthermore, 80 additional Bitstream typefaces can be purchased separately. To save memory and disc space, GEM/3 uses a compressed font file.

The only drawback is that GEM/3 will not be sold in shops, it is only offered as

an upgrade from Digital Research at a cost of £50. *(Not sure how it will be handled in Australia - Ed.)*

Digital Research's 1st Word Plus version 2.0 allows the user to include both .IMG and .GEM files in documents, also provides an interactive spelling checker and mailmerge - overshadowing most of the criticisms of version 1.

Pirates Captured

How many times have you walked into a small computer store and saw expensive software at absolute ridiculous prices? When I do, the first thing that runs into my head is, "are they originals or pirates?"

It seems as though Ashton Tate, Apple Computers, Autodesk, Microsoft and Word Perfect think the same. All the above companies were part of a precision operation to stamp out nine Hong Kong piracy syndicates. The "goodies" were more than 60 Hong Kong Customs and Excise inspectors. The "baddies", 10 individuals and a load of phoney manuals and discs including dBase III Plus, Lotus 1-2-3, Word Perfect, MS/DOS plus many more. A rough estimate put the value of the haul at HK\$2 million.

The Chief of the Hong Kong Trading standards Investigation Bureau, Mr John Chen said, "We are very pleased that key American companies are working with us to stop software piracy. We vow to take repeated action to eliminate these illegal operations, and create an even more favourable business environment in Hong Kong."

Amstrad moves in Australia

In his 1986/87 Annual Report, Alan Sugar, Chairman of Amstrad, said that he would "take a personal interest in developments" of overseas markets in an effort to sustain the amazing growth of the company.

It should come as no surprise, but probably will, that Amstrad Pty. Ltd. based in Sydney has already started the planning towards distributing its own products throughout Australia. It is expected that current distributors, Mitsubishi Electric-AWA, will start

running down operations in this area with a view to breaking-off relations with Amstrad around the middle of the year. This could mean a large volume of Amstrad computers, peripherals and, to a lesser extent, software will become available from the Mitsubishi Electric-AWA warehouses as they clear stock - and at attractive prices.

What the change-over also means is that we will have to wait now for the Australian launch of the PCW 9512, the PPC512 and PPC640. There are also a

number of new model printers in the pipeline, including the DMP3160 which was expected to be released within the next couple of months.

With the coming of Amstrad in its own right, we should look forward to many more new models being released in Australia than in the past.

Software from Amstrad, on the other hand, will probably be limited (that's not really their role anyway!), and is likely to concentrate more on the business area.

More from "the annual report"

The increasing importance to Amstrad of serious computers is shown up clearly in the company's annual report. The year 1986/87 has seen the 'business' sector overtake 'leisure' as the most important part of Alan Sugar's empire.

The turnover from the business side which covers PCWs, PCs and printers has leapt from £115m in 1986 to £277m in 1987, working out at 54% of the total turnover. This is despite the fact that 1986/87 was the first year that the leisure side, which covers CPC computers plus all the video and audio products, has included revenue from the takeover of Sinclair and sales of its Spectrum computers. The report also reveals that 43% of the company's business is provided by the UK and just 2.6% from North America. Alan Sugar admitted that America is "a very dangerous market".

In the last four years, Amstrad have almost doubled their sales and profits each year although Sugar warned that "we must realistically accept that we cannot achieve the doubling effect we have experienced in the past." He suggests that if they could achieve the penetration in foreign markets as they have at home, turnover could be boosted five times.

Tantalisingly, while Sugar referred to forthcoming "consolidation and seed planting" he also promised a range of business machines that will penetrate sectors of the market not covered by existing products and "two completely new exciting product areas."

Aussie 'Computing with the Amstrad' ceases

Calls from some worried readers prompted us to phone Tasmania and were told that CWTA (produced under licence from Database Publications in the UK) had ceased. The last magazine to be seen was the December 1987 issue.

We were also told that the publishers were trying to seek an agreement with Database Publications to continue to supply the original English magazine until current subscriptions had expired. This conflicts with a letter issued from Tas. stating that refunds would be made.

NEWS FROM PCS PRESS RELEASES

Sage Multi-user Accounting

PCS, based in Milsons Point, NSW, have announced the release of Sage Multi-user accounting software for IBM compatibles.

It is designed specifically for small business and allows several people to work on the accounting files at once. It enables the company's accounts to be kept up to date in less time and with greater accuracy and have a number of different people producing invoices and making enquiries on the accounts at the same time. The multi-user Accountant costs \$900 and includes Debtors, Creditors and General Ledger.

Multi-user Accountant Plus costs \$1200 and adds Invoicing and Stock Control. Multi-user Financial Controller costs \$2500 and adds Multi company consolidation, Order Entry and Bill of Materials.

Sage Accounts Version 3

PCS have also announced the release of version 3 of Sage Business wise Accounting Software for PCs. The new version includes many new features requested by users.

For example, a complete list of Debtors

or Creditors or General Ledger or Stock codes with their names can be called up on screen at any time in a "window" either automatically - if the wrong code is keyed in - or, by pressing a function key, a list is shown from which the correct code may be selected.

Prior to back-up, data files are scanned to check that all transactions have been posted to correct accounts and no corruption has occurred. It also checks dates and the trial balance.

The package now handles up to five bank accounts for cash allocation and new Debtors Ledger accounts can be created while producing invoices.

Sagenet - networking system

This package allows the small businessman to run Sage's own Business wise multi-user accounting software and other proprietary network packages. It is both simple to install and to use and requires no specialist training. The package features printer sharing, file and data sharing, data transfer, messaging, electronic mail, multi-user accounting, all with password security. A "Starter Pack" comes with all that is necessary to connect 2 PCs.

For more information on any of the above contact Personal Computer Software on (02) 923 2899

What's new from IQ

Lottocheck - this is a new Lotto database and analysis for the PC. The database contains details of all past lotto draws, with updates available free of charge. Included is an evaluation option which lets you test your theories.

Autosketch - is a full function computer aided design package for generating line art. Operates using the mouse through pull-down menus and dialogue boxes. For compatibles with an 8087 or 80287 maths co-processor, an enhanced version of Autosketch (much faster) is available.

Pageability - a desktop publishing package from Migent for PCs, which links directly into Ability-Plus to give a sophisticated graphics based publishing tool.

For more details on the above ring IQ on (03) 222 2288



60
BASIC
PROGRAMS



FOR ALL
AMSTRAD CPC
COMPUTERS



FEATURES
MENUS and
INSTRUCTIONS

SAME DAY
DESPATCH

ENQUIRIES
WELCOME

PUBLIC PACKAGE II

Disc (60 programs)	\$22.95
Package 1 (50 programs)	\$20.95
BOTH (110 programs)	\$38.95

EXTRA! "Fill with Patterns" Utility included with the above. Works on CPC464 with disc drive.

NEW RELEASE: EASY FILE - flexible information storage with FIND, SORT and PRINTOUT. \$24.95 (disc only)

LIVING IMAGE

BOX 409
Elizabeth
S.A., 5112

Fonts

A variety of character fonts in milliseconds

by Petr Lukes

This utility modifies the in-RAM character set to provide additional fonts. The options are regular or italic set: either one can be normal, or thin, or thick, or mixed with or without underlining. The mixed font has thin top and thick bottom and resembles the hi-tech computer character set. These options combined with inverse printing [PRINT CHR\$(24)] can provide quite a variety of screen displays, even in MODE 2.

All this can be (and has been) done in BASIC, but very slowly. This routine can change fonts in real time, the delay (about 63 milliseconds) being hardly noticeable. The selection is made by setting certain bits of the parameter passed to the routine: if bit 7 is set (parameter=128), underline will be selected; setting bit 0 as well (parameter=128+1=129) will also select italics.

The relocatable routine is stored in an integer array, and the address of the start of the character table is passed to it. This is simpler and more flexible than trying to store it at a fixed memory address. I am currently installing it in my home-made wordprocessor, to preview selection of different fonts before the final printing.

```

10 ' Fonts
20 ' LKS 871022
30 ' The Amstrad User Mar(80)
40 '
50 MODE 1:PRINT"Fonts for CPCs LKS 871022"
60 DIM font%(79)
70 FOR a=0 TO 72 STEP 8
80 c=0:FOR b=a TO a+7
90 READ x$,y$:PRINT b,x$,y$
100 font%(b)=VAL("&"+y$+x$)
110 c=c+VAL("&"+x$)+VAL("&"+y$)'check sum
120 NEXT b:READ x$
130 IF VAL("&"+x$)<>c THEN STOP
140 NEXT a
150 DATA fe,01,c0,57,cd,ab,bb,21,ff,ff,e5,11,20,00,cd,ab,0
8f6
160 DATA bb,11,08,20,e1,19,e5,dd,cb,00,46,28,12,11,03,00,0
4ef
170 DATA 0e,5d,cb,3e,06,05,cb,3e,23,10,fb,19,0d,20,f3,dd,0
5cc
180 DATA cb,00,76,28,1e,e1,e5,0e,5d,06,04,7e,cb,3f,ab,77,0
667
190 DATA 23,10,f8,06,03,7e,cb,3f,b6,77,23,10,f8,23,0d,20,0

```

```

564
200 DATA e8,18,2e,dd,cb,00,6e,28,12,e1,e5,11,e8,02,7e,cb,0
788
210 DATA 3f,a6,77,23,1b,7a,b3,20,f5,18,16,dd,cb,00,66,28,0
640
220 DATA 10,e1,e5,11,e8,02,7e,cb,3f,b6,77,23,1b,7a,b3,20,0
711
230 DATA f5,dd,cb,00,7e,28,11,e1,e5,11,08,00,b7,ed,52,1b,0
744
240 DATA 06,5f,19,36,ff,23,10,fa,e1,c9,00,00,00,00,00,00,0
48a
250 SYMBOL AFTER 32:tab1%=UNT(HIMEM+1)
260 font%(4)=tab1%'start of character table
270 ' Demonstration
280 reg=0:ital=1:undr=128:norm=0
290 thik=16:thin=32:thix=64
300 CALL@font%(0),reg:PRINT"This";
310 CALL@font%(0),ital:PRINT" routine ";
320 CALL@font%(0),thik+undr:PRINT"is fast";
330 CALL@font%(0),ital+thix:PRINT" enough to CALL";
340 CALL@font%(0),ital+thin:PRINT" between";
350 CALL@font%(0),thin:PRINT" words"
360 PRINT"Access time:"
370 ti=TIME:CALL@font%(0),ital+thin+undr
380 PRINT TIME-ti/ 300 secs":PRINT
390 y$=" the quick fox jumps over the lazy dog "
400 FOR a=0 TO 1
410 par=a*128'underline
420 FOR b=0 TO 1'regular/italic
430 FOR c=0 TO 3'normal,thick,thin,mixed
440 CALL@font%(0),par+b+2*c*8
450 PRINT y$
460 NEXT c:PRINT
470 NEXT b
480 NEXT a
490 CALL@font%(0),reg:PRINT"Restored to normal"

```

Petr has also supplied the source code assembly listing which has not been published with his article. If anyone would like a copy, please send a stamped and returned addressed envelope of a size of capable of accommodating two A4 sheets, to:

The Amstrad User,
1/245 Springvale Road,
Glen Waverley,
Victoria. 3150.

Educational computing

Past, present and future computer developments
in the classroom environment

from Thomas Lockwood

In a previous article an answer to the question "What can a computer do for me?" was suggested in the form of dBASE II, being a versatile database. I suspect the second rationalization for a home computer purchase would be "It will be educational for the children". In this article, an attempt is made to gain an insight into the applications for personal computers in primary school although the same principles should generally apply to the more advanced study.

Computers have developed rapidly in the last ten years from the introduction of Intel Corps. 8008 microprocessor chip in 1972 for home constructed machines, through the Apple II personal computer in 1977, to today's machines utilizing memory capacities, speed and versatility unimagined such a short time previously. It is not surprising then that the educational community appears to be having some difficulty coming to terms with applying this rapidly advancing technology. The use of computers in schools has long been recognised as a desirable trend by parents and teachers alike but utilizing computers effectively appears to be elusive often due to financial constraints or lack of experienced staff. Since the introduction of the Amstrad computer the capital cost of the electronics is becoming less of a problem for parents and schools alike. The

Amstrad's rugged encased discs providing protection from tiny fingers, ample memory capacity, portability with built in disc drive, 80 column monitor etc. (you know all the features the advertising brochures provide to convince the reluctant partner to make the financial plunge) make an attractive package for schools of all sizes. To understand the current situation a look at the historical development of computing in schools introduces a more detailed look at use.

Historical Overview

The French have shown a firm commitment to school computing since 1970 adopting a centralized style but incorporating computer use as an integral part of studies. This approach called "informatique" is novel in its approach. The number of microcomputers in schools approximates 10,000. Thus in France computer use and languages are being taught as an integral part of using them as a teaching aid.

The patterns adopted in the United States and Britain are more familiar in Australia. The British have implemented their Microelectronics Program since 1980. Organised on a national, regional basis this program aimed to investigate how best to use computers as a teaching aid and to develop new subjects based on new technology. Initially this scheme was intended for Secondary schools but was extended to include Primary schools. Of significant interest in Australia is the British Broadcasting Commissions computer literacy project which has produced the Acorn - BBC computer and the television series "The Computer Program" which screened in Australia nationally on ABC television. The BBC computer being manufactured primarily for education has been adopted by some

Australian schools but price has probably limited its impact. In the United Kingdom the Sinclair Spectrum and the BBC model B are the predominant computers in schools. Across the Atlantic where the personal computer was born, educational material mainly for Apple machines is in use. An early participant in education in the United States was the Minnesota Educational Computer Consortium (MECC) which developed a centralized computing system for the state of Minnesota. Originally based around a large main-frame computer on a time sharing network basis the system evolved to be a standardised software and training centre. Initially only Apple material was available but now much has been converted to other formats including Atari, Commodore, IBM, Radio Shack and BBC. This material is intended to supplement classroom teaching and includes comprehensive documentation with each package.

The development of school computer usage in Australia is fragmented with each State education authority adopting its own standards. Computer awareness developed quickly within Australia and by 1983 the majority of secondary schools had at least one computer. An early starter into educational computing was South Australia establishing the Angle Park Computing Centre in 1968 as a centralized computer agency for government and private schools. Tasmania and Western Australia followed in 1975 and 1977. Some standardization has been achieved between these States with the TASAWA agreement in 1982. The largest populated states have remained independent and development has been on a fragmented basis. The large number of machines used illustrates the lack of co-ordination within Australia.

Machines supported across the spectrum of the marketplace including the Australian manufactured Microbee (which has ironically become the educational standard machine in Sweden). The Amstrad 6128 has quickly established itself as yet another competitor for a place in schools. It is now the recommended computer in South Australian schools providing an economic, self-contained and robust computer.

Computer Applications

A range of computers are now available to Primary School students, but how can they be utilized? It seems there is an intuitive knowledge that new technology must be useful in educating children, but simply having a machine available at school or home does not automatically stimulate any learning. The first obstacle to be overcome is educating the teachers and parents in how best to apply this resource and I suspect there is a natural reluctance by many to comprehend the rapid changes that have taken place, in the last ten years particularly.

As the majority of educators left college without any formal tuition on computers even the teacher or teachers assigned a special responsibility for computing require a thorough understanding of the capabilities and resources at their disposal. As more experience and tutoring is gained in this field the quality of the results achieved must improve. In some cases children familiar with computers from home can have as much understanding of their operation and applications as their teachers. In some cases I would suggest due to a lack of constraint on their imagination they may be capable of visualizing even more applications than their teachers. Although obviously there are many quality teachers able to incorporate computers in their curriculum such skills are currently spread thinly throughout schools.

The computer in a school may be used in three different ways.

The first is as a management tool to assist in the administration of the school. This could make the school office run more efficiently using databases, spreadsheets and wordprocessing capabilities as are well

utilized in business. Other administrative functions may be efficiently done using a computer. Teachers journals can be delivered via the computer connected via a modem to a central computer rather than posting each teacher an individual copy.

In Tasmania a network was developed providing these types of services including resource booking. Called Tasnet the network graded students by monitoring results centrally with the averages constantly updated allowing a comparison for teachers of their students with those across the state. This concept has great advantages for remote schools reducing the students disadvantages and the teachers feelings of isolation. The school computer can assist the teacher generating individual report cards and other administrative tasks providing more free teacher time. This area is well documented for business applications and while many

The computer in a school may be used in three different ways....

- as a management tool.
 - to teach computer science.
 - as a teaching resource.
-

potential opportunities exist in schools these are beyond the scope of this article.

The second use for computers in schools is to teach computer science, that is to study the construction and/or operation of the computer. This area includes learning to program the computer. This subject tends to be taught mainly at Secondary and Tertiary level, although simply by using the machines at Primary level creates a familiarity and confidence which can be developed in later studies. This confidence mainly equates to using the computer as a tool rather than gain any great insight of its operation. At this point it is worth noting that the Amstrad Locomotive Basic is one of the most versatile and complete forms of Basic language available. BBC Basic also rates a mention because of its advantages for educational programming. Again this area of computer science is not ex-

panded further as many specialist books and courses already exist for any one interested to learn more. I believe many recent home computer purchases may have been made in the belief that children with hands on experience will fully grasp the intricacies of computer design and programming despite parents own inability to cope.

The final application of computers in school is as a teaching resource. This is the most significant for primary school teaching. This aspect consists of various different teaching techniques. These include blackboard (where the computer replaces the chalk and blackboard), and drill and practice programming (where the computer tests the student often in a game format). This style of program can be classified as the computer being tutor to the student. The computer may also be used as a tool for complex calculations or wordprocessing or to provide data from a database for evaluation and discussion by students. Several innovative attempts have also been made to use the computer as a tutor where students are required to develop their knowledge and understanding to teach the computer a particular subject about which it has no special knowledge. These three areas of computer aided learning will now be expanded.

The Computer As A Teacher

As experience is gained with computers in schools this role is reducing in importance. Possibly due to the large capital outlay involved with the purchase of computers great pressure existed to utilise them immediately and drill type programs (usually written by programmers not educators) were readily available. Experience has shown that some programs merely do on a computer screen things that can be better done on a blackboard. Scope remains however for detailed animated illustrations done well on the computer, provided they are programmed by a capable programmer and they are relevant to the subject. Drill and practice programs provide a set of exercises usually in a graduated form, often in a game format to test and exercise skills. These programs may have special application as the computer has infinite patience. The pro-

gram will usually be graduated so that with success more difficult levels are attempted or the speed required is increased. These programs however only revise and exercise existing skills, they do not teach anything new. The applicability of these programs varies with each student but generally they are only useful for a very limited time and thus very large numbers of specifically graded programs would be required. The games format presumably provided for student interest is often boring and dull when compared with specific games programs available. Drill programs are therefore not often recommended for schools.

The Computer As A Tool

The computer may be used to teach the skills required to use the computer in the workplace, such as for word processing or data manipulation. This is not particularly relevant at primary level. Simple word processing for example can be utilized to improve students language skills. Programs written specifically for primary children utilise function keys to perform word processing or to record their "show and tell - news" each day. Incidentally studies have revealed that primary children do not require block shift and other sophisticated word processing functions and therefore the program may be much easier to use than a business word processor.

With access to videotext services via a modem and telephone line, various databases can be accessed as a resource material for classroom study. Data from newspapers, agricultural data, economic data and scientific data for example are all available simply by logging on to the database. Database type programs are available on disc also covering specific subjects allowing data to be manipulated and examined, hypothesis to be tested. Teachers must adopt a different role using these resources and explain to students they do not necessarily know all the answers but that together the answers can be found.

The Computer As A Tutee

This area of educating with computers continues to break new ground.

S. Papert, the author of the education

language Logo is an advocate for this approach effectively offering the student a computer with a blank memory but an eagerness to learn. This technique encourages the student to explore their understanding of the subject to "teach" the computer.

Taylor in 1980 explained the benefits of this technique:

"First, because you can't teach what you don't understand, the human tutor will learn what he or she is trying to teach the computer. Second, by trying to realise broad teaching goals through software constructed from the narrow capabilities of computer logic, the human factor of the computer will learn something both about how computers work and how his or her own thinking works. Third, because no expensive predesigned tutor software is necessary, no time is lost searching for such software and no money is spent acquiring it."

Resources Available - Languages

Logo is an example of a language structured to "teach" the computer. The computer may be taught how to draw shapes, make sounds and write poetry for example. The Digital Research Logo provided with the Amstrad unfortunately should perhaps only be called "Lo" as it lacks the "go" of many of the sophisticated commands and properties of other versions of Logo, all of which enhance the program making it more interesting to students. The ability to alter the shape and set the colour of the turtles offer much more scope than the DR. version. Why isn't the excellent sound capability of the Amstrad exploited by this program?

Logo is highly regarded by education authorities. Logo allows the user to define routines (shapes, or sounds etc) which can be simply called by entering the routines name. The structure is such that the student teaches the computer the routine, before it is defined the computer responds with "I don't know how to "<routine>".

Children derive great satisfaction from teaching the computer and witnessing the result. Imagine a sound routine called "shoot", another defined as "explosion", and "rocket", all generating the sound associated. These can be combined to create imaginary scenes,

for example shoot, shoot, explosion, shoot, etc. to the amusement of the operator. Further routines like "delay" accompanying shapes, and movements can then be added extending the student further and further into programming and logical thinking. Logo is proving that young children have capabilities to comprehend and learn concepts much earlier than was previously thought. Logo is well documented elsewhere and is widely used in Australian schools.

As stated earlier the Amstrad Basic is extremely useful combining text and graphics on the screen and being virtually a compilation of the best features of other versions that have gone before. It is widely accepted that Basic is not an easy language for beginners to learn, but being incorporated in ROM (Read Only Memory) in the basic machine, this may provide a useful tool for individuals prepared to put the effort into learning the language and writing programs for custom applications. Generally however, Basic is not recommended for teaching to primary students or for use in programming applications.

Pilot (Programmed Inquiry Learning or Teaching) is a language written to allow a Question and Answer format for use by teachers originally intended for hearing-impaired students. Copilot was developed for microcomputers using just 11 commands but is considered by some to be difficult to use and time consuming to compile worthwhile exercises.

Other versions of programs written to allow teachers to customise to their own requirements include Zennith Education System (ZES). This is a menu driven multi-choice system allowing branching and hints to be added by the teacher as required. Shell Games allows teachers to author true or false type questions simply by entering the data. The program consists of The Match Machine, Professor True and Mr Multiple.

Resources Available - Programs

Many programs have been written with an educational leaning for all microprocessors although games monopolise the commercial software houses attention. From the educational stable many

appear to be nothing more than a token attempt to write drill and practise routines merely so that retailers can offer computers as educational products to interested parents.

Some commercial programs do appear to have merit. Animal, mineral, vegetable and World Wise (Bourne Educational Software) for the Amstrad are computer tutee programs that are good for developing students. Many generic programs exist for other machines, Animal (MEP microprimer pack) for the PET, Apple and BBC and Tree of Knowledge (Acornsoft) for the BBC.

Ask Software produce a number of educational packages including Number Painter for the Amstrad. This is a number drill which offers wide options of speed and level, ranging from extremely slow addition and subtraction through to extremely fast multiplication, division, addition and subtraction. As drill programs go it is extremely useful.

Granny's Garden (4 MAT Educational Software) is a well respected program for the BBC. Essentially an adventure game, used to develop communication and problem solving, this program can take hours to complete while being stimulating and holding the users attention.

Programs developed in the English environment are generally preferred in Australian schools to those written in the United States. Apart from being socially different many American topics covered are inappropriate; American Presidents, States, history and imperial measurements for example.

The Angle Park Computing centre in South Australia have written several programs specifically for the Amstrad. These are available to parents for around \$30 - \$40 with a tutorial. Rambase is a database program. Softword and Easy word are word processors offering easy to use commands via the function keys. Newstime is a classroom news program which supplements "morning news" or "show and tell".

Future Development

There is nothing to suggest that the current rate of change in the computing industry will not continue. So concepts that are prohibitively expensive or

impractical at present will become common place in the future. Robotics already widely used in industry will no doubt be taught in schools to younger children with more applications being economic as the hardware costs tumble. Logo currently may be used to drive a mechanical "turtle" for young children teaching direction and distance on a real plane but future robots may do much more and teach more abstract topics.

With the price of hardware dropping dramatically it is reasonable to assume that this trend will continue enabling almost any household regardless of economic circumstances to have access to a personal computer while schools will have access to much more sophisticated machines. Software is currently on the whole expensive, with good business and professional software being priced at what the market will support. With more competition, and an ever increasing market the economies of scale will undoubtedly erode present software prices allowing wider access to quality software in schools.

CAD/CAM (Computer Aided Design and Computer Aided Manufacturing) is rapidly making inroads into the industry, and like many computer sciences must be considered for formal teaching at high school, but even small children will doubtless benefit from the concept and versatility. It does not seem unreasonable for children to express creativity using industry packages and graphics packages in the future. Who knows the untapped potential that may be exploited by a generation familiar with such techniques at a young age. Likewise, the wave of "Desk Top Publishing" systems incorporating the new Laser Printers may create opportunities for expression not yet fulfilled for young students.

Probably the most exciting educational prospect is the Laser Disc or CD Rom. This consists of a CD Player now common in Hi Fi Systems being used to provide a computer storage device, capable of huge capacity with fast access. The technology exists and with acceptance in the mass market the prices will tumble. Completely new applications will probably follow the acceptance of this form of storage.

Currently they are envisaged as a replacement for the Disc Drive but with 600Mb of data storage they seem to fulfill this requirement too easily, being able to store whole encyclopedias with room to spare on a single disc. Whole program suites for example, word processing with spelling checking dictionary, thesaurus and other related packages still leave enough room to fit every program the home computer owner has on a single disc. For schools this represents a huge resource and with WORM (write once read many) cd-roms already available, the potential exists for customised packages, with possibly a whole year's teaching applications on a single laser disc. CD-ROM is already available using the new small computer standard interface (SCSI - pronounced Scuzzy) which allows up to eight interconnections with a home computer.

Input and output devices will be perfected offering easier access to computing. Speech synthesis will be of great benefit to early spelling development allowing output from the computer in audible form not text. Similarly speech recognition allows children who cannot write or type well access to computing. Wimps (ie. Graphic input techniques using windows, mice, touch screens and light pens) often are not very applicable to text orientated computing. Several new input ideas are appearing which will increase computer user friendliness. One such device has liquid crystal function keys which change as the user progresses through a program to offer the next level of options. These ideas all allow wider use of computers by young inexperienced computer users.

The final frontier being tackled now is Artificial Intelligence where the computer can be programmed to carry out its own development or learning process. This field obviously has wide applications in education as computer and student learn simultaneously.

The computer is now a regular tool in our classrooms like the video audio cassette and projector but has much more potential than is generally being utilized. When combined with future price cutting and development the computer must become an even more significant teaching aid.

Advanced graphics - Part 2

This month Gary Koh finishes with the remaining of the Basic graphics commands and tackles masking

The first command we are going to look at this month is TAG. As you might have guessed TAG are initial letters and stand for Text At Graphics cursor. I wonder how they managed to invent all these clever little names? What this simply does is to make all the characters that are printed go to the graphics cursor. All control codes are not obeyed but are just printed on the screen.

One of the most powerful graphics commands is Origin. Now it doesn't look like much but let me show you what it can do. Normally the Origin (where the screen co-ordinates start) of the screen is in the bottom left hand corner of the screen. To have it like that all the time can be inconvenient. What the Origin command does is to allow you to move the Origin to different places on the screen. Another thing it can do is to define a graphics window.

Normally the graphics window is the size of the entire screen. You can define the size of the graphics window to an area smaller than the entire screen. Anything drawn will not exceed the boundaries of the graphics window. To clear the graphics window you use the CLG command.

Listing 1 gives an example of this. It draws "Hello Everybody" all over the screen and then defines a graphics window in the middle of the screen. It clears the graphics window and then draws a lot of boxes on the screen. As you will see the boxes are confined within the graphics window.

Listing 1

```

100 ' Listing 1
110 ' Example of Graphics window
120 ' by Gary Koh
130 ' The Amstrad User Mar(88)
140 '
145 ' Set up screen
150 INK 0,11:INK 1,26:INK 2,4:INK 3,21:BORDER 11:PEN 1:MOD
E 1
160 FOR a=1 TO 62:PRINT USING"&";"Hello Everybody!";:NEXT
170 PRINT USING"&";"Hello Ev";
180 ORIGIN 100,100,120,520,70,330:CLG 2
190 LOCATE 1,1:PEN 2
195 ' Draw boxes
200 WHILE INKEY$=""
210 MOVE INT(RND*500),INT(RND*400)
220 DRAWR 53,0,INT(RND*4):DRAWR 0,-53:DRAWR -53,0:DRAWR 0,
53
230 FOR delay=1 TO 50:NEXT
240 WEND

```

The last two commands we will be looking at this month are Xpos and Ypos. These are not commands in the real sense but are variables that contain the X,Y co-ordinates of the graphics cursor. There doesn't seem much you can do with these commands but as we will see in a few months they can be very useful.

The first advanced feature of graphics we are going to look at is some wierd thing called "Masking". To understand Masking you need to know what "Logic Gates" are. There are four different types of Logic Gates called And, Or, Xor (pronounced eXclusive OR) and Not. These Logic Gates take two inputs and produce one output (note, the Not gate only has 1 input and output and simply inverts the input). These inputs and outputs are in binary. The Logic Gates each produce an output in a different way. A table of the inputs and outputs of a Logic Gate is called a truth table.

OR	AND	XOR
1 1 = 1	1 1 = 1	1 1 = 0
0 0 = 0	0 0 = 0	0 0 = 0
1 0 = 1	1 0 = 0	1 0 = 1
0 1 = 1	0 1 = 0	0 1 = 1

Figure One

Figure 1 gives you the truth tables for three of the main logic gates. Incidentally the And, Or and Xor gates can be combined with a Not gate to produce three other different gates, Nand, Nor and Xnor (pronounced eXclusive NOR). With these other gates their output is the same as their "cousins" except they are inverted. Logic gates appear in nearly everything that has to do with computing.

Did you know that all the chips in your computer are actually just a collection of Logic Gates embedded in a chip of silicone? Logic Gates are so useful that without them, we wouldn't be able to build computers.

Masking is the process of comparing a series of two inputs (say, two eight bit numbers) using a Logic gate and using the output in some way. In the case of the graphics commands masking a point onto the screen superimposes the colour of the pixel to be plotted onto the colour of the pixel that is on the screen. Masking isn't actually confined to graphics and it isn't actually a feature of graphics but it is still very important to produce certain types of graphics. Listing 2 allows you to

experiment with Masking.

On running the program you are presented with two columns of colours. The left column shows which colour has been assigned to each pen. The right column shows the result of masking a certain colour with the selected graphics masking mode. To select Xor, And or Or modes press 1, 2 or 3 respectively. To decrease the pen number to be masked press < or, and to increase the pen number to be masked press > or.

Listing 2

```

100 ' Listing 2
110 ' Masking Experiment
120 ' by Gary Koh
130 ' The Amstrad User Mar (88)
140 '
150 ' Initialize
160 CALL &BBFF:MODE 0:FOR a=0 TO 15:READ pink:INK a,pink:IN
EXT:PAPER 2:BORDER 2
170 DATA 0,2,3,4,5,6,9,11,13,14,16,18,21,23,25,26
180 CLS:bar#=STRING$(8,143):s=800:SPEED KEY 32,6
190 ' Set up screen display
200 PEN 0:PRINT" MASKING EXPERIMENT"
210 PRINT:PRINT:PEN 1:PRINT"Graphics Mode-"
220 PRINT:PRINT"Ink number-":PRINT
230 PRINT TAB(5);"Normal";SPACE$(3);"Masked"
240 PRINT TAB(5);"Color";SPACE$(4);"Color"
250 FOR a=10 TO 25:LOCATE 1,a:PRINT USING"##";a-10;:PRINT"
-":NEXT
260 mo#="XOR":gramode=1:GOSUB 380
270 GOSUB 400:posi=3:GOSUB 460:GOSUB 420
280 ' Recieve keyboard input
290 a#=UPPER$(INKEY$)
300 IF a#="1"THEN gramode=1:mo#="XOR":GOSUB 380
310 IF a#="2"THEN gramode=2:mo#="AND":GOSUB 380
320 IF a#="3"THEN gramode=3:mo#="OR ":GOSUB 380
330 IF a#="P"THEN GOSUB 420
340 IF (a#="<" OR a#=",".) AND color>0 THEN color=color-1:G
OSUB 400
350 IF (a#=">" OR a#=".") AND color<15 THEN color=color+1:
GOSUB 400
360 GOTO 290
370 ' Subroutines
380 PEN 5:LOCATE 15,4:PRINT mo#:RETURN
390 '
400 PEN 5:LOCATE 12,6:PRINT color:RETURN
410 '
420 posi=12:GOSUB 460:PRINT CHR$(23)CHR$(gramode):TAG
430 FOR a=254 TO 1 STEP -16:PLOT s,s,color:MOVE 384,a:PRIN
T bar#;:NEXT
440 TAGOFF:PRINT CHR$(23)CHR$(0);:RETURN
450 '
460 TAG:lcol=0:FOR a=254 TO 1 STEP -16:PLOT s,s,lcol:MOVE
posi*32,a
470 lcol=lcol+1:PRINT bar#;:NEXT:TAGOFF:RETURN
    
```

Once you have a combination you are satisfied with press P to mask the right column. To use these "graphics modes" (that's what they are called in the user guide and that's what we will be calling them from now on) use the command PRINT CHR\$(23)CHR\$(m) where m is a value between 0 and 3. Graphics mode 0 is the default mode and forces all points plotted onto the screen without masking it. Graphics modes 1-3 are the masking modes.

Masking is used a lot in commercial games that use sprites. The graphics mode that is always used is Xor although the other modes are sometimes used in conjunction with it. The reason for this is a special property of Xor. When you Xor a picture onto the screen and then Xor for the same picture onto the same spot on the screen the original background is restored. This is what makes it so special and important.

The last program for the month, Listing 3, is a demo using everything covered so far. It is a simulation of a city flooding. To start with, it draws clouds, some buildings and rain. To simulate the rain I used ink switching (*there was an excellent article on ink switching in the July 1987 issue of The Amstrad User*). After all the rain has come down a wave starts building up behind the city.

You may have noticed that when the waves move up behind the buildings, the buildings are not wiped out. What happens is this. There are four pens which are the same colour as the buildings. When the wave is masked onto the building the pen colour changes. But since this pen colour is the same colour of the building you don't notice anything strange.

One thing about this program is that it is rather long. To produce graphics of reasonable quality takes up a lot of memory. In order to reduce the size of programs and to speed them up, most of the programs featured from now on will have lengthy multi-statement lines. This will make debugging harder and make the program harder to understand but it is necessary to keep the program's length down.

This is all for this month. Next month we start looking at Machine Code routines and at the Graphics routines in the firmware. In case you don't know what I am talking about, don't worry. All will be explained next month.

GARY'S GRAPHICS GLOSSARY

BINARY - binary is a counting system made up of two digits, 0 and 1's

CHIP - Another name for an Intergrated Circuit.

SPRITE - A smoothly moving graphic that does not wipe out the background of the screen when it passes over it.

Listing 3

```

100 ' Listing 3
110 ' Flooding City Demo
120 ' by Gary Koh
130 ' The Amstrad User Mar (88)
140 '
    
```



```

150 ' Initialize
160 CALL &BBFF: BORDER 11: MODE 0: FOR a=0 TO 15: READ c: INK a
,c: NEXT
170 RANDOMIZE TIME: cc=9
180 ENV 1,4,-1,10,11,-1,7
190 SYMBOL AFTER 248
200 SYMBOL 248,0,0,0,60,126,90,90,126
210 SYMBOL 249,126,90,90,126,126,90,90,126
220 SYMBOL 250,0,0,28,54,31,11,28,119
230 SYMBOL 251,0,60,95,119,253,223,252,215
240 SYMBOL 252,0,24,124,232,112,208,126,251
250 SYMBOL 253,223,245,255,71,2,3,7,0
260 SYMBOL 254,126,251,127,227,190,103,131,0
270 SYMBOL 255,143,250,94,214,252,248,192,0
280 cloud#=CHR$(250)+CHR$(251)+CHR$(252)+STRING$(3,0)+CHR$(
(10)+CHR$(253)+CHR$(254)+CHR$(255)
290 building#=CHR$(248)+STRING$(10,249)
300 DATA 11,20,20,2,26,20,20,2,3,2,11,11,11,11,11
310 ' Set up screen
320 FOR x=1 TO 640 STEP 16: co=INT(RND*7)+9: FOR y=390 TO 92
STEP -6
330 MOVE x,y: DRAW 0,-6,co: co=co+1: IF co=16 THEN co=9
340 NEXT: NEXT
350 LOCATE 1,22: PEN 8: PRINT STRING$(80,143);
360 PEN 4: LOCATE 1,1: PRINT STRING$(20,254)
370 LOCATE 1,8: PRINT CHR$(22)CHR$(1)
380 FOR a=1 TO 20: LOCATE INT(RND*17)+1,INT(RND*4)+1: PRINT
USING"&"; cloud#: NEXT
390 PRINT CHR$(22)CHR$(0): PEN #1,2
400 FOR a=1 TO 20: height=INT(RND*10)+2: WINDOW #1,a,a,22-he
ight,22
410 PRINT #1,USING"&"; LEFT$(building#,height): NEXT
420 ' Produce rain and lightning
430 EVERY 2,1 GOSUB 610: FOR a=1 TO 3200
440 IF RND(1)>.994 THEN INK 4,15: SOUND 1,600,107,15,1,0,2
9: CALL &BD19: INK 4,26
450 NEXT: DI: INK cc,11: FOR x=5 TO 640 STEP 32: FOR y=67 TO 2
59 STEP 16
460 IF TEST(x,y)=0 THEN LOCATE INT(x/32)+1,25-INT(y/16): PR
INT" "
470 NEXT: NEXT
480 ' Create effect of flooding
490 PRINT CHR$(23)CHR$(1)
500 c1=0: FOR a=66 TO 238 STEP 2: MOVE 1,a-2: DRAW 640,0,3: G
OSUB 560: NEXT
510 PRINT CHR$(23)CHR$(0): c1=3: FOR a=236 TO 64 STEP -2: GOS
UB 560: NEXT
520 FOR a=236 TO 64 STEP -2: MOVE 1,a+4: DRAW 640,0,0: GOSUB
560: NEXT
530 MOVE 0,a+2: DRAW 640,0,0: MOVE 0,a+4: DRAW 640,0
540 WHILE INKEY#="" : WEND: END
550 ' Subroutines
560 c=4: MOVE 0,a: GOSUB 580: MOVE 0,a+2: GOSUB 580: RETURN
570 '

```

```

580 WHILE XPOS<640: DRAW INT(RND*40)+20,0,c: IF c=c1 THEN c
=4 ELSE c=c1
590 WEND: RETURN
600
610 cc=cc+1: IF cc=16 THEN INK 15,11: INK 9,2: cc=9: RETURN
620 INK cc-1,11: INK cc,2: RETURN

```


LAST MONTH

Below is part of Figure One which appeared on Page 10.

SCREEN SUM

160*200(pixels)*4(n/b)=128,000
320*200(pixels)*2(n/b)=128,000
640*200(pixels)*1(n/b)=128,000

"n/b" means "number of bits". So, in Mode 1, the number of bits required to store the ink number for each colour is two.



TASMAN SOFTWARE

We all know how good Tasman Software is ...

... but do you know you can get the entire range through your favourite magazine?

	Cass.	Disc.
CPC464, 664 and 6128		
Tascopy (screen copier)	32.95	45.95
Tasdiary (diary, disc only)		45.95
Tasprint (style writer)	32.95	45.95
Tas-spell (spell check, disc only)		56.00
Tasword 464 and 464-D (word processor)	59.40	79.00
Tasword 6128 (word processor)		79.00
Tas-sign 6128 (sign maker, disc only)		89.95
PCW 8256 and 8512		
Tasprint 8000 (style writer)		52.00
Tas-spell 8000 (spell checker)		56.00
Tasword 8000 (word processor)		79.95
Tas-sign 8000 (sign maker)		89.95
PC1512 and 1640		
Tasword PC (word processor)		89.95
Tasprint PC (style writer)		89.95
Tas-spell PC (spell check)		115.00

Ring The Amstrad User on (03) 233 9661 to order

Hot Tips

Programming hints for CPC users

Save space for strange characters on a poster and wend your way to a working Quickshot.

Character continuum

Here are a few more character sets.

```
10 SYMBOL AFTER 1:FOR t=HIMEM TO
HIMEM+(8*255)
20 POKE t,PEEK(t) XOR 255:NEXT
30 CLS:PRINT"The Amstrad User"
```

To get different results replace line 20 with:

```
1: 20 POKE t,PEEK(t) XOR 254:
NEXT
2: 20 POKE t,PEEK(t) XOR 15:
NEXT
```

Try this:

```
10 SYMBOL AFTER 1: FOR t=HIMEM
TO HIMEM+(8*255) STEP 8
20 FOR s=t to t+3: POKE
s,PEEK(s) XOR 255
30 NEXT s,t: CLS: PRINT"The
Amstrad User"
David Hall
```

Wend your way a while

Many programmers neglect the versatility of the WHILE-WEND loop. I have compiled a list of some of its possibilities.

Most of you make use of the fact that the loop will repeat as long as the WHILE statement is true - for example, WHILE INKEY(50) (meaning repeat action until R is pressed): WEND. But if the WHILE statement is already false on

reaching the loop, the program will jump past it - ignoring anything listed between WHILE and WEND. This makes it ideal for certain subroutines such as the following error-trap:

```
10000 flag=1: WHILE INP(&F500)
AND 64
10010 IF flag=1 THEN PRINT CHR$(
7):flag=0
10020 LOCATE 1,1
10030 PRINT "*PRINTER OFF-LINE*"
10040 WEND: RETURN
```

Here, once the error is corrected (by setting the printer on-line), the subroutine will automatically return to the main program. But if the printer is already on-line, lines 10010 to 10030 will be ignored and the trap not activated. The following one-liner demonstrates another use. See how an odd sequence of operations can be run using nested loops and the same jump-past principle:

```
10 a=0: WHILE a>12: WHILE a<>5
AND a<9: PRINT a;"IN": a=a+1:
WEND: PRINT a;"OUT": a=a+1: WEND
```

WHILE and WEND can also be used for the conditionally endless incrimination of variables, for example, a=0: WHILE <statement>: <do something>: a=a+5: WEND. The use of a flag - as in line 10010 above, which sounds like a bell - will allow an operation within the loop to be switched off after one or more passes. Finally, an endless main controlling loop can be set up by the use of NOT: WHILE NOT finished: <rest of loop>: WEND
J.D. Crabtree

Joystick check

I own a Quickshot II Turbo joystick and had problems with it: the letter Z appears on start-up, the computer

won't reset, continuous fire on Elite... I decided to set about the problem using this routine:

```
10 FOR a=&2000 TO &2006: READ
b$: POKE a,VAL("&"+b$): NEXT
20 CALL &2000:LOCATE 1,1:PRINT
BIN$(PEEK(&3000),8):GOTO 20
30 DATA CD,24,BB,32,00,30,C9
```

The program uses a firmware routine which asks for the state of the joystick, that is, whether it is moved up, down, right, left or Fire is pressed. The result (in binary) is printed at the top of the screen.

Run the program without the Turbo connected and you should see eight zeros - this is the result you'll get with an Amstrad-compatible joystick. As soon as the Turbo is plugged in, the sixth zero (from the right) changes to a one - indicating a fault with the joystick. Wagging the joystick causes the five rightmost zeros to change to ones depending on the state: (from right to left) one=up, two=down, three=left, four=right. The fifth zero corresponds to Fire two and the sixth to Fire one. Pressing Fire causes the fifth zero to change, which means the Turbo uses the Fire two as its Fire button.

To fix the Turbo, open up the stick and break the red-wire connection; make sure you insulate the break, reassemble the joystick, run the test program. All the digits should read zero - a properly functioning stick.

If your joystick is playing up, it shouldn't be hard to mend with the aid of the small routine.

D.W. Rostron

Poster printing

This program sends text to the printer, enlarging the text and printing it vertically down the page. Ideal for creating banners or posters. There is one restriction: you may not enter more than 80 characters.

```
10 MODE 2: INPUT"";a$
20 FOR a=0 TO (LEN(a$)*8):FOR b=
1 TO 2
30 FOR c=384 TO 399 STEP 2:t=TES
T(a,c)
40 IF t=0 THEN PRINT#8,SPACE$(10
);
50 IF t=1 THEN PRINT#8,STRING$(1
```



```
0,"@");
60 NEXT: PRINT#8,CHR$(13);CHR$(1
1);:NEXT:NEXT
Paul Bower.
```

Saving space

I have discovered that when copying text (using the copy-cursor method) extra spaces at the end of Basic lines are also accidentally copied. This isn't the only way additional spaces can creep into a Basic listing: during the normal course of programming it is easy to press the spacebar a couple of times before hitting Return.

Each space is an Ascii character and consequently takes up one byte of memory. It is possible to slim your program by taking the following steps: Load your Basic program. Type SYMBOL AFTER 32: SYMBOL 32,255,255,255,255,255,255,255 followed by Return.

List the program. Spaces will be shown as a solid square.

Rewrite the lines with too many spaces and save the program.

Enter SYMBOL 32,0,0,0,0,0,0,0

It depends how many extra spaces you found, but the program should be considerably shorter and will execute faster.

David Marek

Switch screens

The following routine will set the position of the screen memory in ram. You can have two screens in ram at any one time - and switch between them instantly. The high screen starts at &C000 (default) and the low screen at &4000. To use the high screen call &A000; for the lower one call &A006. To load a picture to the high screen use LOAD "filename", &C000 and for the low screen LOAD "filename", &4000.

```
10 DATA 3E,C0,CD,08,BC,C9,3E,40
,CD,08,BC,C9
```

Send your Hot Tips
to:

Hot Tips Editor,
The Amstrad User,
1/245 Springvale Road
Glen Waverley,
Victoria, 3150.

```
20 FOR T=&A000 TO &A00B:READ A$:
POKE T,VAL("&"+A$):NEXT
Stephen Lawson
```

The line exists

As you know, there is an error in Basic 1.0 (on 464 machines), that doesn't allow you to use the bar (|) symbol in a REM statement. Well, after a short hacking session I came up with an answer:

To use the bar in a REM statement that makes part of a listing, do this: one of the first lines must read POKE 32511,201. After typing |, leave a space, then enter the rest of the text. For example:

```
10 POKE 32511,201
20 REM | It works
```

Phil Stockdale

Cursor positioning

Okay, folks, here is a remedy for all the people trying to write the ultimate program in one line. When you edit a line try this:

Control ↑ or Control ← send cursor to start of line

Control ↓ or Control → send cursor to end of line

Big Al

Getting at fractions

I understand that many people are having trouble printing fractions on their printers. If you have an Amstrad DMP 2000 or 3000, this program will let you print them:

```
10 MODE 1: INPUT" Numerator ";a:
INPUT" Denominator ";b
20 c=a+48: d=b+48
30 PRINT #8,CHR$(27);"x";CHR$(1)
;CHR$(27);"S";CHR$(0);
40 PRINT #8,CHR$(c);CHR$(27);"T"
;CHR$(8);CHR$(27);"S";
50 PRINT #8,CHR$(1);CHR$(d)
```

Before running the program, put the printer on-line. To the Numerator prompt type the top part of the fraction (between 0 and 9), and for Denominator the bottom part of the fraction (again between 0 and 9). The fraction will be printed in NLQ (near-letter-quality). It shouldn't prove too difficult to incorporate this into your own listings.

David Giles

Stretch your BUDGET Software

\$10 Tapes

3-D Star Fighter	BMX Simulator
Bobby Bearing	Bomb Scare
Boulderdash	BountyBob strikes back
Brainache	Breakthru
Bugsy	Dan Dare
Dizzy	Firelord
Grand Prix Simulator	Hyperbowl
Inheritance	Kung Fu Master
Macadam Bumper	Mission Jupiter
Necris Dome	Ranarama
Rocky Horror Show	Room Ten
Shadow Skimmer	Shogun
Slapshot	Sorcery
Sport of Kings	Spy vs Spy
Storm	Strangeloop
Superman	Tau Ceti
Terra Cognita	Test Match Cricket
Transmuter	

Regular readers know that this software goes fast - act now to avoid disappointment

\$12 Tapes

American Football	Defcom
Handball	Maradonna
	Nick Faldo's Open

\$15 Tapes

Battle of Britain + Dynamite Dan	
Bruce Lee + Zorro	
Fairlight + Saboteur	
Theatre Europe + Steve Davis' Snooker	
Who Dares Wins II + Spitfire 40	
Activator	Core
Dan Dare II	Max Headroom
Questor	

When ordering Budget titles please give an alternative choice

\$20 Discs

Battle of Britain + Dynamite Dan II	
Magic Clock + Magic Maths	
Fairlight + Saboteur	
Riding Rapids + Nuclear	
Space Ace + Trollie Wallie	
Theatre Europe + Steve Davis Snooker	
Who Dares Wins II + Spitfire 40	
Bruce Lee + Zorro	
Bobby Bearing	Boulderdash
Dan Dare	Firelord
Inheritance	Kung Fu Master
Macadam Bumper	Ranarama
Rocky Horror Show	Room Ten
Shogun	Slapshot
Spy vs Spy	Sydney Affair
Tau Ceti	Test Match Cricket

All prices above include postage

Available while stocks last from:

The Amstrad User,
1/245 Springvale Road
Glen Waverley
Vic. 3150
(03) 233 9661

Bankcard, Mastercard or Visa Accepted

Getting the message across

Kevin Mclean continues his introduction into using VIATEL, the national telephone database

Continuing from our introduction, I thought we would discuss getting your system going. The two main things to consider here are hardware and software. These were talked about in the last issue, so we'll just put them together.

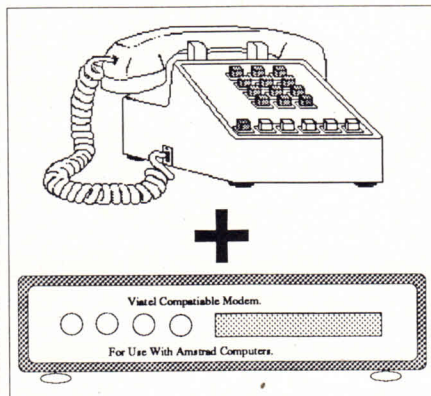
HARDWARE

This is, of course, your Amstrad. We will also need a piece of equipment that will transfer the computer signals so they can be sent down the telephone lines. We need a modem for this. Before connecting a modem you require an RS232 interface. Modems communicate with the computer via an RS232 connection. As you know the Amstrad does not come with an RS232 connection so we require the correct interface. The interface plugs into the expansion slot. A special cable connects between the interface and the modem. After acquiring the correct equipment you are already to go, wrong !!

SOFTWARE

Now having all the required hardware, you need the correct software for the task. The software that comes with the RS232 interface works but seems to have missed the boat in a few places. No matter, using this or your own commercial software you'll have to set up the speed limits we talked about. Viatel uses 1200/75, the 1200 is for incoming info. Now set your modem to the matching speed and switch to Originate on the ORIG/ANS switch (because we are originating the call).

Now we can dial 01955, wait for the high pitched tone and then switch over to connect when ready. Those lucky enough to have better modems can sit back and wait for connection. The two numbers you received when joining Viatel should be close to hand. The long one is your customer number and the short one your password. Enter these at the prompts. Note: some software has auto log-on, which enters these numbers for you. Your password should be changed regularly. Bulletin boards follow the same procedure roughly, if



you are lucky enough to have one nearby. A good way to check if anyone else in the neighborhood is using an Amstrad to communicate is to leave a message on the local board. The major difference between Viatel and BBS is that Viatel uses graphics and colours extensively. If you are going to connect to long distance BBS use a stopwatch and keep a close record in a pad. Later on you will see the benefit of this, when the phone bill comes along.

Back to Viatel. There is an increasing number of Service Providers and I think there will be plenty to interest new users. A major use is to send electronic messages to friends and other computer users, be it Amstrad or otherwise. The prices are reasonable and if you are

lucky enough to have software with upload capabilities you can compose messages off line and upload them.

SPECIALS

For the new user, or anybody for that matter, Viatel has free connection times. These are few and far between so it pays to check on page 3 or "*3" when on-line. Frame charges (top RH corner) still apply to any frames you request. Software is available for down loading but those in the know have not seen fit to put any Amstrad stuff up as yet. If you can find a basic similar to Locomotive you could download that and modify it, but I think it is easier to wait for the right product. It might pay users to put some pressure on Microtex and other sources to put up some Amstrad software.

There is a whole world of info on this database and if the editor allows me to we might explore some of these more closely later on in 1988. Time is of the essence when on-line so it pays to go through the Viatel magazine and work out which services you will look at and their page numbers. Then, go to the service directly by number. If suitably subscribed to Telebank, shopping can be done on Viatel, which would be a boon to those isolated areas. All these services do cost money though and some of these little charges have a nasty habit of building up to big charges, so it pays to be careful.

Just before I finish up I better let you know a couple of things about logging off. The normal way is by typing "***90", failing that I think the Viatel computer won't mind if you use the switch on your modem if you're in hot water. Double check your gear especially your phone. Also the power supply to the RS232 seems to get very warm if left switched on.

YEAR DISC 7

From Issue 33

ANDIGCLK
ADLIST10
AMSMATCH
BOLDCHAR
CPATTS
FUZZY
ITALCHAR
MINIBUG
RANFILE
SCROLLRT
SINEWAVE
STARDODG
THINCHAR
WEEKDAY
WEEKFIX

From Issue 34

579MAGIC
NEUTMAZE
QUIZZ
TEXTGEN
ZYCLOID

From Issue 35

BHPSROL
MISER
RALLY
REACT
RNDXMAS

From Issue 36

BLACK464
BLACK128
CHBYCHR
DEGREES
POUND#
THERAPY
UNSCRAM
VARICAT
WEAVING
XPANDOCF
XPANDPIC

Plus this FREE Basic and CP/M Public Domain Software:

- BAGELS** - A "guess the number game" for kids.
- CHASE** - See if you can out-smart the guards with this game.
- CHOCHIK** - Without getting zapped, try to eat all the worms.
- DIR22** - Extended directory.
- LABELMKR** - Always know what is on your disc with label maker.
- POET** - Sit and watch while your computer creates amusing random poems.
- SUNRISE** - Very accurately calculate at what time the sun will rise.
- TEMPCONV** - Check the temperature in every scale
- TINYPRNT** - Configure your printer to print
IN TINY CHARACTERS
- VFILER** - Similar to Newsweep but easier to use.
- WUMPUS** - A simple text adventure for all ages.

Still only \$25
including postage and packing

Send your order to:

The Amstrad User
1/245 Springvale Road
Glen Waverley, Vic 3150

Credit Card telephone orders taken on (03) 233 9661

LOGO Quizzmaster for CP/M 2.2

by Charles Clarke

This article is the result of our "mini competition" in the November 1987 issue asking 464 owners to produce a version of Logo Quizzmaster for their machines. It wins a copy of "Using Dr Logo on The Amstrad" for Charles Clarke.

I was interested in the 'Logo Quizzmaster' program in the November issue and set about converting it to run under CP/M 2.2 on my 664. I soon discovered that there were in fact two problems. Firstly, to allow for the "words" that are not supported by CP/M 2.2, and secondly, to run the program in a much smaller workspace. My CP/M 2.2 Logo has only 2104 nodes available. The program is much longer than this!

The problem of the words that are not supported was solved by writing procedures to allow them to work as in the CP/M Plus version. Thus there is no need to alter (at this stage!) any of the procedures in Richard Parkes program... except to alter the line in procedure <savload>

```
pr (se [LOGO files on]
defaultd) toread
pr [LOGO files on disc]
```

As it is not possible to change drives under CP/M 2.2 Logo, <defaultd> can simply be omitted.

Procedures to implement all the other exclusively CP/M Plus words are given in the listing, and are explained in the following outlines. This is one of the good features of Logo, it being possible to expand the language by writing new commands. These procedures can be added to any CP/M Plus Logo program containing these primitives to allow them to work under 2.2 Logo.

MEMBERP - a recursive procedure

that outputs TRUE if the first parameter is an element of the second parameter and FALSE if it is not.

PIECE - Outputs part of a word or list, by progressively deleting the parts of the input word or list that are not required.

ROUND - Outputs the integer closest to the number input.

LC and UC - Output the input word in lower case or upper case, by checking the first character to see if its case needs to be changed, changing it if necessary, and moving the character to be the last in the word. The process is then repeated for each character as it becomes the new first character until the old first character is first again. Confused? It's a bit like tunnel ball with people (characters) rotating through from front to back and then returning to where they started.

SHUFFLE - Outputs a list of the randomly shuffled input list. This recursive procedure calls <piece> so needs it to be in the workspace to work.

NAMEP - Though not documented, <namep> is supported with 2.2 Logo, returning TRUE if the input word is a variable that has been defined, and FALSE if it is not. No action is thus needed for <namep> to work.

These procedures would allow the program to work except that it will not fit in the workspace available under CP/M 2.2. There are two ways (at least) of fitting a large program into a small workspace - increase the size of the workspace or reduce the effective size of the program. We will use both strategies.

First, as Richard Parkes suggested, it is possible to delete some unused Logo

primitives. This is worth doing and gains us a substantial number of nodes (ie. memory space). To do this type in the procedure <getnodes> from the listing, save it to disc, and then it can be used by typing <getnodes>. Before loading any other procedures erase procedure <getnodes> by typing <er "getnodes>

Even with the extra nodes from deleting some primitives the program is still too long. The solution is to divide the program up into sections, loading sections from disc only as they are needed. This is where the modular approach used by Richard is a great help in splitting up the program. Each of the five procedures called via the menu (and procedures called by these) form natural groupings. The main procedure and some frequently called procedures form another group, and will be the only ones to be permanently in the workspace. The final group is formed by splitting from the main procedure, <menu>, the first part which prints the menu as this uses a lot of memory space.

The program will be saved as seven files on disc:

QUIZZ - contains the main procedure, now called <quizz> as listed below, and several other procedures - <quizz> <memberp> <tab> <waitfor> and the new one <runof>.

MENU - contains the first part of the old <menu> and <join>.

QUESTION - <question> <mixit> <plot> <answer> <summary> <round> <shuffle> <lc>

SAVLOAD - <savload> <split> <drop> <piece> <uc>

SETUP - <setup> <title> <getques> <getans> <sum>

TITLE - <title>

CHECKIT - <checkit> <verify> <sum> <newqa> <piece>

If some or all of these procedures have previously been typed in and saved they can be loaded and grouped, but read on first as some may require some minor changes

Before each group of procedures is

saved it is important that all variables except those mentioned below are deleted. This can be achieved by typing `<ern glist ".APV>` and ENTER. Typing just `<glist ".APV>` and ENTER will list all variables currently in the workspace.

The only changes necessary for the program to be fitted into the smaller workspace, and to work, are:

- addition of procedure `<runf>`,
- splitting of old procedure `<menu>` into new `<menu>` and `<quizz>`,
- several changes to last part of old `<menu>` ie `<quizz>`,
- saving procedures in groups as detailed.

The sequence to follow for all groupings is the same:

1. Type `<ern glist ".APV or glist ".DEF>` and ENTER. This has the same effect as `<erall>` in CP/M Plus, deleting all variables and procedures from the workspace.

2. Load or type in the procedures for the group as noted above.

3. Delete any unwanted procedures and all variables. This is important because any variables in the workspace are saved and loaded back when the file is loaded, altering any variables of the same name being used in the program.

4. For the QUIZZ grouping type: `make "tt [Start - Select 2 or 3]`

For all others type: `make "fp []` inserting, between the brackets, the names of all the procedures in the group. For the SAVLOAD group it would be

`make "fp [saveload split drop piece uc]`

5. Save the group to disc using the name of the procedure called by `<quizz>` (ie. the group name above) as the filename.

The program can be run by loading the file `<quizz>`, and typing `<quizz>`. All the other files are loaded into the workspace as required by `<quizz>` calling the procedure `<runf>`. `<runf>` loads the file containing the relevant group of procedures and passes control to the major procedure of that group. When control returns to `<quizz>` the group of procedures are deleted, making room for the next group.

It is not necessary to type in the series of `<make>` statements following the `<join>` procedure in November's listing.

It is much easier to select option 3 from the menu and enter the questions and answers as prompted. The variables listed in the `<make>` statements will then automatically be 'made'.

So far I have made a minimum of changes to Richard Parkes' procedures, but the following minor changes are worth doing to improve the way the program runs:

* In `<menu>` change `<300>` to `<700>` to ensure that there is always room to load in the next file of procedures in the 2.2 version.

* In `<getques>` change the line beginning

`if not (lc :a = word..... to begin`

`if not (:a = word.....`

because conversion to lower case is not necessary as long as `<zz>` is entered in lower case, as requested, to end data input and because it causes a long pause with our `<lc>` procedure being slower than the CP/M Plus 'primitive' version.

* In `<checkit>` change the end of the last line from

`.....if :a = "y [savload "s] to`

`.....if :a = "y [make "sav "TRUE]`

* In `<setup>` add between `<make "q9 "q - 1>` and `<end>` type `[Save lesson to disc? (y or n) ta! b l make "a rc if :a = "y [make "sav "! TRUE]`

```
to getnodes
make "a [release fence clean
catch cos .deposit pots ent dot
tt px gprop setpa l env sound ed
paddle * sin error butto np
setpen pprop co seth throw
.examine wait pe window sf fs
keyp numberp tf wr ap .contents
pal pause rl po]
repeat count :a [remprop first
:a ".PRM make "a bf :a]
end
```

```
to quizz
runf [menu] er :fp
label "r
make "a rc
if not memberp :a "12345678 [go
"r]
if :a = "8 [ct stop]
pr :a runf item :a [[question]
[savload "1] [setup 0] [title]
[checkit] [setup 1] [savload
"s]]
er :fp
```

```
if namep "sav [runf [savload "s]
er :fp]
waitfor
quizz
end
```

```
to runf :a
load first :a
ct run :a
end
```

```
to memberp :a :b
if emptyp :b [op "FALSE]
if first :b = :a [op "TRUE] [op
memberp :a bf :b]
end
```

```
to menu
ts if nodes < 700 [pr
[Cleari..... {as in November
listing until}
tab 6 pr [Press (1 to 8)...]
end
```

```
to piece :a :b :c
repeat (count :c) - :b [make "c
bl :c]
repeat :a - 1 [make "c bf :c]
op :c
end
```

```
to uc :a
repeat count :a [if and (ascii
first :a >96) (ascii first :a <
123) [make "a word bf :a char
(ascii first :a) - 32] [make "a
word bf :a first :a]]
op :a
end
```

```
to round :a
op int :a + 0.5
end
```

```
to lc :a
repeat count :a [if and (ascii
first :a > 64) (ascii first :a <
91) [make "a word bf :a char
(ascii first :a) + 32] [make "a
word bf :a first :a]]
op :a
end
```

```
to shuffle :sh
local "a
if count :sh = 1 [op :sh]
make "a 1 + random count :sh
op (se shuffle (se piece 1 :a -
1 :sh piece :a + 1 count :sh
:sh) item :a :sh)
end
```


CPC464, 664 and 6128 Software

GAMES DISCS for CPCs

Activator	30.00
Adventure 4-Pack	32.95
Bobby Bearing	20.00
Boulderdash	20.00
Brian Bloodaxe	20.00
Contraction	25.00
Dan Dare	20.00
Druid	30.00
Firelord	20.00
Future Knight	30.00
Glass	25.00
Inheritance	20.00
Kung Fu Master	20.00
Macadam Bumper	20.00
Nodes of Yesod	25.00
Ranarama	20.00
Rocky Horror Show	20.00
Room Ten	20.00
Saboteur	20.00
Shogun	20.00
Slapshot	20.00
Spy vs Spy	20.00
Starglider (6128 only)	55.00
Super Pipeline II	20.00
Sydney Affair	20.00
Tau Ceti	20.00
Test Match Cricket	20.00
Tomahawk	Due mid March
Trailblazers	30.00

DISC DOUBLES Two games on one disc!

Battle of Britain/ Dynamite Dan II	20.00
Big Top/ Killapede	20.00
Bruce Lee/ Zorro	20.00
Cerberus/ Guzzler	20.00
Fairlight/Saboteur	20.00
Magic Clock/ Magic Maths	20.00
Riding Rapids/ Nuclear	20.00
Space Ace/ Trollie Wally	20.00
Theatre Europe/ Steve Davis Snooker	20.00
Who Dares Wins/ Spitfire 40	20.00

Non-GAMES DISCS for CPCs

GENNY -	
Genealogical Database	
(Disc only)	119.00
Junior Wordpro	
(Child's wordproc.)	34.95
Masterfile III	109.00
Mini Office II	59.00
Rampak - nearly fifty	
mach/code subroutines	44.95

GAMES TAPES for CPCs

3-D Starfighter	10.00
Activator	15.00
Adventure 4-Pack	27.95
Aftershock	20.00
American Football	12.00
The Animator	30.00
BMX Simulator	10.00
Bobby Bearing	10.00
Bomb Scare	10.00
Booty	10.00
Boulderdash	10.00
Bounty Bob strikes bk	10.00
Brainache	10.00
Breakthru	10.00
Bugsy	10.00
Core	15.00
Dan Dare I	10.00
Dan Dare II	15.00
Defcom	12.00
Dizzy	10.00
Dr. Who	
- Terror in Mines	20.00
Druid	20.00
Dynamite Dan II	15.00
Firelord	10.00
Future Knight	15.00
Grand Prix Simulator	10.00
Handball Maradonna	12.00
Hyperbowl	10.00
Inheritance	10.00
Kung Fu Master	10.00
Macadam Bumper	10.00
Max Headroom	15.00
Mission Jupiter	10.00
Necris Dome	10.00

Nick Faldo's Open	12.00
Ranarama	10.00
Rocky Horror Show	10.00
Room Ten	10.00
Shadow Skimmer	10.00
Shogun	10.00
Slapshot	10.00
Sorcery	10.00
Sport of Kings	10.00
Spy vs Spy	10.00
Storm	10.00
Strangeloop	10.00
Superman	10.00
Tau Ceti	10.00
Terra Cognita	10.00
Test Match Cricket	10.00
Trailblazers	20.00
Transmuter	10.00
Questor	15.00

TAPE DOUBLES Two games on one tape!

Battle of Britain/ Dynamite Dan II	15.00
Bruce Lee/ Zorro	15.00
Fairlight/Saboteur	15.00
Theatre Europe/ Steve Davis Snooker	15.00
Who Dares Wins/ Spitfire 40	15.00

JUST ARRIVED

TETRIS - hailed as one of the all-time computer classics and unbelievably addictive by Zzap magazine, this is the first ever computer game to come out of Russia. It's an abstract puzzle game, where the player must arrange a series of falling blocks so as to make them form a complete line. The immense appeal of Tetris lies in the challenge posed to quick thought and concentration.

You won't believe it 'til you play it!
TAPE: \$29.99 DISC: \$34.99

Gary Lineker's		
Superstar Soccer	29.95	44.95
Gauntlet II	29.95	44.95
Head over Heels	29.95	44.95
Indiana Jones	29.95	44.95
Mag Max	39.95	49.95
Mask II	no tape	44.95
Road Runner	29.95	44.95
Ten Great Gremlin		
Games	39.95	no disc
They sold a million III	49.95	59.95

Non-GAMES TAPES for CPCs

Junior Wordpro	
(Child's wordproc.)	29.95
Mini Office II	49.00
Rampak - nearly fifty	
mach/code subroutines	37.95

JOYSTICK

TURBO Joystick is a newly designed joystick compatible with all Amstrad CPCs (and PCWs with an interface) along with Commodore 64/128, Vic 20, Atari XE, XL and games consoles, MSX and Spectrum. It features six high performance micro-switches, 2 fire buttons with 'normal' or 'quick' speed selection, suction feet, a solid steel breakage resistant shaft, a very fast response trigger and a see-through base revealing the circuitry.

Price incl. postage \$34.99

DISC DRIVES

Amstrad DDI-1 plus interface to suit a CPC464	399.00
Amstrad FD-1 second drive to suit 464/664 or 6128	349.00
CL-1: cable required for 664 or 6128	25.00

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.

Prices on some items may change due to fluctuations in the dollar value against sterling. Sorry, but it's out of our control! You would be wise to check with us first on availability and price.

ALL PRICES INCLUDE POSTAGE

ALL PRICES INCLUDE POSTAGE

Available from The Amstrad User while stocks last

Personal Property

Dr. Logo has interesting ways of storing data - including a complete built-in database.

If you've done any BASIC programming you probably know what variables are. You do? Good, well forget all that because Logo has a totally different approach to storing data. There's not much difference between numbers and letters, there are no arrays, and the most important way of storing data is by using 'lists'.

A list of items in Logo is just what it sounds like - a collection of any number of Logo data items written down one after the other. A list is always enclosed in square brackets, and it can be assigned to a variable in the normal way:

```
make "mass_murderers [Crippen Ripper Manson Kray]
```

Lists are the most important way of storing data in Logo, and therefore the most important things to know about lists are how to get items into and out of lists. To get hold of the first item of a list, use the primitive first:

```
pr first :mass_murderers
```

will print out 'Crippen' on the screen. last, used in the same way, would print out 'Kray'. You can get to a particular item if you know its position in the list:

```
pr item 3 :mass_murderers
```

will print out 'Manson' - the third item in the list. Using 'item' to extract a specific item from the list means that in some ways you can treat simple lists as corresponding to arrays in BASIC. count is useful too - it tells you how long a list is:

```
pr count :mass_murderers
```

will produce 4 in reply.

Lists are also known as 'sentences' by Logo, which accounts for the otherwise obscure name of the primitive to make several items into a list, 'se':

```
(se "Bambi "Dumbo "Bimbo) produces [Bambi Dumbo Bimbo]
```

```
(se "Bambi [Dumbo Bimbo]) does the same
(se [Bambi Dumbo] :mass_murderers) produces the
combination of [Bambi Dumbo Crippen Ripper Manson
Kray]
```

There is no inverse of the 'item' command, you can't insert a word at an arbitrarily position in a list. You can only put things at the start or end of a list, or join two lists together.

List within lists

This is all very well, but sequential lists of one name after another aren't terribly useful. Where things start to get really exciting is when you realise that the items in a list can be lists themselves.

For example, suppose you are building a car and you want to categorise and subdivide all the different parts into their components for stock control purposes.

```
car=wheels(4), engine(1), chassis(1)
engine=exhaust pipe(1), drive shaft(1), cylinders(6)
cylinder=case(1), gasket(1), spark plug(1), piston(1)
```

The best way to represent a set of 4 wheels is with the two-element list [wheels4], ie. item name then quantity. You could describe the car by the list

```
[ [wheels 4] [engine 1] [chassis 1] ]
```

Listing One

```
to print_whole :wotsit1 :number1
  (local "part "rest)
  if (or (empty :wotsit1) (not listp :wotsit1)) [stop]
  make "part (first :wotsit1)
  make "rest (bf :wotsit1)
  print_part :part :number1
  print_whole :rest :number1
end
```

```
to print_part :wotsit2 :number2
  (local "name "qty)
  make "name (first :wotsit2)
  make "qty (last :wotsit2) * :number2
  if (empty (thing :name)) [pr (se :qty :name)]
  print_whole (thing :name) :qty
end
```

```
make "car [[wheels 4] [engine 1] [chassis 1] ]
make "engine [[exhaust_pipe 1] [drive_shaft 1]
  [cylinder 6]]
make "cylinder [[cylinder_case 1] [gasket 1]
  [spark_plug 1] [piston 1]]
```

```
make "gasket []
make "chassis []
make "spark_plug []
make "piston []
make "cylinder_case []
make "exhaust_pipe []
make "drive_shaft []
make "wheels []
```


The wheels and chassis are parts in their own right, but the engine is subdivided into more constituent parts which are held as another list

```
[ [exhaust_pipe 1] [drive_shaft 1]
  [cylinder 6] ]
```

and the cylinder is itself described by another list.

The challenge is to write some Logo procedures that will be able to read this list-of-lists and work out what belongs to what. Start Logo up and type in Listing One.

'print_whole' is a program which will take the three lists of parts for car, engine and cylinder and will work down the list printing out all the individual parts for the car. You tell it how many cars you want to make and it tells you how many of each part to order. For example, `print_whole :car 3` tots up the components for 3 of everything in the car list.

This is where the business of recursion rears its head again. The essence of programming with lists is that you write a procedure to handle a simple list, and if you are faced with a more complex list then you break it down into simpler ones and call use the same procedure on those lists, repeating until the lists are simple enough to deal with.

Every part of the car is either a basic component (like a wheel) or is made up of other components (like the engine). The basic parts are stored as variables whose value is [], a list with no items in it. The compound components are lists of pairs of basic components and their quantities.

'print_part' takes a simple list like [wheels 4] and prints on the screen '4 wheels'. It takes a number as well, the number of copies you asked for, so if you wanted 3 cars '12 wheels' comes out instead.

'print_whole' takes a list of the form [[ab][cd][ef]...] as its first argument. It takes the first pair in the list, [ab], and passes it to 'print_part' for printing together with the number of them required, and then takes the rest of the list (bf :car means 'all but the first' of :car) [[cd][ef]...] and recursively calls itself with that. When the whole object has been fully described 'print_whole' finds it is being passed an empty list to print so it knows it is time to stop.

If you are confused by the flow of control try running the program with trace on to see how the different procedure calls act.

A couple of points need clarifying: first, because the procedures are recursive the variables they use ("first", "rest", "name", "qty") must be declared to be 'local' otherwise future calls of the procedure will alter the values unwittingly.

The primitive `thing` is vital to this program (its name

implies it was probably a very late afterthought to the Logo designers). If you have a variable `fred` whose value is 123, say, and a variable `bill` whose value is "fred, then `thing :bill` will give you 123. `thing` works out the contents of the contents. Thus, in the car example, given the list [engine 1] meaning there is 1 engine, `first [engine 1]` gives you engine, so `thing (first [engine 1])` gives you the actual list of the components held in the variable engine and allows you to get to the next link in the chain.

One small primitive not used before is `empty`. 'empty' is a test which either returns true or false; if it is given an empty list it returns true, otherwise false. It is therefore useful for testing to see whether the end of the chain has been reached.

The virtue of lists is that you can go on making them bigger and bigger as your program collects more data (compare this to BASIC where the size of the array has to be fixed before you run the program). The disadvantage of lists over arrays is that lists are sequential access rather than random access and so tend to be slower to use in programs.

The Logo database

One idea that Logo has that really distinguishes it from most other languages is having a built-in database. Essentially you can type in a set of facts in any order you like, without having to worry about setting up variables and all that stuff, and Logo can keep them in the right categories and print out summaries for you.

The database revolves around the idea of 'property lists'. Any Logo name can have a list of properties associated with it; for instance you might associate with someone's name a list of their marital status, number of kids, inside leg measurement and so on.

Listing Two is a list of facts that an unscrupulous terrorist out to undermine the very infrastructure of the free world might collate. Type it in to Logo.

Listing Two

```
pprop "Thatcher "favourite_colour "puce
pprop "Thatcher "politics "right_wing
pprop "Thatcher "age "60
pprop "Reagan "favourite_colour "turquoise
pprop "Reagan "politics "right_wing
pprop "Reagan "age "95
pprop "Liberals_SDP "politics "don't know
```

If you now type `pps` (for 'property pairs'), Logo will parrot all these back to you in canned English such as "Thatcher's favourite_colour is puce". All Logo is doing is printing out the first name followed by 's, the name of the property, "is", and the value. You can get extraordinarily silly sentences coming out of Logo: `pprop "table "legs "4` (meaning a table has 4 legs) followed by `pps` will reveal that "table's legs is 4".

As well as printing out the whole property list database you can also print out a specific individual's property list, get the value of a particular property or delete it.

`plist "Reagan` will print out all the facts about Ronnie

Sneaky editing

When you type save "filename in Logo it writes everything in its memory to a file called 'filename.log'. If you have a text editor like Protext (the PCW's standard RPED editor will do) you can edit this file directly as it is simple text. This way you can remove unwanted facts that are cluttering up the database.

that Logo knows about . It comes out in a terser form than pps produces [politics right_wing favourite_colour turquoise age 95]. You can see how the information is stored - a simple list of property names followed by values. Although not very good English this has the advantage that it is a proper Logo list structure so you could assign it to a variable by make "Reaganlist (plist "Reagan) and then use Logo's list dissection commands to extract the information and take suitable action.

glist complements plist - it prints out a list of all names that have a certain property defined. So glist "age prints out [Reagan Thatcher] but excludes Liberals_SDP.

gprop will get a specific named property from an individual: gprop "Reagan "age will unearth Reagan's age and print 95 out. remprop completes the set and will remove a property from a list. remprop "Reagan "age will do what the CIA have failed to do for the last seven years and delete his age from the records.

You can save the contents of the Logo database just like any other Logo definitions. Typing save filename ('filename' can be anything you like) will cause the entire database contents to be written to the disc file specified. load filename in a subsequent session will restore the data you created.

p's and q's

It is a convention that primitives which test whether a condition is true end in 'p'. Thus emptyp tests whether a list is empty, listp tests whether a variable is a list. The 'p' stands for 'predicate', if that helps you. Programmers in cafes who want to share a bowl of soup often ask, "Split-p soup?"

This article concludes our introduction to the Logo language and commands.

If you want to learn more about practical Logo programming your best bet is to buy a book. Unfortunately, there are lamentably few books specifically on Dr. Logo on the Amstrad. Three titles from Martin Sims, are Logo Pocketbook (a reference guide only) and Using DR Logo on the Amstrad (a fuller tutorial). These only cover the turtle graphics side of Logo and stop short of the 'property list' commands. For more practical applications 'Practical Logo on the Amstrad' could be useful. All these books are available from The Amstrad User, at \$17.95, \$37.95 and \$27.95 respectively.

Scanning pages for a Desk Top Publishing accessory?

Start scanning with Master Pack - an optical scanner with graphics program for PCW owners with: Desktop Publisher Fleet Street Editor Newsdesk International

Now available, post free, from The Amstrad User.

\$279.00
will let you capture illustrations and your imagination!

Assembly Language Programming

The first steps described by Helen Bradley

Have you ever wanted to try some machine code or assembly language programming but you don't know where to start? Have you found that any books on the subject seem designed to confuse rather than to teach? Well, if you have - then look no further, here is a step by step procedure to get you started and to help you write your first assembly language program.

The program that we will produce is a simple one to set up the printer to print elite text and bold type though I'll show you how to change it to set up the printer whichever way you like. Before we get to the assembly language part if you are serious about learning assembly language you will need some tools to automate things a bit. I suggest you find yourself a new blank disc and format it for use in drive A. Then you should PIP onto this disc the following files from side 2 of your Locoscript disc:

```
BASIC.COM
DIR.COM *
ERASE.COM *
J14CPM3.EMS (or your CP/M equivalent)
PIP.COM
RPED.BAS
RPED.SUB
SETDEF.COM
SHOW.COM *
SUBMIT.COM
TYPE.COM *
```

and these files from side 1 of your CP/M Plus programming utilities:

```
HEXCOM.COM
MAC.COM
```

The files marked with an asterisk are not essential but I find them all useful at sometime during an assembly session and it is easier to put them there in the first place rather than to go chasing them if they are needed later.

I have then set up for myself two submit files on this disc. The first is called PROFILE.SUB which you will recall is a special type of submit file and which is run every time you load CP/M. My PROFILE.SUB file is shown in the next column.

PROFILE.SUB

```
setdef m:,* [order = (sub,com)
                                temporary = m:]

pip
<m:=dir.com[o]
<m:=erase.com[o]
<m:=pip.com[o]
<m:=show.com[o]
<m:=submit.com[o]
<m:=type.com[o]
<m:=basic.com[o]
<m:=rped.bas[o]
<m:=rped.sub[o]
<m:=mac.com[o]
<m:=hexcom.com[o]
<m:=asm.sub[o]
<
m:
```

You can create this yourself by using RPED and typing it exactly as shown here. Just put it on the disc with the other files and call it PROFILE.SUB. PROFILE.SUB moves the files I use each time I program into drive M as they work faster there and I can then put my assembly files on another disc in drive A (or the reverse side of this disc). Now to the second submit file. This one I call ASM.SUB and it looks like this:

```
MAC $1 $$AA PM HM SX
HEXCOM $1
$1
```

What this submit file does is to automate the assembly process. Step-by-step it uses the copy of MAC on drive M to assemble your program which it knows to find on drive A (AA tells it to find the file to assemble on drive A). The MACRO assembler produces three output files (which I get written to drive M or the console as they take up a lot of space if you send them to drive A and in the beginning they are not a lot of use).

The three files it produces are a .PRN file which shows both your code and also a hexadecimal representation of it (the parameter PM sends the PRN file to drive M), a .SYM file showing a sorted list of symbols used in the program

(assembling using the parameter SX sends the .SYM file to the console 'drive X' being the console) and the .HEX file which contains the hexadecimal object code (here sent to drive M by the parameter HM). Don't worry if this is a little confusing - it is not vital for you to understand fully what is going on.

The second line of this file uses HEXCOM.COM to generate a command file from the file which was produced with the .HEX filetype. The last line actually executes your new command file. The \$! sign throughout the file simply stands for the file name that you type in at the keyboard for example the file that you are going to create in a minute will be called PRINTSET.ASM (any file that is to be assembled must have a filetype .ASM) so to assemble it using this submit file you should simply ensure that PRINTSET.ASM is on drive A and you have set up and booted CP/M using the PROFILE.SUB file shown earlier and then type:

```
ASM PRINTSET <RETURN>
```

The submit file substitutes PRINTSET everywhere the \$!

sign appears so this submit file can be used to assemble any file that you want to by typing ASM <filename>. Note you should only type the file name not its extension (.ASM) as the extension is assumed and the drive too is specified in the submit file so you should not type that either.

Well now, down to business, the text of the assembly language program to set up the printer is shown below.

You will note that my comments are prefaced by a semicolon so that the assembler will ignore them, I suggest that you make it a point to sprinkle your source code liberally with comment lines as code is very hard to debug at the best of times with them in and often next to impossible without them. This program must be produced in ASCII format so, like the submit files, if you want to use Locoscript to produce them then you will have to first use the 'create ASCII document' function to transfer them into this format before you use them in the CP/M environment.

The alternative is, of course, to use RPED and you will note that I have included both BASIC and the two RPED files on my disc as I use the text editor to create my source code (.ASM) files. RPED not only automatically creates ASCII files

Text of Assembly Language Program to set up printer

```
; printset.asm
; by Helen Bradley, November, 1987.
; use of CP/M function no. 5
; to send printer codes to lineprinter
; you can use this to send as many codes as are
; required but last two bytes must be
; 0dh and '*' (in that order)
;
                org 100h                ; assemble at 100h
                lxi sp,stack            ; set up program stack
                lxi h,pcodes            ; point HL register to printer codes
start          mov e,m                  ; move first code to reg E
                push h                  ; save program data
                mvi c,5                  ; put required function no in register C
                call 5                  ; call to bdos
                pop h                   ; recall program data
                inx h                   ; increase pointer to address of next code
                mov a,m                 ; move next code to register A
                cpi '*'                 ; compare it to '*'
                jz 0000                 ; reboot if it is the same
                jmp start               ; go to 'start' and do it again if not
pcodes        db 1bh,40h                ; reset printer defaults
                db 1bh,51h,50h          ; right margin at 80
                db 1bh,52h,00h          ; US character set
                db 1bh,4dh              ; elite text (12 pitch)
                db 1bh,58h              ; zero with a slash
                db 1bh,45h,0dh          ; bold type
                db '*'
                ds 10h

stack
end
```


but as it runs from within CP/M you will have a lot less changing of discs while you are writing and assembling short files (later on you may need another CP/M text editor when you get beyond RPED's 200 line limit). As few programmers ever get things right the first time being able to run your text editor and your assembler from the same environment is a big plus.

Now check that you have saved your PROFILE.SUB file onto your assembler disc and that the submit file ASM.SUB and your assembly code file PRINTSET.ASM are there too and then re-boot the disc by pressing <SHIFT> <EXTRA> & <EXIT> keys all at once. CP/M will then be automatically loaded and the files that you are most likely to need will be transferred to drive M. Then when this is complete you are ready to assemble your program. Type from the M> prompt ASM PRINTSET <RETURN> and then you should see something like this:

```
M>MAC PRINTSET $AA PM HM SX
CP/M MACRO ASSEM 2.0
0138
0118 PCODES 0138 STACK 0106 START
000H USE FACTOR
END OF ASSEMBLY
M>HEXCOM PRINTSET
HEXCOM VERS: 3.00
```

```
FIRST ADDRESS 0100
LAST ADDRESS 0127
BYTES READ 0028
RECORDS WRITTEN 01
```

```
M>PRINTSET
```

If your output doesn't look like this then, most likely something has gone wrong so go back and recheck your typing as this is sure to be the problem. If all is OK and it has assembled correctly then you should have a file called PRINTSET.COM on drive M. Before you forget it PIP it back to drive A for safety. Then test the printer by typing a line or two to it using either <ALT>P and typing in at the keyboard or the PIP function PIP LST:=CON: which echoes the console output to the printer until you type ≠Z (<ALT> Z).

I use this program (PRINTSET.COM) everytime I program in BASIC as I find the CP/M printer defaults give me awful looking printouts without it. This, though, is by no means the sole use for it and I'm sure that you will find it a handy program and not simply a lesson in assembly language programming. So long as the last two codes are 0dh and 0ah you can put as many codes in as you like (see pages 126ff of the CP/M section of your manual for the codes). Remember if you are using letters they must either be in hexadecimal notation or be in between single inverted commas eg 'H', 'X' and all hex numbers must end with an 'h' eg 04h, 5fh etc..

As all assembled files are .COM files they run automatically from the CP/M prompt so if you want to use your new printer setup file to set up the printer before using BASIC then you can copy (PIP) the file to your BASIC disc and

then to use it before you use basic by simply typing PRINTSET and it will execute, reset the printer for you and return you to CP/M in next to no time.

I haven't explained to you much about assembly language programming as its complexities are well beyond the scope of this article but I will explain to you that the Amstrad PCW8256 and 8512 use a Z80 chip which has been around for ages (in computer terms) but which is still quite a popular chip for 8 bit micros. The CP/M assembler provided free with the machine (MAC.COM) assembles 8080 op codes which are a subset of the Z80 codes - the op codes for the latter being more numerous. However any assembled 8080 code should run without any problem on the Z80 machine.

If you are looking for books to teach you assembly language programming and this is the best way to learn then you should look for those based on the 8080 op codes as your assembler will not assemble the Z80 mnemonics. Otherwise get yourself a copy of a cross-reference of the Z80 codes and the 8080 ones so you can do the translations yourself. If you are keen you could also obtain a Z80 assembler so that you can use Z80 op codes and if you want to do this keep an eye out as Z80 assemblers are available through public domain sources - mine cost me only \$20.00 or so.

As a parting gesture I recommend to you most highly the book "Introduction to CP/M Assembly Language" by Jon Lindsay and which is available through this magazine. (*Regrettably, we are out of stock of this American title and, as yet, have not been able to get any more copies. Readers may wish to try themselves so will want to know that it is published by Hayden Book Company of New Jersey and the ISBN is 0-8104-5210-3*). In my opinion it leaves all the other available texts for dead as a simple no nonsense starter text. If you keep going you will, of course, need more information of a technical nature but this book should keep you going long enough to give you a taste for assembly language programming without frightening you off with technical jargon and leaving you disillusioned before you have even started.

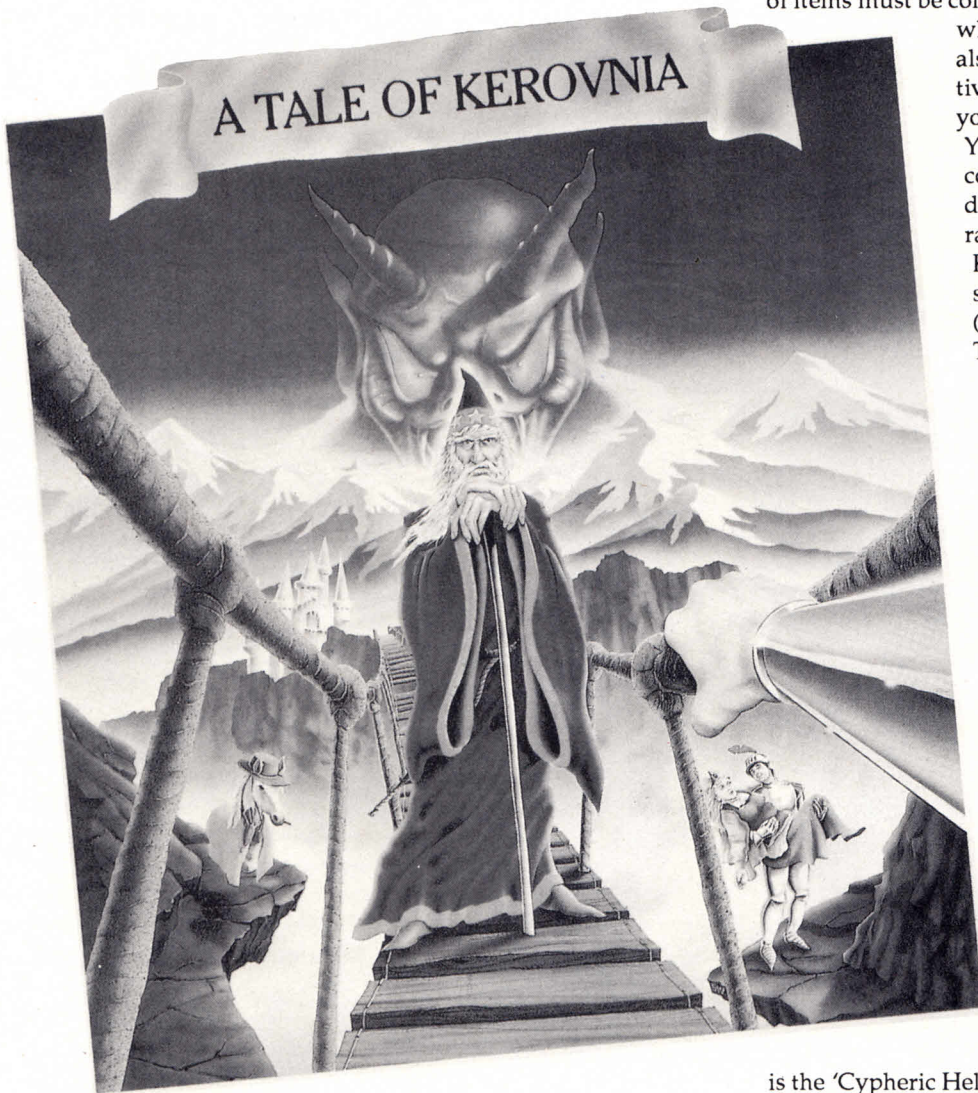
Best of luck and happy and successful computing.

**Watch The Amstrad User
next month for details of a
new book called
"Amstrad PCW
Assembly Language
Course".**

The Pawn

An adventure from Rainbird
by Magnetic Scrolls

A TALE OF KEROVNIA



This game lives up to the reputation it has acquired in its previous incarnations.

Having been bonked on the head by a mysterious figure in a white coat, you wake up in the enchanting world of Kerovnia ruled by the unpopular and indecisive King Erik. Now this is no ordinary Kingdom, of course, primarily because its almost exclusive industry is the manufacture of alcoholic beverages, most notably, Farthington Real Ale (how amazingly original: yet another flatulence joke!).

You start the game at the end of a violent power struggle between the Farthington Real Ale Company, the Romni gnomes (producers of spring water) and the Roobikyoub dwarves, who just happen to be producers of the finest malt whiskey this side of paradise.

The object of the game is to escape from Kerovnia. But before you can do that you must remove the singing wristband that refuses to relinquish its hold on your wrist. As you progress through Kerovnia's magical locations - whether cave, mountain, ice tower, forest or golden palace - a variety of items must be collected. These include, of all things, a

wheelbarrow. The shirt on your back is also an invaluable asset and, used imaginatively together with other items, can get you through a number of obstacles.

You must also deal with a host of colourful characters; including a Buddhist monk who can't stop laughing, a rather glum snowman, the evil wizard Kronos and the Adventurer who rides, somewhat ambiguously, a legless horse (too much Farthington Ale no doubt!). These are very interactive and can provide you with information about the purpose of your mission and how you might succeed.

The location, score and number of moves are detailed along the top of the screen. Below this is the graphics window which can be turned on and off or even scrolled upwards. There are thirty illustrations in all, of varying quality.

The text is clearly written and can be read in 'brief' or 'verbose' mode so that you don't have to repeatedly read scene descriptions that have become familiar to you. Most importantly, however, the program is capable of handling very lengthy commands. (For example 'Lift mat then get wooden key and metal key then unlock door with metal key open door enter shed and then get hoe and rake..').

This package comes with a novella which is a useful reference when playing the game. Particularly helpful

is the 'Cypheric Help Section' which appends the novella. This gives you 'encrypted' messages which can be keyed into the program to help you through any sticky patches you might encounter.

The Pawn is an excellent piece of adventureship. If you don't find it compelling, addictive and all that an adventure should be, there's something wrong with you!

The Amstrad User had a limited number of copies for both the PCW and PC at the time of going to press (1/2/88). If you are having trouble getting one, give us a ring on (03) 233 9661 and we will see what we can do for you.

PACTRONICS "PROFESSIONAL" P.C.W

IT'S HERE!!

The **MINI OFFICE PROFESSIONAL** - the **ONLY** suite of business programs designed especially for the PCW.

WORD PROCESSOR

Faster than LocoScript 2

- hold files up to 336K long in memory (80K on 8256).
- WYSIWYG option (even double size characters on screen).
- add headers, footers, page nos.
- import names etc. from Database.

SPREADSHEET

Bigger than SuperCalc 2

- calculations up to 320K in size.
- copy formulae absolutely and relatively.
- re-calculate automatically.
- print out in draft - quality or condensed type (even print sideways if necessary).
- maximum of 255 columns, 255 rows.
- super fast updating.

DATABASE

Friendlier than dBASE II

- enter up to 255 fields with up to 576 characters.
- print out reports or labels using powerful printing features.
- perform totals or other calculations on fields.
- design screen layout anyway you like with a range of type styles.

GRAPHICS

Smarter than DR Graph

- draw pie/bar chart and line graphs.
- text in a wide range of styles w/underlining, double-height, boxed.
- overlay up to 3 line graphs or display 3 bar charts side by side or stacked.
- a powerful editing and calculation function.
- define your own shading.
- dump to printer.

COMMUNICATIONS

Chattier than ChitChat

- send text down line to any micro.
- turn your PCW to a telex terminal.
- wide range of baud rates.
- file transfer protocols.
- buffer text to memory or disc.
- define your own function keys.

ENTIRELY IN MACHINE CODE WHICH MEANS ULTRA FAST RESPONSE

Helpful User Guide

With every copy of **MINI OFFICE PROFESSIONAL** you will find an impressive, easy-to-understand manual.

- 70 pages of text and graphics • clear, concise explanations • hands-on tutorials for each module • summaries of all the commands
- ring-bound to open flat for ease of use.

**** And don't forget **MINI OFFICE II** for the Amstrad 464 and 6128.

Available from Grace Bros, Chandlers and computer retailers around Australia.

FOR THE NEAREST RETAILER IN YOUR STATE CONTACT

NSW: Pactronics Pty. Ltd., 33-35 Alleyne Street, Chatswood. (02) 407 0261

VICTORIA: Pactronics Pty. Ltd., 51-55 Johnston Street, Fitzroy. (03) 417 1022

QUEENSLAND: Pactronics Pty. Ltd., 12 Stratton Street, Newstead. (07) 854 1982

SOUTH AUSTRALIA: Baringa Pty. Ltd., (08) 271 1066 ext. 6132

WESTERN AUSTRALIA: Pactronics WA, 757 Canning H'way, Ardrross. (09) 332 3807

MAIL ORDER: "Software To Go" - (02) 457 8289



THE WRITING'S ON THE WALL!

The end is nigh for expensive software...

P.C.'S.

MONEY MANAGER
PROTEXT
SNIP ACCOUNTING
SCHOOL EDUCATIONAL
JOYSTICKS & JOYSTICK CARDS
SCREENS BUSINESS
FILTERS DYNAMICS

MONEY MANAGER: Amazingly simple-to-use, yet immensely powerful Cash Book program. It enables you to keep total control of your finances, whether it is small business or personal.

PROTEXT: Complete word processing power. PROTEXT is the fastest, friendliest W/P, yet available for the P.C. PROTEXT includes a 30,000 word dictionary.

PLUS full mail merging.

SNIP ACCOUNTING: COMPLETE ACCOUNTING! Debtors, Creditors, Nominal, Invoicing, Statements, Stock Control, Payroll. This program does the lot, even down to coin analysis for payrolls.

SCHOOL EDUCATIONAL: Full range of educational software, covering most topics.

JOYSTICKS & JOYSTICK CARDS: Top quality joysticks and joystick cards at an unbeatable price.

SCREEN FILTERS: Reduces glare, cuts down eyestrain. These filters increase the contrast of your display, making it more readable.

BUSINESS DYNAMICS: Is it a game? Or is it real? Run your own company, allocate finances, do market research, assess advertising results. A true **BUSINESS GAME.**

For your nearest retailer contact:



TOP COPY

- WINDOWING**
- * Separate windows/ separate formats
 - * Up to 6 documents at once.
 - * 2 or 3 on screen at a time.
 - * Cut and paste — window to window

- ERGONOMICS**
- * Context-Sensitive Help Screens
 - * No Disk Swapping once loaded.
 - * WYSIWYG Editing
 - * Full auto reformat

- DOCUMENTS**
- * Multiple line headers and footers
 - * Auto page no. and wordcount
 - * Up to 300 Page Documents
 - * Load/Save ASCII Files

- PRINTING**
- * Fully Selective Malmmerge
 - * Access or Surname on criteria
 - * Print all/part of documents
 - * Wide range printer drives
 - * Printer configuration utility

IBM & P.C. COMPATIBLES

Available at Grace Bros., Harvey Norman, Maxwells Office Supplies, Steves Computers (A.C.T.) & Leading Computer Retailers.

NSW: Pactronics Pty. Ltd., 33-35 Alleyne Street, Chatswood. (02) 407 0261
 VICTORIA: Pactronics Pty. Ltd., 51-55 Johnston Street, Fitzroy. (03) 417 1022
 QUEENSLAND: Pactronics Pty. Ltd., 12 Stratton Street, Newstead. (07) 854 1982
 SOUTH AUSTRALIA: Baringa Pty. Ltd., (08) 271 1066 ext. 6132
 WESTERN AUSTRALIA: Pactronics WA, 757 Canning Highway, Ardress. (09) 332 3807

P.C.'W.

MASTER SCAN
DESKTOP PUBLISHER
MONEY MANAGER
PROTEXT
PROSPEL
PLAN-IT
SCHOOL TAIT ACCOUNTING
EDUCATIONAL SOFTWARE

MASTER SCAN: The ULTIMATE accessory for your P.C.W. Digitize pictures (without a camera), and insert into your DTP program. **DESKTOP PUBLISHER, FLEET ST. EDITOR**, etc. Includes **MASTER PAINT**, a full blown graphics program for the P.C.W.

DESKTOP PUBLISHER: Combine text and graphics, in your own layout, to produce leaflets, brochures, newsletters, assignments etc. Accepts scanned graphics from **MASTER SCAN.**

MONEY MANAGER: Amazingly simple-to-use, yet immensely powerful Cash Book program. It enables you to keep total control of your finances, whether it is small business or personal.

PLAN-IT: Complete desktop organizer. **PLAN-IT** includes a **CARD INDEX**, a mini cash book, loan calculator and much more.

PROTEXT: Complete word processing power. PROTEXT is the fastest, friendliest W/P, yet available for the P.C.W. PROTEXT includes a 30,000 word dictionary.

PLUS full mail merging.

PROSPEL: A 30 word per second spelling checker that will work on files produced by ANY P.C.W. word processor.

TAIT ACCOUNTING: Invoicing, Statements, Debtors, Creditors etc. This program does the lot at a bargain price.

SCHOOL EDUCATIONAL SOFTWARE: Full range of educational software, covering most topics.

Instant Images

Alec Rae puts you in the picture about a new way of getting illustrations onto your PCW

Whenever you see an advertisement for a graphics program on the PCW, the screen always seems to be displaying an elegant photograph that would take you weeks to create line-by-line for yourself. Of course, these pictures aren't created by hand but are 'digitised' from a photograph.

What could be better than being able to take images from any drawing or illustration you have available? Up until now the only option was to invest money on a digitiser interface for the PCW, and even then you had to have a video recorder or camera, which probably costs more than the PCW itself.

MasterScan comes along at a very opportune time. With the sudden burst of activity in the desk top publishing market a large number of people are now looking for good quality illustrations to brighten up the pages of their newsletters or fly-sheets. Even the best of 'clip art' files get boring pretty quickly.

MasterScan is a remarkable piece of equipment that many PCW users will find invaluable providing a low cost method of creating graphics in their PCWs. It 'scans' any pictures using an ingenious 'magic eye' scanning device that fits to the printhead of the PCW printer. This scanning head leads into an interface box which fits onto the expansion port at the back of the PCW.

To scan a picture then, feed the sheet to be scanned into the printer as though you were going to print on it, and start up the MasterScan software. The printer runs as if it was printing although the only action is to move the scanning lens along the line and incidentally mark a dot at the end of the line - it's a bad idea to use valuable original artwork since it

can get a nasty printed line down its right hand side unless you remove the printer ribbon while scanning.

It is not a particularly quick job as the scanner runs along each of the 256 lines on the screen, but it can look very effective. The maximum area that can be read is about 8" by 6 1/2", and the scanning process takes about 12 minutes for the whole page. If you only want to scan a small area you can interrupt the scanning once the bit you want has been recorded. The quality of the result

depends very much on the type of picture that you are starting off with.

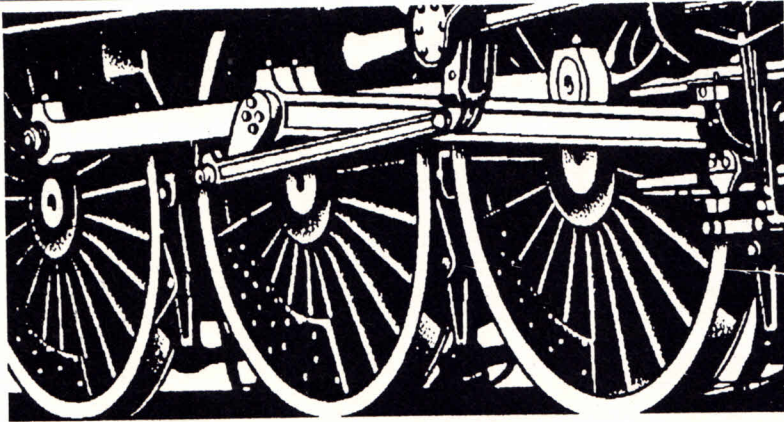
MasterScan merely creates a dot-for-dot screen image of the picture you gave it. It isn't clever enough to recognise that certain patterns of dots happen to correspond to what humans recognise as 'words'. If you scan a page of text, don't expect a word processable text file out of MasterScan - there are devices called 'Optical Character Readers' which can do this, but they aren't available on the PCW.

MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN

▲ The original with varying sizes of type (actual size)

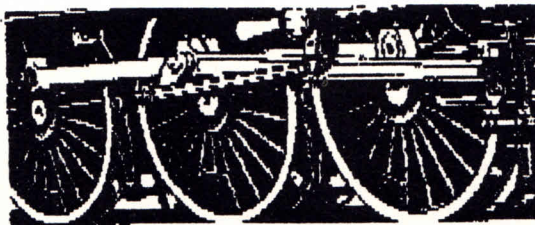
▼ The scan (actual size) printed with MasterPaint before any touch-up

MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN
 MASTER SCAN



A 'well known' line drawing (actual size) was scanned with MasterScan . . .

. . . which produced this image (actual size) when printed with MasterPaint. Again, this is a raw scan - we've done nothing to it! Inverse images of the same size can be produced with the normal screen dump facility of the PCW (ie. (ALT) + (EXTRA) + (PTR))



Fade to grey

MasterScan's main problem is that the PCW screen displays everything in black and white (well, black and green to be exact). Shades of grey on photographs and so on therefore will be either black or white - there is a threshold at which darker shades are taken to be black and lighter shades white. The MasterScan interface box has a contrast switch to allow you to control this threshold, but it can mean that on delicate pictures you need to spend a long time getting the contrast just right for best results.

The pictures that scan best are line drawings or any illustrations with strong contrasts. Photographs with a lot of grey in them can come out quite unlike the original.

The other problem area is the quality of the paper that you use. Shiny surfaces do cause problems to the scanner and a lot of detail can be lost from a gloss finished photograph or magazine page. The manual suggests that you photocopy the shiniest papers. This would also be useful for any illustrations you are not sure of as a photocopy tends to convert greys to black and white, so will give you a fair idea of how the illustration will turn out and could save you some time.

The program takes account of the fact

that there are a number of images that just won't reproduce properly and allows you to abort the scan at any time and asks at the end if you want to keep it or not. You can save the picture as disc files (they each take 24k of space on the disc) and then read these files in to art programs or desktop publishing programs.

What format?

A great selling point with MasterScan is that it can be used to create graphics in different formats. It can be used with Fleet Street Editor, Newsdesk International, The Desktop Publisher and the brand new Stop Press from AMS. It can be used with Database's own drawing program MasterPaint where you can tidy it up, embellish it, merge it with other images or change it about generally.

Being menu driven the program is extremely easy to use and there are no difficult commands to remember. Even operations like moving from one user group to another is no problem with MasterScan.

There are some neat features like the ability to reduce the image by half or blow it up to six times normal size. Again the success of this depends very much on

the individual image quality. You can also decide the width of your illustration by setting the scanner head to only go between specified column positions on the printer.

Of course it is vital to have another program to export it to as you can do nothing with the pictures in MasterScan - other than sit and admire them. It will not print out the scanned picture for instance - you have to use the system to which you are exporting the pictures to do that, or use MasterPaint, the graphics package supplied with MasterScan. However, it provides an invaluable source of suitable illustrations for anyone wanting to use graphics on the PCW.

A bonus for Australian users

MasterScan appears to have been released in the UK as a single package - disc and scanner. In Australia we are more fortunate as the package also includes MasterPaint.

MasterPaint is an art package running in a WIMP environment (windows, icons, menus etc.) and is meant to be used with either an AMX, Electric Studio or Kempston mouse. Of course, you can operate without one of these rodents but it is much less convenient.

MasterPaint will naturally accept pictures from MasterScan, but will also handle any coming from Fleet Street Editor Plus, Newsdesk International and Desktop Publisher. Pictures from MasterPaint can be "exported" to those packages as well.

This compatibility with other packages will no doubt help boost sales.

But as far as we were concerned, it provided the tool to 'touch-up' a scanned picture. The examples shown in this article are straight scans printed through MasterPaint *without any refining*. By using MasterPaint in zoom mode, it is possible to remove or add pixels to amend the scanned picture.

Master Pack, consisting of MasterScan and MasterPaint software and scanning device, is available from dealers stocking Pactronics products or from The Amstrad User for around \$279.00. (In the latter case - post free).

Protex March

Part two of the trek towards Protex. Rob Ainsley acts as native guide.

By now you may well know how to handle blocks, how to find and exchange, and how to use phrases. Protex does all this - and much, much more...

One of the best features of LocoScript is the use of those keys on the right hand side of the keyboard. Some word processors expect you to remember that CUT is [SHIFT][ALT]-J and PASTE is [EXTRA][TAB]-@ twice or something equally obvious. LocoScript keeps things blissfully simple - CUT is the [CUT] key, PASTE is [PASTE], etc., making it easy to mark out blocks of text for copying, deleting or moving around. In Protex, the keys are thoughtfully configured to work the same way. All you do is mark the beginning and end of the block of text to be cut, copied etc. by pressing [SHIFT][+] at the beginning and end of it.

You'll see two reverse video square brackets appear at those points - the whole block isn't highlighted as in LocoScript. Then you can CUT it, PASTE (move) it to the position of the cursor somewhere else, or COPY it.

When you copy, the copied block appears below the original, flanked by those brackets. If you want you can then move the copied block to a new position by the paste key. To get rid of the brackets you can just delete them like any other character, or remove them at a stroke by pressing the [CAN] key.

The buffer solution

A neat feature is that when you cut a block or delete text, it gets stored in a temporary buffer and can be brought back if you realise you made a mistake. Merely by pressing [ALT]U the most recently deleted text reappears. If you

try to delete a block too large for the buffer (a medium-sized paragraph), Protex asks for confirmation before consigning the block to oblivion. You can increase the buffer size in the CONFIG program.

For columnists

For many applications two column printing gives a snappy and professional look. In Protex you can achieve this easily using the 'box' mode of block transfer. First lay out your text with margins just under half as wide as the width of the page. Then select 'box' mode by pressing [ALT]+B and put block markers at the beginning of the line at the half-way mark and at the bottom right-hand corner of the last line. Move the cursor to the top line, press [ALT]+R to restore the original width margins, put the cursor where the top right hand corner of the right-hand column is to go, and PASTE. You should now have two neatly lined up columns, though don't try any further formatting or you might mess things up - also it seems to work best with justification off. To go back to the normal method of block transfer, press

[ALT]+B again.

To coin a phrase

Like LocoScript, Protex can hold a number of phrases and assign them to various letters, though you get them by pressing [EXTRA] and the letter rather than the [PASTE] key. Suppose you want to create a set of phrases for your estate agency, as in the LocoScript example disc, so that A holds 'convenient for buses and shops', B 'surprisingly spacious', etc. While in command mode enter:

```
phrase a "convenient for buses
and shops"
phrase b "surprisingly spacious"
```

and so on. From then on (until you switch off) pressing [EXTRA] and the letter would produce the phrase specified.

Great. But you probably want to save this set for future use. To do this, create a normal file called, say house.phr which contains all these command lines just as you enter them in command mode.

In command mode (at the a>prompt) type x house.phr and you'll see all the lines magically being entered as if you were typing them in at the keyboard. When it's finished you can use all the phrases as normal ([EXTRA] and the letter).

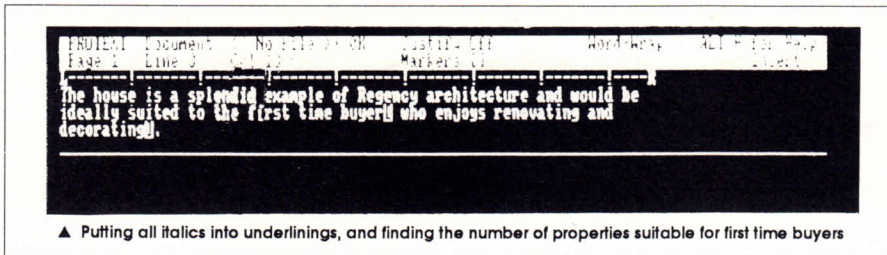
This means you can have several phrases files. Say you've set up another called truth.phr as above, with phrases for the same house descriptions for your own records, viz

```
phrase a "extremely noisy"
phrase b "small and cramped"
```

etc. You switch over to this set by typing x truth.phr. The commands will

A load of blocks

While there's no direct equivalent of the way you can save blocks in LocoScript under a number and subsequently paste them in by pressing PASTE and the number, you can simulate this with Protex's merge command. Though really the counterpart of Loco's insert text, it's fast enough to be thought of as a block function. Save your blocks as normal files and paste them in other documents at the cursor by the command merge and the filename.



▲ Putting all italics into underlinings, and finding the number of properties suitable for first time buyers

"he" with "he or she" bwc would ask for confirmation of each exchange (sometimes it might be inappropriate - fathers, for example, are usually he's), go upwards from the cursor, look only for whole words, and ignore "He" or "HE".

If you just want to find a word or phrase the [FIND] key has the same range of options. Give ??? as your string to find with options wg and all the four-letter words in your document will be pointed out. Selecting ag as an option would in effect count every occurrences of the item. Do this on your house description data file to find the number of studio flats, ([FIND] studio flat ag) for example.

Control printer controls

Although the obvious use of [FIND] and [EXCHANGE] is looking for words, the most useful and powerful applications are probably for formatting. Suppose you want to replace italic

commands by underline for printing out a manuscript (which is how editors usually prefer things). In LocoScript you can't do it, but in Protex, printer control codes can be found and exchanged.

This requires the use of a special signal to Protex - an 'escape character' as the jargon has it. Protex uses the exclamation mark as its escape character. You know how to put printer codes into a document by [ALT]X followed by a letter (b for bold, i for italic etc.) - well you can look for these codes by the text !b, !i etc. respectively.

So, if you replace !i by !u with the options ag, all the reversed out i's, which turn italics on and off, will be wiped off the map, and replaced by underline codes.

One problem is that because ! and ? are special characters you can't use them as simple text - you must precede them by an exclamation mark if you want them to be taken literally. If you

want to weed out all the question marks and exclamation marks from a piece you would FIND !? and !!.

Another useful special character you can search for with FIND and EXCHANGE is the code for [RETURN], which is effectively the end-of-paragraph marker. !. in text means a [RETURN] code, so if you exchanged !. for !!. you would insert an extra blank line between all paragraphs.

As the command to turn italics on is the same as to turn italics off in Protex, it's easy to miss one out somewhere and find all the document is printing out in italics except the words which should be. A neat way of checking that all italics are turned off would be to FIND !i and specify 2g as your option - every second code will be rooted out, and you can check they're always the other half of a pair.

Zap

Handy features of Protex:
[SHIFT][DEL] deletes whole words at a time, [ALT][DEL(right)] deletes from the cursor to the end of the line, [ALT][DEL(left)] deletes from the beginning of the line to the cursor, and [ALT][CAN] zaps entire lines.

IMPORTANT ANNOUNCEMENT FOR LOCOMAIL AND LOCOSPELL 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 to LocoScript 2 users who have LocoScript 1 compatible copies

To obtain your upgrade 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 is to be sent and the item or items you are returning for upgrade.

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

**LocoMail/LocoSpell Upgrade
 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 on copies or your own blank discs. Your original disc will be returned to Locomotive Software in Surrey, England along with your name and address for registration purposes. The cost of updating either LocoSpell or LocoMail is \$18.50 each. The cost for updating both is \$37.00

Three-piece suite

Three Basic listings to help you make friends and influence people

Vocabulary Tester by Michael Chapman

If you are into evening classes in Spanish or Italian this simple vocabulary testing program may help you.

We have set it up as a French tutor but of course you can use it for any language that the PCW has the correct character set for. All you do is put in the appropriate details in the Data lines from 10 to 150 (these all start with the word DATA). Put in the first foreign word and then the English translation both in quotes, separated by a comma. List all the words in the same way until the end of the line, where you start a new DATA line. You can put in up to 149 data statements - if you know that many foreign words.

So when the program runs it asks for the words for *the dog* you naturally write *le chien*. It doesn't matter whether you type your answers in upper or lower case.

If you do want to test your skill in another language you will want to change line 190 to read

```

1 'Vocabulary Tester
2 'Michael Chapman
3 'The Amstrad User Mar 88
10 DATA "Le chien","The dog", "le chat",
the cat", "Magnifique!", "The Amstrad User
20 DATA "La plume de ma tante", "The plume
of my aunt"
150 DATA "END", "END"
160 PRINT "          VOCABULARY TESTER"
170 READ a$,c$: IF a$="END" THEN RESTORE:
GOTO 220
180 b=b+1
190 PRINT "What is the French word for ";
c$;: INPUT b$
200 IF UPPER$(b$)=UPPER$(a$) THEN LET c=c
+1: PRINT "CORRECT": GOTO 170
210 PRINT "Wrong!": PRINT "The correct an
swer is ";a$: GOTO 170
220 PRINT "You scored ";c;" out of " ; b;
230 INPUT "Try again Y/N";z$: IF UPPER$(z
$)="Y" THEN RUN: ELSE END

```

"What is the Serbo-Croat for" or whatever is suitable - just to avoid confusion. The program does not need to be limited solely to vocabulary testing. You can use the same format for any question and answer set-up by adjusting line 190 to ask the right question.

For example, if you make line 190 just print out "What is:" and the DATA statements were DATA "Istanbul", "The capital of Turkey", DATA "15", "The number of players in a rugger team" and so on, then you have an instant Trivial Pursuit game.

```

load"b:vocab
Ok
run
          VOCABULARY TESTER
What is the French word for The dog? le chien
CORRECT
What is the French word for the cat? le cat
Wrong!
The correct answer is le chat
What is the French word for The Amstrad User? Magnifique!
CORRECT
What is the French word for The plume of my aunt? La plume de ma tante
CORRECT
You scored 3 out of 4 Try again Y/N?

```

Escape Codes by Richard Fletcher

It is easy to produce an ASCII file (in LocoScript or any word-processor) which you can print out on screen with the CP/M command TYPE filename. The only problem is that by making it an ASCII file you take out all those fancy screen effects, underlining or reverse video that make it look interesting.

This listing puts all these effects back in, and more. Where you want the Escape codes (see the CP/M article on pages 25 and 26 for the one's you can use) put a ^ in the text to show that the next characters are to be converted into a code - you get ^ using [EXTRA] and U. Then use a] for ESC and the letter or number. So you put ^]p where you want reverse video on and ^]q where you want it to stop. ^]r starts underlining and ^]u switches it off. You can even use ^G to make the PCW bleeper warble which will surely catch anyone's attention (or ^G^G^G for real emphasis). ^@, ^A ...

^Z correspond to the ASCII codes 0, 1 ... 26 etc - the PCW CP/M manual gives details of what keystrokes correspond to what ASCII codes on pages 1133ff (PCW8256/8512) or 547ff (PCW9512), and also what codes you need to use to get the effects you want on the screen.

Then run the program and give the name of the ASCII file when asked. It will convert the codes into a form that the PCW will understand. So if you are letting someone else use your PCW you could write out full instructions in a file README and tag an instruction TYPE README at the end of your PROFILE.SUB. Then just let them dare to get things wrong.

You can even write yourself simple files to effect printer control codes in the same way. The only warning is to make sure you don't use ^ followed by an ASCII code character less than 64 in your text.

```

1 'Escape codes demo
2 'Richard Fletcher
3 'The Amstrad User Mar 88
10 INPUT "Enter filename for conversion :
";file$
20 IF FIND$(file$)="" THEN PRINT "NOT FOUND":GOTO 90
30 NAME file$ AS "tempfile. $$$"
40 OPEN "I",1,"tempfile. $$$":OPEN "O",2,file$
50 WHILE NOT EOF(1)
60 LINE INPUT #1,line$:GOSUB 100:PRINT #2,line$
70 WEND
80 CLOSE 1,2:KILL "tempfile. $$$"
90 END
100 s$="":FOR i%=1 TO LEN(line$)
110 c$=MID$(line$,i%,1)
120 IF c$="^" THEN i%=i%+1:c$=UPPER$(MID$(line$,i%,1)):c$=CHR$(ASC(c$)-64)
130 s$=s$+c$
140 NEXT i%
150 SWAP s$,line$
160 RETURN

```

Loco 2 Word Counter by Stephen Gourley

Word counters may be mundane, but they are the one utility that everybody who does any wordprocessing needs. We have already published a word counter listing (and an update) for LocoScript 1, but this month's surely has the last word.

It might seem a bit long and complicated compared with some others we have published but this one is far more accurate (so Mr. Gourley claims) than its predecessors and more important it works on LocoScript 2 files. That should surely make it worth the effort.

The increased accuracy is brought about by the fact that hyphenated words are counted as one word, numbers are not

counted (unless they have at least one letter as in 1970's) and the words 'a' and 'I' are counted.

To run the program on a file, make sure you have stored the Loco 2 document in group 0 of your LocoScript work disc. Then start up CP/M, load the wordcounter program in BASIC, run it and follow the prompts.

The process is not particularly fast but it can be speeded up by moving the file you are counting into M drive first of all (using PIP M:=A:filename before you start BASIC). When the program asks you for the filename add 'M:' before the name.

```

1 'LocoScript 2 Word Counter
2 'Stephen Gourley
3 'The Amstrad User Mar 88
10 MEMORY,,,255
20 INPUT"Name of LocoScript file to be counted";file$
30 OPEN "R",1,file$,255
40 FIELD 1,255 AS buff$
50 GET 1
60 FOR i%= 1 TO LEN(buff$)
70 a%=ASC(UPPER$(MID$(buff$,i%,1)))
80 IF NOT z% THEN s%=i%
90 IF z% AND i%-s%>3 AND (a%<34 OR a%>91) THEN space%=0: word$="":counter%=0
100 IF counter%=1 AND (a%<34 OR a%>91) THEN space%=0: word$="":counter%=0
110 IF a%=1 THEN space%=-1: word$=word$+CHR$(a%):counter%=COUNTER%+1
120 IF a%=6 AND counter%<2 THEN word$="":space%=-1: word$=word$+CHR$(a%):counter%=2:s%=i%:z%=-1
130 IF NOT space% THEN 250
140 IF space% AND a%>64 AND a%<91 THEN word$=word$+CHR$(a%):counter%=counter%+1
150 WHILE counter%=3
160 w$=MID$(word$,2,1):x$=MID$(word$,3,1)
170 IF w$=CHR$(1) OR w$=CHR$(6) THEN word$=LEFT$(word$,1)+RIGHT$(word$,1):counter%=2:GOTO 240
180 IF x$=CHR$(6) THEN word$=LEFT$(word$,1):counter%=1:GOTO 240
190 word%=word%+1
200 IF x$=CHR$(1) THEN space%=-1 ELSE space%=0
210 word$="":counter%=0
220 z%=0
230 IF space% THEN word$=word$+CHR$(1):counter%=1
240 WEND
250 NEXT i%
260 IF NOT EOF(1) THEN 50
270 PRINT CHR$(7);"Total number of words in ";file$;" is ";word%
280 CLOSE 1: CLEAR: END

```


DIY Database - 2

Chris Lilley discovers how to build his own database using the PCW's standard HELP command

The HELP program on Side 4 of the Amstrad master discs works like an electronic manual about CP/M. With a little cunning you can actually make up your own text storage database about anything you want, from recipes to part catalogues and instruction books.

The HELP utility is a program on side 4 of the system discs which provides helpful information (hence the name) about how to use the CP/M commands and other programs supplied with the machine. You can use it from the CP/M A> prompt in two ways: make sure you have your copy of side 4 of the master discs in the current disc drive and type

```
A>HELP or
A>HELP topic
```

The first one gives a list of the topics available, and the second gives details on a specific topic once you know what you are looking for. In practice, the information you get out of HELP as it is supplied is rather terse, and you will probably find it more confusing than the manual unless you understand the jargon.

Having read about a particular topic, there are several things you can do.

```
HELP UTILITY 01.1
At "HELP" enter topic (,subtopic)...
EXAMPLE: HELP DIR BUILT-IN
Topics available:
COMMANDS  CTRLCHRS  COPSYS  DATE  DEVICE  DIR
DISCKIT  DUMP  ERASE  FILESPEC  GENCOM  LANGUAGE
GET  GSY  HELP  HEXCOM  INITDIR  PATCH
LTD  LIND  MAC  PALATTE  PAPER  SAVE
PIP (COPY)  PRINTER  PRT  ROMANS  SETDEF  SETSIO
SET  SET24X80  SETDEF  SETNOVS  SETSTY  XREF
SHOW  SID  SUBMIT  TYPE  USER
```

▲ The standard HELP topics using Amstrad's supplied data

Typing a full stop will redisplay what you have just read; typing a question mark produces a list of what's available. The program may list some subtopics which go into more detail. To read about one of these, type a full stop followed by the name of the subtopic. It is even possible to specify the subtopic directly from the A> prompt, for example HELP PIP OPTIONS where 'PIP' is the topic and 'OPTIONS' is the subtopic.

Try out an example: load up CP/M, type HELP and then DIR as the topic. Once the program has displayed the relevant information, it gives two subtopics for your perusal - BUILT-IN and WITHOPTIONS - and then gives a HELP> prompt. This means much the same thing as the A> prompt in CP/M, ie. 'type something here', but reminds you that you are still in the HELP program.

Now type .W to select the second subtopic (the program only requires as many letters as are needed to distinguish between the possible options). See how this subtopic is divided still further into OPTIONS or EXAMPLES, and that the 'path' taken to reach this point is given at the top left of the screen. Typing either .O or .E would take you further along this path, whereas typing a topic without a full stop starts you off from the beginning again. Pressing [RETURN] without typing anything finishes a help session and returns you to CP/M.

Optional advice

An 'Option' is an instruction to the program to do something differently. Options are selected by enclosing them in square brackets, []. For example:

```
A>HELP FILENAMES [NOPAGE]
```

There are two options that can be given when looking something up in the help file - NOPAGE or LIST. Only one may be used at a time, and the topic must also be given.

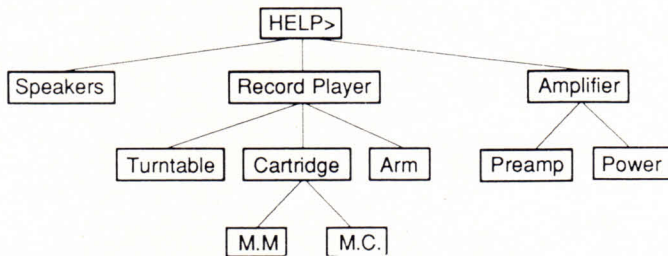
The NOPAGE option makes the program display a whole topic at once, rather than displaying a screenful of information and then prompting you to press [RETURN]. The LIST option is the one to use if you want a printed copy. It stops the "Press RETURN" message and also cuts out gratuitous form feeds. It does not however send data to the printer: you must do that by pressing [ALT]+P.

Options only work for the current Help request. You must specify the option [NOPAGE] on every Help command you give, if you want it, since it reverts to the default after each.

Rolling your own

Although the main part of CP/M is standardised, manufacturers are free to add on their own extras to it. For example, Amstrad added DISCKIT and SETKEYS. To allow the HELP file to be updated to include these new commands, there are a further two little-known options - EXTRACT and CREATE.

All the text used by the program HELP.COM is stored in a file called HELP.HLP. This file is specially coded, and you can't get at any of the 75k's worth of information except by using the HELP command. However, the command HELP[EXTRACT] takes the file HELP.HLP and from it produces a file HELP.DAT which contains the help data in a form that can be edited in a wordprocessor. HELP.HLP must be on the default drive, irrespective of which drive HELP.COM loaded from. Having edited the file, you can create a new HELP.HLP with the command



▲ The hierarchy of a HiFi system, which is ideal for putting into a HELP file

```

///1Amplifier
This is the centre of the system, and is in two parts:
///2Power
A power amp makes the signal larger to control the speakers.
///2Preamp
Selection of records, tape or tuner is done from the preamp.
It also controls the volume and tone.
///1RecordPlayer
Despite cassettes and compact disc, LP's are still the most
common means of providing music.
///2Arm
The arm allows the cartridge to move over the record.
///2Cartridge
By converting movement of the 'needle' into electrical
signals, the cartridge supplies a music signal for the preamp.
///3M.M.
Moving magnet cartridges will work with any amplifier.
///3M.C.
Moving coil cartridges may need a special transformer or
headamp to work with a standard amplifier.
///2Turntable
This provides a platform for the arm, and rotates the record.
///1Speakers
A pair of speakers allow you to hear the music!
    
```

▲ The text for the HiFi shop's example HELP.DAT file

HELP[CREATE]. Creating a new HELP.HLP file overwrites the old one without asking if you mind.

This is where it starts to get interesting, because using the CREATE option you can create your own HELP text, which needn't be anything to do with CP/M at all.

Suppose a HiFi shop wanted to produce an aid for its newer members of staff. A sound system is composed of several pieces of equipment, each of which can be divided into several component parts; some of these may be further subdivided. This is the ideal kind of application for a Help file, as shown in the diagram. The row of three boxes represents the topics that will appear on-screen when the program starts. If these are called 'level 1' then the next row of boxes is level 2 and represents the subtopics. The bottom row is level 3 in this example, although the HELP program can handle up to 9 levels.

"I'd like to buy a gramophone"

Turning to the listing, you can see how to represent this information. To use the example worked through here,

create a file called HELP.DAT using, for example, the 'non-document' mode in WordStar. If you use LocoScript, select the 'simple text file' option from the 'Make ASCII file' menu on [f7]. Now type in the example text into the file. Look at the first line; firstly there are three slashes. These are not printed but indicate to the program that the name of a topic is coming up.

Then there is a single number, which is the 'level', followed by the name of the topic. Notice that there are no spaces between the number and the name, which can be up to 12 characters - including numbers and spaces. Any excess characters on that line are printed as part of the text. The information associated with that topic follows on the next line. This can be of any length, from a single word to several pages. The end of the text is marked by a line starting with three slashes, or the end of the document.

After the 'Amplifier' topic is its first subtopic, so the name is preceded by '//2'. There are no further levels on the diagram, so this is followed by the next level two topic. That being the end of this 'branch' on the diagram, we move

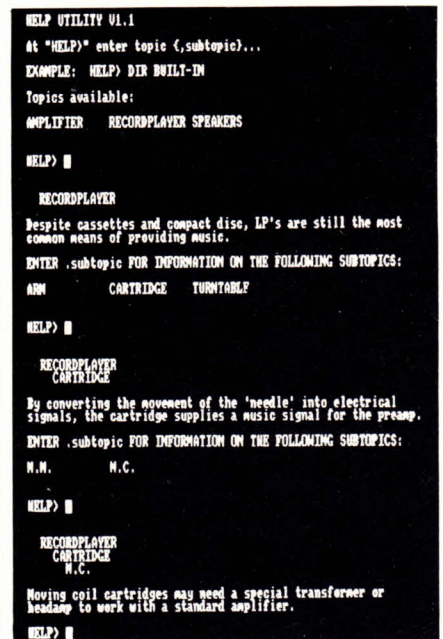
on to the next level 1 topic. Follow through the rest of this example, comparing it to the diagram.

To convert this file which must be called HELP.DAT, into the HELP.HLP file, you must have it on a disc which has enough free space for another file which will be slightly bigger. For example, if your HELP.DAT is 21k long, you must have 22k free on the disc before you start. When converting from one to the other, the .DAT and .HLP files must be on the same disc, and this must be the default drive.

This limits the size of file you can make to around 85k on a PCW 8256, or 320k on an 8512. Allow an extra 1k for each 64 topics or subtopics. In this small example, disc space will not be a problem! After making sure that the original Amstrad HELP/HLP is not on the same disc, type the command

```
HELP [CREATE]
```

Topics need not be in alphabetical order - look at the screen dump of the standard HELP listing file where 'COMMANDS' is before 'CNTRLCHARS'. Sticking to an alphabetical scheme does however make things neat and easy to use. Duplicate topics do not generate any errors, but you can only select the first



▲ Using the HiFi shop's custom-built help system

instance of the topic. The same sub-topic name can be used with several different topics.

The text you put in the Help database can contain any character you can type (ASCII codes from 32 to 255), but don't use control codes below 32 to try and get fancy effects to move the cursor as they can mess up the indexing. The HELP.COM file can be renamed to suit yourself, but the database file must be called HELP/HLP, so the one you make must be on a different disc to the one you get free. Alterations to the HELP.HLP file may be made by the command HELP[EXTRACT] to convert it to a .DAT format; however it is easier to keep a copy of the original HELP.DAT text file and edit that.

What can go wrong

If you don't get things right, you are bound to get a typically cryptic CP/M error message. Most errors are due to simple things like using the wrong drive or not having enough room on disc. A couple need some explanation:

No HELP.HLP file on the default drive:

This error message is badly worded. It is trying to say that both HELP.COM and HELP.HLP must be on the same disc. Whether this disc is the default one is irrelevant.

Too many entries in Index Table. Not enough memory:

The upper limit for index entries is around 1100 entries - you are likely to run out of disc space before this limit becomes a problem. However, the Help program will happily allow you to CREATE a help file with too many index entries, and only inform you of the mistake when you try to use it!

The good style guide

When writing your database text, sticking to a few simple rules will make it simpler for you and others to use:

Choose names that differ in the first few letters, to make selection of suboptions easier. Avoid jargon terms, abbreviations and punctuation. Compare the 'Cartridge' topic in the HiFi

example, which does badly on all these points, with the 'Amplifier' topic. Notice how the text leads on to explain what the subtopics are about. ASCII codes greater than 128 will print graphics on the screen. How you get them into your text file depends on the word processor you use to create it. If you experiment, you can draw boxes and diagrams in your text. To print out an entire help file, don't use the LIST option as it only prints a single topic. Use the command HELP[EXTRACT] to make a text file, then load it into a word processor to remove all the '///x' stuff and generally pretty up the layout. Print like any other file.

Hacker note

If you don't like the blurb or error messages HELP gives you, you can change them by using SID to directly alter the file HELP.COM. The Help messages are stored at 0140h to 0583h, and they can be edited as long as the start address of each message is not altered. The 'HELP>' prompt is at 04A1h to 04A6h, and the introductory blurb is at 04C0h to 052Fh.

This article was reproduced from Issue 8 (May '87) of 8000 Plus by permission of Future Publications.

LocoScript 2

The quicker, better, easier version

QUICKER USE - fast movement around documents, jump direct to a page, save and continue from last position

BETTER RESULTS - choice of printers, improved characters on the built-in printer, new characters (including Greek/Cyrillic), specialised scientific characters, use accents with any character

EASIER OPERATION - multiple printed copies, disc copying direct from LocoScript, new user guide with glossary and quick reference, improved FIND and EXCHANGE

COMPATIBILITY - familiar feel of LocoScript menus, use existing LocoScript documents.

\$72.95
(incl. postage)

Stocks are being replenished from the UK every month - so if we have run out, it won't be for long!

The Amstrad User

1/245 Springvale Road, Glen Waverley,
Vic 3150. Tel: (03) 233 9661

Bankcard, Mastercard or Visa accepted

PCW 8256/8512 & PC Software

GAMES for PCWs

Title	Price
Classic Quest - three adventures - easy to hard	49.95
'Colossus' Bridge + book	49.95
Distractions	TEMP. O/S
Graham Gooch Cricket	59.95

TOMAHAWK IS BACK IN AGAIN - Still only \$57.95

The Pawn	89.95
Silicon Dreams	59.99
Starglider	69.99
Steve Davis' Snooker	52.95

SPREADSHEET

Scratchpad Plus	149.99
-----------------	--------

DATABASES

Cardbox	179.99
Condor One	199.99
Database Manager	99.95
Masterfile 8000	119.00

DESKTOP PUBLISHING

Fleet Street Editor	249.95
Font 'n' Graphics for FSE	69.99

Newsdesk International PLUS Light Pen pack

Newsdesk International is an extremely powerful program controlled normally by cursor keys but now comes with an Electric Studio Light Pen. Newsdesk International can be used as a stand-alone system with its own word processing editor or accept input from a word processor such as LocoScript, or even digitized input from the Electric Studio Video Digitizer.

This pack will give you the ability to mix the text files created on the word processor with the graphics created using Newsdesk International. Headlines and text can be sized easily according to your requirements.

NDI + E/S Light Pen	249.95
---------------------	--------

Fonts for Newsdesk	49.99
Snip Art for Newsdesk	49.99

GENNY - Genealogical Database on a 3" disc (PCW) plus full instructions	\$119.00
--	-----------------

GRAPHICS & PRESENTATION

Title	Price
DR Draw	169.95
DR Graph	169.95
Font Module (to use with Elec. Studio light pen)	69.96
Snip Art (to use with Elec. Studio light pen)	54.95

PERIPHERALS

DIGITISER - Input from standard videocamera to Newsdesk Int. or Fleet Street Editor. 349.95

SERIAL INTERFACE - for linking other equipment (eg. modem) to a PCW. Normally \$99.00 59.00

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

WORD PROCESSING

LocoScript 2	72.95
NewWord2	275.00
Prospell	99.00
Protext	199.00
Tasword 8000	79.95
Wordstar PCW	199.00

MISC.

Mini Office Professional - the PCW version of the successful Mini Office II with Spreadsheet, Wordprocessor, 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

TASMAN PRODUCTS

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

GAMES for PCs

Title	Price
Beyond Wolfenstein	19.99
Casino Parlour Games	19.99
Crossfire	19.99
Elite	69.00
Factactics Trivia	19.99
Games Pack 1 (13 games)	29.99
Games Pack 2 (4 games)	29.99
Gamma Games	49.99
Leader Board	49.00
Lotto Checker	69.99
Saboteur II	29.99
Silent Service	49.00
Skyrunner	34.99
Solo Flight	49.00
Tenth Frame	59.00

JUST ARRIVED

TETRIS - the amazing abstract puzzle from Russia	49.99
Air Combat Emulator II - twice the challenge of original ACE	34.99

BUSINESS

ABC Business Pack	499.99
Ability Plus	450.00
Ability	225.00
Upgrade to Ability Plus	225.00
Cardbox	179.00
Condor 1 Jnr	199.99
In-House Accountant v2	339.99
Pageability	561.00
Portex (with PVC binder)	299.99
Portex (with leather binder)	349.99
Scratchpad Plus	149.99

PERIPHERALS

PC1512 Light Pen	75.00
Video Digitiser	449.99

GENNY - Genealogical Database on one 5.25" disc (PC) plus full instructions \$119.00

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

Masterly Masterfile PC

An overview of Campbell Systems' new PC version of a well tried and tested relational database

A copy of Masterfile PC arrived at these offices just too late for a full review. So, to whet your appetite, we've printed some points from the manual and sent the copy off to Chris Collins for an in-depth review to appear in next month's issue.

History of Masterfile

Masterfile first appeared in 1982, for use with the ZX Spectrum. It has since been redesigned for Amstrad CPC, PCW and ZX Spectrum +3, and here we present the PC edition. All editions have in common the same menu-driven approach, the same variable-length data concepts, and multiple user-designed data views. And all are characterised by high-speed processing using Assembled machine code. However, each edition is no mere translation of an earlier one, but rather is redesigned to take full advantage of the features and resources of the target machine.

Summary of Facilities

A computer filing system must store, search, display, and print your filed information. It must also permit updates by way of insertions, erasures, and alterations. Information is divided into files, records, and fields. Like all filing programs, Masterfile also requires that your data is so organised. But unlike most other programs, MFPC allows all your data to be of variable length. This means there is no wasted space on the disc. Thus you need only give some thought to the overall volume of data when planning a file.

With MFPC, the way in which data is presented is not geared to the way in which it is stored, and you may devise several different screen views of the

same file of data. The display styles can be as diverse as address labels, index cards, and summary tabulations with in-flight column totals. What is more, one may extend or modify the displays at any time. You can embellish your displays with boxes, and panels of any colour. Displays are not limited to the screen width, but can be as wide as 160 columns, and the screen can scroll from side to side. Printed output can also be 160 columns wide.

MFPC files can be keyed or unkeyed. With keyed files, records are kept in ascending key field order. Unkeyed files allow records to be inserted at any point. But any file can be sorted into a different sequence for viewing or printing. Files can be merged or split at will, subject to the memory limits of the computer.

It is possible to communicate data to other systems, for example to feed names and addresses to a mail-merge word processor. This process is called EXPORT. With Masterfile one may also IMPORT data (in ASCII form) from other systems.

By means of export and re-import, it is a simple matter to generate one file from another file using a different data field as its key. In like manner one may convert a non-keyed file into a keyed file. Almost no matter how you design a file, it is easy to re-organize it as your needs change, without having to re-enter all the data.

You can locate records in a variety of ways. You can just "browse" through the whole file; or FIND a particular key, or GOTO a particular record number. At a higher level of sophistication, one can SEARCH out a sub-set of the file by comparing the data with a given value.

Special facilities are provided for handling dates, so that they can be keyed and viewed in 'human' form, yet

stored and processed in 'computer' form.

MFPC can perform field-to-field calculations, with the ability to carry forward numeric data from one record to the next. Table look-up provides a neat way to encode and translate text fields.

Finally, MFPC offers full relational data base functions, whereby any file can refer to several other files for in-flight data retrieval.

Machine Requirements

The program will run under MS-DOS version 2 or higher. It also seems to run under PC-DOS, although this is not guaranteed. The minimum memory requirement is just 256k, although file size will be rather limited with this amount of memory. The minimum disc drive is a single floppy. It will also handle any drive which is recognised by the operating system, including a hard disc. Users without a hard disc should note that the limit of file size will most likely be that of the floppy disc rather than the memory (RAM).

The program can run 'inside' other software which correctly offers a gateway to MS-DOS commands. However, this may greatly reduce the available memory, and some host programs interfere with key token values.

The program seems to be able to co-exist with the likes of Deskmate, Sidekick etc., but it cannot be guaranteed that such third-party software does not introduce functional or performance problems. If the user finds any odd effects, such as keys being misinterpreted or ignored (especially cursor and other special keys), they should try running MFPC again without co-resident software.

Availability

Masterfile PC will be exclusively imported to Australia by The Amstrad User under an agreement with Campbell Systems. Stocks will be available from 1st April 1988 at a price of \$199.00 per copy. If you wish to reserve a copy from the first shipment, you are advised to contact us now. Dealers are also welcome to reserve copies.

For more information ring (03) 233 9661.

Dirigible DIRs and Shareware programs

Chris Collins expands upon the DIR commands and brings news of software to make your PC (or fingers) work faster

This month's column is coming to you from a new wordprocessor that I have just discovered, but I will be telling you a lot more about Galaxy later. This month we will also be looking at Writer's Dream and another program called The Directory Assistant. I will be telling you about these programs later too, but now a bit of news.

Bad News

I have some bad news for those of you who purchased the PC Games discs and have written to me with the problems regarding Zaxxon. I have recently found out from one of my sources that Zaxxon will not work with DOS 3.20. Unfortunately when I was testing the programs on the discs, I was using DOS 3.10 so the problem did not arise. Since updating my hard disc to DOS 3.20, the problem has definitely manifested itself. My apologies to one and all.

More DIR Commands

The commands for this month will be DIR commands that are available with your system. The three commands involved are CHDIR, MKDIR and RMDIR. These can be shortened to the following, CD, MD and RD. I guess we should start at the beginning and first talk about the command that is used to create directories - this is MKDIR or MD.

MD can be invoked in basically only one fashion which is as follows;

```
MD [d:]PATH
```

where d: is the drive on which you wish to create the directory, and PATH is the full pathname of the directory. The only limit on this command is that no pathname can be longer than 63 characters (including embedded

slashes). So, to create a directory called TEST which runs off the root directory of the C: drive, is as simple as typing either of the following;

```
MKDIR C:\TEST
or
MD C:\TEST
```

So simple. You can create directories as deep as your available disc space and the only holdup is the 63 character limit.

RMDIR or RD must be the next command to look at. This is opposite of MD in that it is used to remove directories. The command line is the same as MD, with the 63 character limit. So the command

```
RD C:\TEST
```

will remove the directory called TEST that runs off the root directory on the C: drive.

The only other command in this collection is CHDIR or CD. Again the command line is the same as the previous commands. The 63 character limit also applies. This is the command where the \ (backslash) can make all the difference to the command. In all three of these commands, the \ (backslash) in the command changes the outcome completely.

When using directories, \ always refers to the root directory of the drive in question. For example, CD\TEST and CD TEST mean the same thing if given from a root directory, but a completely different thing if given from a directory further down the disc, whilst CD TEST will only take you to the TEST directory if it runs off the directory we are currently in.

Whilst it does take a lot of effort to learn and to use directories and sub-di-

rectories, the effort involved will be rewarded tenfold as you find yourself moving all around your discs without the problems that a lot of your friends have.

The Directory Assistant

The first product for this month is a new program called The Directory Assistant. Written by a company called KIER Associates, it claims to be a Pocket Phonebook and Name Management System.

The Directory Assistant is used to keep track of all those things that require lists of names and addresses and such like. Examples of these types of lists are phonebooks, wedding invitation lists, and mailing label systems. The Directory Assistant can be used for all of these and much more.

Booting up The Directory Assistant is as simple as typing DA at the DOS prompt. The main title screen comes up, announcing the program and asking you to wait. Then you are presented with the main menu. From here, you select the directory that you wish to use. You can create a directory, delete a directory, list all the available directories, get the online help screens or load a data file.

From this point, where you go depends on the choice that you have just made. All other options are accessed from menus, so this makes it very simple for people that don't like to read documentation. Even if you don't like manuals, the documentation provided on the discette is more than adequate.

The Directory Assistant answers a need in the computer community. We are renowned for keeping lists, and this program is very good at what it claims to do. For the globe trotting socialite, this program is a must. The directory

Assistant occupies one discette and the recommended donation is US\$15.00.

Writer's Heaven

This is a customization program that turns PC Write into the fastest and most efficient editing tool today. Writer's Heaven, when combined with PC Write's macro feature gives PC Write a whole new keyboard command structure.

The result is a word processor that combines speed, power, simplicity, and ease of learning a word processor that makes on screen editing, significantly faster.

What Writer's Heaven does is to reduce the PC Write control files, adding its own set of commands while leaving most of the principle PC Write command keys intact as an alternate command set. Like any other PC Write control file, Writer's Heaven can be modified by the user.

All Writer's Heaven commands are executed on the main portion of the keyboard, using only the typewriter keys with the "Ctrl" and "Alt." No command requires moving either hand away from its place on the keyboard, which allows for quick typing and easy editing execution. Without taking your hands from the typewriter position, one can move the cursor by space or by word, go to the left margin or end of text, move the cursor by paragraph, go forward and back by sentences, scroll the screen up or down, go to the beginning and the end of the document, perform marking and block operations, perform swap and transposition functions, reformat the text, plus much more.

In addition, Writer's Heaven has a reverse video for better viewing, but this can be changed if desired. Writer's Heaven also provides a help screen that can be grafted on to the regular PC Write help file, but with all the keys logically placed and easy to learn by PC Write.

Galaxy

The last program for this month is a new word processor called Galaxy. Written by Omniverse, Galaxy is a fast RAM based wordprocessor which has been designed to be very powerful whilst very easy to learn.

Galaxy has a huge range of commands available to the user. All of these can be accessed from the menu, whilst getting help at the same time. This is very useful for commands that you don't use very often. For those commands that you do use all the time, you can dispose of the menu and simply use the command keys.

Galaxy also allows windows. For those of you that don't realise what this means, I will explain. You can have a document in memory, open another window and load another file. You will then be able to swap between the two, and also copy blocks between the two. This can be very useful if used correctly.

Spellchecking is also available, courtesy of Borland's Turbo Lightning. This is loaded before Galaxy, and is then called up from inside Galaxy. Lightning can even check your spelling while you type. The only thing that I have against the spelling checker is that it uses an outside program.

Many of the features Galaxy possesses would remain undisturbed by the home user for a long time, however it is a good to know your wordprocessor can grow with you as you learn. For those of you that have been raised on WordStar, Galaxy will even read and write WordStar files and let you use most of the commands that you know.

Galaxy occupies only one discette, and the registration fee is a mere US\$49.95. This competes well with the program like WordStar 4.0 which retails at approximately \$695.

Galaxy is very fast and very easy to use. It is the sort of word processor that a novice can use, whilst still not alienating power users. I find that I am liking it more and more, and will very shortly register the copy that I am using.

As always, any discs that I mention are available from me at the following rates. The first discette in any order is \$10.00, and discette after that in the same order is available for \$6.00. Send any orders to me at the following address;

C.J. Collins
c/o The Amstrad User
1/245 Springvale Road
Glen Waverley, Vic 3150



Some more comments on the PC environment from Kevin McLean

Operating Systems

After coming to grips with the manual and setting up any computer it would be natural to assume the next step is to put in that floppy disc thing and we would be away. Unfortunately, our troubles have only just begun.

Because software manual writers do not know how much experience the user has they have to try and cater for everyone. Some fail dismally. Every different type of software company seems to have their own approach to this problem. Some have "getting started" manuals and others leave most of the installation up to the purchaser.

Most companies try to keep their explanations simple to understand without being too ambiguous. This is great for the average user but puts a lot of pressure on the beginner. Most of these problems have been encountered by myself or other local users at some stage or other and I'll try to offer some suggestions to help the "beginner".

The Amstrad starts off by confusing us with 3 different operating systems. MSDOS, DOSPLUS and GEM. Gem has it's own diehard followers who stick to it like glue. Atari thought so much of it they made it the sole operating system on one of their computers. It certainly is good for graphic situations and simplifies file organisation. It uses what is called an ICON or picture command system. Most users, I feel, will have to use MSDOS in the main, and will have to learn to come to grips with it sooner or later. For this reason I will stick to this operating system.

There are a number of users who feel that MSDOS, Microsoft Disc Operating System was poorly planned and was

only an updated CP/M for 16 bit computers, however it is here to stay, (at least another two years), so we may as well try to live with it. One other point to bear in mind is that a number of MSDOS shells have been written to make it more user friendly. Some of these are Public Domain and friendly as they are, I feel they only clutter up the already confused world of the average user.

Disc Drives

No matter what model of Amstrad PC, every one of them will have a drive of some description. Floppy disc drives being the most common and hard discs or cards being the other. It is possible to hook up the Amstrad to another computer via the serial port and not use any drives at all. These drives can be thought of as being similar to the boot of your car. They are a means of keeping all your records or luggage in a safe place. Most of the computer's working data is stored in RAM, ie. random access memory, which is lost at switch off time. Therefore a scheme had to be devised to store this data. Tape recorders originally did this job of magnetic storage, but they were slow and error prone. The floppy disc is similar to the 45 musical record, except it's flexible.

Switching on

Starting up the car seems easy, but for a person who has never done it before it appears very complex. The brake, choke, clutch, ignition, gearstick, fuel tank, and motor all have to work to make the car fire.

The computer is similar in many ways. In order to start up efficiently there are many different combinations for different configurations of computer. Like our car the computer does several things at switch on. Firstly it does a quick internal check to make sure it's not going to blow up (only joking!) then it looks to see which drive you want to start from. Notice the drive light come on every time (hopefully). It then checks for your OPERATING SYSTEM without which it cannot function. MSDOS has a file called COMMAND.COM, which is the heart of the operating system. Together, with a couple of hidden files, these organise data transfers much

better than we could. After loading an operating system, MSDOS looks for an (AUTOEXEC)UTE file to obey. This autoexec file has the file extension .bat as it is a batch file. Batch files are simply lists of instructions for the computer to obey. The above 5 second happening in the computer's life is called "booting" the computer, (probably because when this procedure does not work everybody feels like booting the computer out the window).

Automating Software

When loading MSDOS the computer also loads a number of files called system files (.sys) which set up various features for the individual user. A good example is the config.sys file which tells the computer things like the number of memory buffers, number of files to have open at once, to use battery backed RAM at switch on, etc. These details are in the manual and a real effort should be made to become familiar with them. In the Autoexec.bat file can be placed the instructions necessary to start up a particular software product eg. LOTUS, WS, etc. Whether you have one, two or three disc drives this system can be used. Most single drive users would set up their backed up software discs to be boot discs as well. In other words their software discs should be system discs with COMMAND.COM and hidden files with their software on the same disc. As can be seen, 360K does not allow a great capacity for software, hence the invention of two drives, one being the program drive and the other being the data drive. Two drives allows the user to boot from one drive and get word processor, or whatever software may be required, going all in one and have the data disc in the other disc drive. RPED is the mini editor used to customise these start up files.

Paths and Directories

The business of organising your data is up to the individual. MSDOS does have a system to help us along, though. This system of paths and directories are the thing most beginners, and in fact, most users have trouble with. I can't stress how much easier it will be for the individual user if he or she can grasp these concepts, especially hard disc users. Even if you have to re-read the

manual 50 times an understanding of these file handling ideas will simplify any user's life. The basis of the concept is any office or home filing system. Any box or cabinet of files will have tags to identify each bunch of files. Each of these "bunches" is called a directory. The computer has to know which directory a file is in before it can find it. Otherwise the now familiar "bad command" will come on screen. A path is simply the way for the computer to go to find a file. Eg.

```
\SPSHEET\LOTUS\KEVIN.TAX
```

would tell the computer my tax file can be found by going to the SPSHEET directory then to a sub-directory called SPSHEET\LOTUS and on to the file I was after.

Once these directories are set up by the user the computer should be able to find the files we tell it to go look for. Floppy disc users who have no intention of buying 200 discs should seriously consider whether they should use directories at all. In most cases single floppy users will have boot discs set up with their various types of software on the same disc, and this will help segregate data. Twin floppy users have the extra drive to store their data on, but here again each floppy can hold a maximum of 64 files per floppy so are directories really worth the trouble. Hard disc users will not be able to function without them. The vast amount of data able to be stored really needs a hard disc manager of some description... Quickdos, Xtree, Norton's Utilities or a front end menu system. Another method is to have MSDOS go to a start or batch directory at switch on time. A heap of batch files could be placed in this directory. The user could then select the software required and get it to run via the batch file. Eg. Wordstar might have a batch file that looks like this....

```
PATH=C:\WSTAR;A:\
CD\WSTAR
WS
```

I hope this has been of some help to any PC users. Other users will have their own opinions about Operating Systems, Disc Drives, Directories and Paths and the best way to find out how other users have set up their systems is to ask around.

Firing up CPM - 6

Finishing with utility programs on your system disc and switching to Moving and Dynamic Debugging.

Back in November, Firing up CP/M covered a topic called Device Assignment. Dig out that issue and briefly flick through the section as a memory refresher. The reason for this back-tracking is that I'm about to cover the next setup option: the JOBYTE settings.

What you type must be in this form:

```
logical device, physical device
```

CP/M deals with four 'logical devices', known by the abbreviations CON: RDR: PUN: and LST:. When they were named 30 years ago computers really did use a CONsole, a punched card ReaDeR, a tape PUNch and a LiSTing device.

The physical device can be any one of CRT: TTY: BAT: UC1: PTR: UR1: UR2: UP1: UP2: LPT: or UL1: (as described in November). The two devices must have a separator between them - a space, comma or even an equals sign. There are only a few valid assignments; that is, not every logical device can be assigned to a physical device and vice-versa. The valid ones are:

```
CON: can be TTY: CRT: BAT: or UC1:
RDR: can be TTY: PTR: UR1: or UR2:
PUN: can be TTY: PTR: UP1: or UP2:
LST: can be TTY: CRT: LPT: or UL1:
```

Alternate and IY register saving. Say no to this option. It's too technical. If you know how to use it, you don't need to read this article!

Next is another yes-or-no question.

BIOS message enable/disable?. This does exactly as the question states - either turns BIOS messages on or off, such as the familiar 'Retry, Ignore or Cancel?.'

It's useful to have the option clear or preserve the initial command buffer. The value of this parameter determines whether the initial command buffer is

cleared when a key is pressed. Assuming you've set the option to preserve the buffer, and that it has been set to run a program of your choice automatically, you have, in effect, devised a simple protection scheme for the disc.

Here are three extremely useful routines which allow a degree of control over the disc-drive motor:

1. 'Drive Motor on Delay'. This is the time CP/M allows for the disc to reach speed before reading from or writing to it. It is entered in 50ths of a second. The recommended value is 50 (that is, 1 second). Don't reduce the delay to 0 or you'll lock up your CPC.

2. 'Drive Motor off Delay' is the time the drive motor continues after a read or write. It's also measured in 50ths of a second, and defaults to 250 (5 seconds). The reason the motor spins for such ages is to avoid motor start-up delays; this occurs when two disc operations occur in quick succession.

3. 'Stepping Rate' specifies the time (measured in milliseconds) for the drive head to move (step) across the disc. The recommended step rate is 12 milliseconds.

It is of course possible to enter values other than the recommended ones, but if very small numbers are entered, the drive motor may move too quickly and slip. This will cause numerous read/write errors. Larger values will cause unnecessary disc access delays.

With all these provisos, you may well wonder if it's at all possible to stray from the norm - it is. I have played long and hard with the disc operating system and have come up with a set of values that speed up operation by about 20% but have yet to cause an error message. Enter the figures 35,200 and 10 for 'New motor-on delay?', 'New motor-off delay?' and 'Stepping rate?' respectively. You should then have your CPC

running in a suitably beefed-up state.

The final two options open to user control concern the configuration of Channels A and B of the Serial Interface. The following parameters can be altered on Channel A:

```
Transmit baud rate (50 to 19200
baud)
```

```
Receive baud rate (50 to 19200
baud)
```

```
Data Bits (5,6,7 or 8)
```

```
Parity (Even, Odd or None)
```

```
Stop Bits (1,1,5 or 2)
```

The range of available baud rates is phenomenal. As well as supporting all the standard or common ones, there is virtually every other conceivable baud rate possible. (Show me an inexpensive modem that can handle 19200 bits per second!).

Channel B supports nearly all the functions of Channel A, with one slight difference; Channel B can only transmit and receive at the same baud rate.

That brings me to the end of a very long and detailed look at SETUP - there should be no reason for you to shy away from it any more. Hopefully you have learnt a bit more about CP/M, and realised, if you hadn't already, how harsh it can sometimes be on the novice.

Making space

On occasions it's necessary to construct a version of CP/M which does not load into memory in the normal place. This may be because you wish to reserve some memory for other purposes - CP/M must therefore be moved lower down in memory.

The MOVCPM utility requires the size of memory to be specified and this is done in 'pages'; one page being equal to 256 bytes or 0.25k. If, for instance, you want to move CP/M 256 bytes lower in memory, the command is:

```
MOVCPM 178*
```


A maximum possible size is 179 which would be 256*179/1024 or 44.75k.

If you immediately follow the MOVCPM command with SYSGEN *, the system tracks will be written directly to disc. Whenever you boot-up CP/M, it will then load at the lower memory address.

Debugging and things

The next few items - DUMP, LOAD and DDT - are not for the faint-hearted. If you are not into hexadecimal or machine-code, it's probably best to skip this section. I propose only to mention the files and what they can do - CP/M assembler is much too large and complex a subject to cover here - it would probably put most of you to sleep!

DUMP is first on the list. This is a program that displays the contents of a file on screen. Version 2.2 displays the contents in hexadecimal only, whereas 3.1 shows both Ascii and hex. To dump a file you normally type:

```
DUMP filename
```

One line of a typical DUMP display would be:

```
0010 01 00 30 3E C9 CD 20 01 FE
00 C2 01 10 etc
```

LOAD in version 2.2 and HEXCOM in version 3.1 perform the same function and work in an identical manner. My examples will use LOAD, although substituting HEXCOM would be acceptable.

Both these programs convert a file assembled with ASM (which is dealt with later) into a COM file which can then be run independently. The command is:

```
LOAD filename
```

Now we come to the obscure DDT. The initials stand for Dynamic Debugging Tool. There are many useful facilities to it, but unfortunately it's badly documented.

If a program is written in assembler, you have what is known as 'source' code. This must be assembled using ASM and the result is 'object' code, which is in hex. This is all very well, but if your assembler program is bugged you'll probably have a lot of trouble reading it.

DDT allows you to load the object code (hex) and run it, alter it or display it in either hex or disassembled form -

even the registers can be inspected. Once altered you can save it back as a .COM file.

To run DDT, type 'DDT' and press RETURN. DDT uses a hyphen as a prompt. It's possible to load a file you wish to alter from scratch, with the commands:

```
DDT filename.HEX
```

or

```
DDT filename.COM
```

If a file name precedes the DDT command then the following message appears:

```
DDT VERS 2.2
```

```
NEXT PC
```

```
0800 0100
```

The number '0800' indicates the next free location in memory. The '0100' indicates the current value of the Program Counter - this is the address that the program will execute from.

If no filename is supplied then the message:

```
DDT VERS 2.2
```

is displayed.

Following is a full list of the commands available to you when using DDT:

- A - Assemble - enter assembler code
- D - Dump - display memory contents in either hex or Ascii
- F - Fill - put specified byte in memory from/to address
- G - Goto - execute program
- H - Hex - display in hex
- I - Input - input the FCB for an R command
- L - List - list disassembled contents from/to
- M - Move - move memory block from/to
- R - Read - read file specified by I command
- S - Substitute - replace contents of existing address with something else
- T - Trace - execute instruction(s) outputting register contents in each case
- U - Untrace - execute instruction(s) with register list after last instruction
- X - Examine - alter registers

A lot of the commands can be used on their own, while others need several parameters after them. A break-down of these commands follows:

Here's a table showing how the command can be issued and what parameters can follow - there's also an

example and sometimes a description.

```
D<start address>
```

```
D1200
```

The above command causes 16 lines of hex to be displayed from the selected address.

```
F<start address>,<end address>,<value>
```

```
F0200,0230,23
```

This command will fill an area of memory with a selectable value. The above example fills the memory areas from &200 to &230 with the byte &23.

```
G<start>,<break1>,<break2>
```

```
G110,340
```

The command can take any combination of the above parameter. Just typing G and RETURN causes execution from the address held in the Program Counter. G can have a single parameter after it which indicates where execution is to start from.

Break-points can be inserted - a maximum of two being allowed. Command is returned to DDT when one of these is encountered. Taking the above example, the program execution will commence from &110 with a break-point at &340.

If GO is entered, a warm-boot is performed, allowing you to exit easily from DDT; memory contents are not altered.

```
H<first number>,<second number>
```

```
H41F,23
```

The H command allows for the addition and subtraction of two numbers. The example above causes the result of adding &41F to &23, and the result of subtracting &23 from &41F to be displayed on the screen thus: 0442 03FC.

```
I<filename>
```

```
ITEST.COM
```


Using the above, the FBC (file control block - located at &5C) now holds this information.

L<start address>,<end address>

L100,200

This causes a disassembly to be shown on screen; L can only be followed by the start address parameter, and only 12 lines are disassembled.

M<start address>,<end address>,
<new address>

M112F,2300,4000

From the above; the data between &112F and &2300 is moved to memory location &4000.

R<offset>

R200

Issuing an R command reads the file, whose name has been put into the FCB

with the I command, into memory. It is possible to load the file in at an address greater than &100, by supplying R with a parameter. The above example shows that the file will be loaded in at &300;&100 + &200.

S<start address>

S167

This command allows memory to be edited. Taking the example given, the value currently at location &167 is displayed. If you type a number in, this replaces the old value; typing a full stop (.) returns control to DDT.

Tn

This executes a single instruction, at the location given by the current value of the program counter - the register contents are displayed once the instruction has been obeyed.

If a figure say 12, is placed after the T, then 12 instructions will be carried out. The register contents is displayed after

the execution of each instruction.

X

Typing this command shows the contents of various flags and registers. There are five flags which can either have a one or zero (set or unset). Following is a list of the flags and the meanings:

Flags	Registers
C - carry	A - accumulator
Z - zero	B - BC pair
M - minus	D - DE pair
E - even parity	H - HL pair
I - inter-digit carry flag	S - stack pointer
	P - program counter

This month's Firing Up CP/M may have been more on the technical side, but I'm sure it will be of interest to those who really want to get the guts of CP/M. Next month I'll have a look at ASM.

RAMPAK - Machine code sub-routines

RAMPAK
RAMPAK
RAMPAK
RAMPAK
RAMPAK

MACHINE CODE
SUB-ROUTINE PACKAGE
for Amstrad CPC computers

Distributed by The Amstrad User
1/245 Springvale Rd, Glen Waverley, Vic. 3150 - (03) 233 9661

RAMPAK is an Australian produced product

Nearly 50 Machine Code "bells and whistles" already invented for you!

- Can be easily added to your Basic programs and invoked with simple CALL commands.
- Generates different sized boxes, triangles or text
- Scroll whole screen or window
- Writes sideways up or down the screen and mirror images
- Impressive screen "fade-out"
- Disables or changes key functions
- Plenty of cassette and memory routines

PLUS MANY MORE !!

Only available from The Amstrad User
at \$44.95 for disc or \$37.95 for tape

Ring (03) 233 9661 for your copy
or mail to our normal address

Dealer enquiries welcome

Masterfile III

An overview of the database package from Campbell Systems' stable for 128K CPC

With the release of the Sinclair machines saw the birth of Masterfile from Campbell Systems. Many years later this extremely powerful database has been adapted for all the Amstrad machines. From CPC to PC, Masterfile exists. It's not hard to see why this program is so popular. Masterfile III for use with a 128K CPC is the big brother to the first version of Masterfile, appropriately called Masterfile for the CPC464. It is this version of Masterfile that we are going to look at.

LAYOUT

Many databases for home computers have the limitation of fixed field lengths, making screen layouts limited and using incredible amount of memory.

Masterfile III however does not have this problem. The length of each field is extremely flexible (with a maximum of 240 characters, *ever seen a name that long?*). This allows a smart screen layout and in time saves memory. Masterfile III also allows you to define the screen layout after the data has been keyed in. As well as that, it also allows you to set up multiple screen formats which can access the same set of data.

To type in data, at least one data name must be present. The data name is a single character. Masterfile III uses it as a reference to each field. After a dataname is set up, the field name can

now be typed in. While printing the data name does not show up. For example; for creating a field for a name and a field for an address, you may use the data name A to represent the name, and the data name B for the address. Just over 48 of these data names can be defined, so don't worry, it is unlikely you will need any more than 20. After the records are set up, the data can be entered and added one by one to the main file. With Masterfile III it is easy to add more fields or if you prefer, or to add new fields to certain records only, many of these functions not always possible on a regular "card index" database. Going back to our address file, let's say you have entered 70 records, and you would like to add date and place of birth. Easy, just add two new data names (creating two new fields) and continue on as before, it's as simple as that.

While entering data you may use special commands, either for sorting purposes or for better screen formatting. For example; if you wished to sort by surnames, you do not have to enter the data as, "Muir, Oke" and "Campbell, Glen". Instead you separate each name with a back slash, as follows, "Oke\Muir" and "Glen\Campbell". When Masterfile III comes to print out the data, the backslash is printed as a space. When Masterfile III sorts it sorts with the name after the backslash first.

The Screen output can also be made tidy with special functions. For example; if you wish to put every separate item of an address on a separate line, you would probably have to define a separate field for each line of text. But not with Masterfile III. Text typed as follows into Masterfile III, "1/245, Springvale Road, Glen Waverley, Victoria. 3133." would be printed as such;

1/245 Springvale Road,
Glen Waverley,
Victoria. 3133.

As you can see Masterfile III understands the underline character, (by pressing SHIFT 0) to print a carriage return. It is functions like these that leave other "card index" databases back in the days of the Commodore 64's (*no offence to Commodore owners, Ed.*)

Like most other functions of this package, designing the screen format is made very simple to you. When setting up the screen you must first decide where each piece of data will be displayed. The heading you assign to each field is left entirely up to your imagination, again this heading can be changed at any time. Masterfile III also allows you to draw lines on the screen, adding a very attractive layout to your file. As expected this also can be altered at any time, allowing for major or minor changes to headings.

RELATIONS

For a database to work effectively and fast it is important for it to have relational data facilities. Masterfile III is no exception. Lets move away from the name and address file and set up another file. In this file we will have the following data names and fields;

A: Author's Name
B: Book Title

Now say an author, we'll call him "Ian Sugar", has written 200 books. It would be quiet a feat to type in the authors name and then each book title. So what we do is define "Ian Sugar" as a Parent. We then define all of his books as the Children of the Parent. Using this system we save a lot of memory and it also means it is a lot faster to find all the books written by Ian Sugar. Lets say Ian Sugar gets a name change and his new name becomes, "Sir Edwardo Stephen

The Fourth". What a mouthfull, how would you like to try and remember that name when you wish to look for all of his books? You do not have to. Masterfile III allows you to type a simple two or three letter mnemonic. This should save a significant amount of memory.

NUMBER & FORMULAS

Like programmable and more expensive databases, Masterfile III has the facilities to perform number crunching. To create a formula in Masterfile III you must first run a special program supplied on the disc. This allows you to input your formula or formulas which are then saved to disc with a loading program. To use the formulas you have created you need to run the loading program. When creating the formulas you may only put values into data names which are in the A-Z range.

Some examples of formulas are below;

$$C=INT((A/B)*100)$$

This means: Take the value from data name A. Divide it by the value in data name B. Multiply the resultant by 100, turn the value into an integer and then place into data name C.

Another example could be;

$$\begin{aligned} \text{ANSWER} &= A/B \\ C &= \text{INT}(\text{ANSWER}/100) \end{aligned}$$

The above formula calculates the same as the previous example. However this time it puts the resultant of the division into ANSWER. As ANSWER is not a data name, Masterfile III uses it like Basic would as a variable. While creating formulas, if Masterfile III cannot recognise a symbol it gives it the

value of zero. Like Basic, Masterfile III excepts all the standard math commands. The system however is not capable of field to field numeric calculations on individual records, (*for this you Mastercalc.*).

CONCLUSION

Finally, the manual is extremely easy to use and helps the absolute novice into setting up there very own database system. It also caters for the more experienced users with plenty of pokes and information on setting up the user defined basic area. Masterfile III comes in a attractive cover and is excellently presented. If you ever get lost, getting back to the main menu is never a problem. Although not quiet as powerful as the PCW or the PC versions of Masterfile 8000, Masterfile III is up there with the best.

MASTERFILE III

FOR THE AMSTRAD CPC6128 (ALSO CPC464/664 WITH DK'TRONICS 64K RAM)

FIRMLY ESTABLISHED...

MASTERFILE III is now firmly established as THE filing system for the CPC6128.

For the benefit of newcomers to the CPC machines: MASTERFILE III is a powerful and flexible data filing and retrieval system. All "database" systems require that your data is organised into fields and records. Unlike most, MASTERFILE does not commit you to field lengths or formats, since ALL data is variable-length and optional. Files are not pre-formatted, and only used bytes are saved to disc. Also, unlike the rest, MASTERFILE allows multiple user-defined ways of viewing/printing your data. And unique in its price range, MASTERFILE offers RELATIONAL FILE options, whereby common data can be entered just once and shared by many records. Maximum field size is 240, maximum fields per record is over 50, and maximum file size is 64K. Room for 1,000 full names and addresses, for example. Only one disc drive is required. It is menu driven throughout, and comes with detailed illustrated manual, and example files.

SO VERY VERSATILE...

Just about ANY kind of information can be handled by MASTERFILE. You can EXPORT the data to other systems (eg. PROTEXT/MERGE and TASWORD). You can even merge your own USER BASIC to MASTERFILE for customised file processing, or build new files from other computer sources. The speed of SEARCH of

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.

ALL THIS POWER...

This is no toy thrown together in BASIC and half-tested, but real machine-coded computing power professionally constructed. We have had IBM and Apricot users beg us for a MASTERFILE for their machines - when they had seen the earlier CPC MASTERFILE. All this power is yours for.....

MASTERFILE III costs \$109.95 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).

Send your order now to:

THE AMSTRAD USER
Suite 1/245 Springvale Road,
Glen Waverley,
Victoria 3150.

Tel: (03) 233 9661.

Words Work -2

How to get the most from your wordprocessor and printer

This month we finish off the setup procedure, look at a few tips you have sent in and discover how to get the best results from a printer.

Newword under CPM Plus

CPM Plus has no direct equivalent to CPM 2.2's relatively friendly Setup program. If you want to alter colours, key definitions and the like then you'll need the help of several transient utility commands (found on your system disc).

First copy Newword onto a CPM Plus system-formatted disc - this can be achieved by using CPM 2.2's Filecopy or Pip. If you're using Pip, type this at the A> prompt:

```
PIP a:=b:NW*.*
```

This will copy all Newword files (the stars means "anything") to your newly formatted disc - just follow the prompts. You must also copy Palette and Setkeys (you'll find them on your system disc) to the new disc. Also copy Submit if you wish to create an auto-start disc.

Palette, as its name suggests, is used to select background and foreground colours. To alter colours you must supply parameters after the Palette command, like this:

```
Palette 63,0
```

This gives you a bright white background and border with black text. The first parameter specifies paper and border colour while the second is for foreground (text) colour. In chapter 5, page 25, of the 6128 User Instructions is a table that gives you colours and their associated number.

Key definitions

The Setkeys utility can be used to alter the codes generated by the keyboard. For example, you can define function keys or change keyboard layout from Qwerty to Azerty (as used in France). The way it works is more complex than Palette, though.

A command file must be created using a text editor (that is, Newword or any other word-processor that creates a pure Ascii file). Suppose you want to swap the pound (£) and hash (#) round and you want key f0 to hold the sequence 1KS (this saves the document and lets you carry on editing it in Newword) then, from within Newword, type:

```
57 S "£"  
24 S "#"  
E 128 "1KS"
```

Save this file as KEYS.NEW.

The first two lines illustrate reassigning a key with a single character; the last shows how to assign a string of characters.

The first number is the key number, as found on top of the 6128's drive casing. Then comes the key's state - whether it is typed normally (N), with shift (S) or control (C). In the first example we use S (as the hash is reached by pressing shift and 3). Finally comes the new character in quotes. Control characters can be used here by placing an up-arrow (↑) before the letter.

The last line consists of an E (this tells the computer that an expansion key is going to be assigned). Next comes the function key number - as listed in User Instructions chapter 7, page 22, these range from 128 (for f0 normal) to 159. The last thing to appear is the expansion string.

To create an auto-boot disc that automatically changes screen colours,

sets up the keys and runs Newword, then you'll need to create another file with the text editor. Type this and save it as PROFILE.SUB

```
PALETTE 63,0  
SETKEYS KEYS.NEW  
NW
```

Printer Power

After working hard on a document or letter, you'll naturally want to see it in print. But it isn't always a simple matter of sending the contents of a file to the printer. We kick off this month with Protex.

The Amsdos version of Protex lets you dump files to a Centronics (parallel) printer. If you own a serial printer, you're stuck - unless you have a routine that redirects the output. The CPM version of Protex is slightly more helpful: it has a built-in routine that lets you use a serial printer.

You will know that typing PRINT or just P in Protex command mode sends everything to the printer (in draft mode). You should also have spotted that it leaves margins at the top, bottom and sides of a page. These are the default printing options. By meddling with these options you can alter the layout of the printed document.

All change at default

Make sure you are in command mode; type SETPRINT. This question "Set print options (Y/N)?" will appear. Answer yes. A list of options and their default settings will drop down. You are ready to make changes.

The first item to choose is continuous or single-sheet printing. Unless you need to print on quality paper or headed paper (which is normally available in single sheets) pick continuous.

Then you have the choice of printing in draft or NLQ (near-letter-quality). Normally you'd use NLQ only for the final version. Do check that your printer uses Epson codes, including the one for NLQ, before selecting this option. If your printer isn't Epson-compatible but does do NLQ, you'll need to alter the codes sent to the printer - more of this later.

If you want the printer to roll to the top of a fresh page after printing, ready for the next job, then this can be selected. Otherwise the printer stops after the last line. You can also specify several copies of each document.

Printer stationery comes in two standard lengths: 11- and 12-inch. There are normally six lines to the inch, so if you use 12-inch paper you'll need to alter the page-length option to 72 lines. Unless you say otherwise, header and footer margins will take up some of these.

Once you've finished altering the Setprint options, press Escape. Protex offers to change the control codes sent to the printer (for now say no) or to redefine characters (no again). Save all the changes you have made under a filename such as draft.pd. then you won't have to keep altering options every time you wish to print a file from Protex. Of course you can save as many printer-drivers as you feel necessary. For example, you could have one for draft documents and another for the final version. To load a printer-driver all you type is the command printer draft.pd.

Control codes

You can type printer-control codes within a Protex document. These codes show on screen in inverse video, but not on paper. Control codes turn on and off certain printer functions such as bold, condensed or underlined. You type them as Control-X then any letter from a to z. In general the first occurrence of the code turns the chosen feature on and the second turns it off. So if you type `iwordi` the printer produces word in italics.

Note that the default codes work only with Epson-compatible printers. And not every printer has the full range of

features. So check your printer manual carefully before pulling your hair-ribbons out.

The default driver uses 14 different printer-control codes. This leaves eight unused (plus w,x,y and z, usable even though they don't appear on the screen!). So if your printer has extra functions you can define these. You will have to redefine existing codes if your printer doesn't use the standard ones.

To do this, again type the Protex command SETPRINT. Answer no to "Set print options?" and yes to "Change control codes?" Then type the letter of the control code you want to alter. You must now type the sequence of Ascii numbers that the printer needs for switching that function on. Then type Return. Protex now asks you to type the sequence of codes for switching the function off.

For example, the Mannesmann-Tally printer does not use standard Epson codes for subscript and superscript. So to set this up, press s from the "Define control codes" menu, enter the values 27 83 00 to switch subscript on and 27 84 for off. For superscript pick t and enter 27 83 01 for on, 27 84 for off.

Next month we shall look at Protex's ability to have stored printer commands within a document. And printing from Tasword and other word-processors will be duly covered.

Customizing Tasword 6128

I have programmed some of the function keys in Tasword 6128 in the following way:

```
20 KEY 0, CHR$(19)+CHR$(26)+CHR$(24)
30 KEY 1, CHR$(19)+CHR$(26)+CHR$(24)+CHR$(13)+SPACE$(9)+CHR$(1)+SPACE$(60)+CHR$(4)+CHR$(248)+CHR$(6)
40 KEY 2, STRING$(5,29)+CHR$(198)+CHR$(226)+CHR$(198)+STRING$(4,13)+SPACE$(39)
```

Pressing Control-f0 resets the margins and clears the tabs - setting them to their default values. Control-f1 gives a left margin at column 10 and right margin at 70. Finally, Control-f2 pulls down the contents of note pad 1 at the

beginning of your document. If you store your address in note pad 1 you get a letter heading with no effort at all. Once the address has been printed, the cursor will rest in the correct position for you to type in the date.

Graham Bennett

Hard spaces

Has anyone else noticed that you can get a hard space using Tasword? I was fed up with having letters appear like this:

```
Mr F Bloggs is moving to
5 Erewhon Avenue.
```

The hard space lets me produce lines like this:

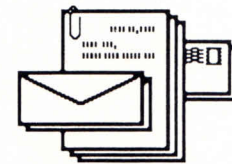
```
Mr F Bloggs is moving
to 5 Erewhon Avenue.
```

The hard space is found in the second character set, which is accessed with Control-\ . Hit the space bar - et voila. The hard space shows on the screen as an inverse space, but prints as a normal space. It hoodwinks the justify function that Mr F Bloggs is all one word, so that it doesn't get spread all over the page.

Allan Webster

Have you a way with words ??

Do you have favourite tricks for getting the best of your word processor? Share them with other Amstrad addicts.



Send them in to:
"Words Work",
The Amstrad User,
1/245 Springvale Road,
Glen Waverley,
Victoria. 3150.

Gallimaufry X

Four more type-ins including a useful League Fixture program and a simple word processor

CASE CONVERTER

In last months mag. you would of read how the PIP command (under CP/M) could be used to convert characters into uppercase, helpful in printing. Owen Cunningham wanted to live in a similar world so designed a program to convert characters to upper or lower case, when printing. The command !UPPERCASE changes everything for the printer - suprisingly - to uppercase. For the opposite effect use !LOWERCASE.

```
1 ' case converter
2 ' by Owen Cunningham
3 ' Amstrad User, Mar(88).
10 MODE 1:MEMORY &8FFF:c=0:FOR n=&9000 TO &905F
20 READ a$:POKE n,VAL("&" +a$):C=C+VAL("&" +a$):NEXT
30 IF c<>9541 THEN 50
40 CALL &9000:PRINT"!UPPER and !LOWER installed":END
50 PRINT CHR$(7);"ERROR IN DATA!"
60 DATA 3A,2B,BD,2A,2C,BD,32,5A,90,22,5B,90,01,15,90,21
80 DATA 2B,90,C3,D1,BC,1D,90,C3,2C,90,C3,44,90,55,50,50
100 DATA 45,D2,4C,4F,57,45,D2,00,4F,57,45,4E,3E,C3,32,2B
120 DATA BD,21,38,90,22,2C,BD,C9,FE,61,39,1E,FE,7B,30,1A
140 DATA D6,20,18,16,3E,C3,32,2B,BD,21,50,90,22,2C,BD,C9
160 DATA FE,41,38,06,FE,5B,30,02,C6,20,A4,41,41,20,3B,37
```

LEAGUE FIXTURES

Here's a handy program for calculating league fixtures. Written by John Holbrow, it will handle up to 100 teams in a football, bowling, darts or any other league.

Assume there are eight teams; the program will work out weekly fixtures so that each team plays the other seven once a week, over a seven week period.

You can choose to send the output to screen or printer.

```
1 ' League Fixtures
2 ' by John Holbrow
3 ' Amstrad User Mar(88)
10 MODE 2:DEFINT a-z
20 INPUT "How many teams in league:";t
30 IF t<2 OR t>100 THEN 10
40 IF t/2<>INT(t/2) THEN t=t+1:by=1
50 DIM fx(t-1,t/2,2)
60 LOCATE 1,3:PRINT"Calculating Week";
70 FOR p=1 TO t-1
80 LOCATE 17,3:PRINT p;
90 x=1:y=t:f=0:w=t-1:k=1
100 FOR c=1 TO w
```

```
110 IF c<>p OR x>y THEN 140
120 fx(p,k,1)=x:fx(p,k,2)=y
130 k=k+1
140 IF f=1 THEN y=x:f=0
150 y=y-1:IF y=x THEN y=t:f=1
160 IF y>0 THEN 190
170 IF x=w THEN y=t:f=1:GOTO 190
180 y=t-1
190 NEXT c
200 x=x+1:y=t-x+1:f=0
210 IF x<>t THEN 100
220 NEXT p
230 '
240 ' ***** Display Fixtures *****
250 '
260 LOCATE 1,5
270 PRINT"Output to (S)screen or (P)printer ?"
280 a$=UPPER$(INKEY$)
290 IF a$="S"THEN s=0:GOTO 320
300 IF a$="P"THEN s=8:GOTO 320
310 GOTO 280
320 PRINT#s:PRINT#s,"Fixtures for";t-by;" teams"
330 FOR x=1 TO w STEP 7:(step 3 if using 40 cols)
340 k=1:ta=0
350 PRINT#s,:FOR p=x TO x+6:(x+2 if using 40 cols)
360 IF p>w THEN 420
370 PRINT#s,TAB(ta);fx(p,k,1);
380 IF fx(p,k,2)=t AND by=1 THEN PRINT#s,"= Bye";:GOTO 400
390 PRINT#s,"_";fx(p,k,2);
400 ta=ta+11
410 NEXT p
420 ta=0:k=k+1:IF k<=t/2 THEN 350
430 PRINT#s,:NEXT x
440 PRINT#s
450 PRINT"Another Copy (y/n) ?"
460 a$=UPPER$(INKEY$)
470 IF a$="Y" THEN 270
480 IF a$="N" THEN END
490 GOTO 460
```

FREEZE

You're in the middle of the game ready to blast the trillionth penguin, and for some reason you have to leave the computer; there's no pause facility - $\Delta \infty \S \diamond \bullet$!! C.P. Wooldridge to the rescue! Run this listing before playing a game. To pause a game (or any program) press Tab; to resume play press Capslock. Now isn't that handy?

Please note that this routine won't work with *all* commercial software.

```
1 ' freeze
2 ' by CP Wooldridge
3 ' The Amstrad User, Mar(88)
10 FOR i=&B460 TO &B48B
20 READ a$:POKE i,VAL("&" +a$):NEXT
30 MODE 1:PRINT"freeze installed"
40 CALL &B460:CALL &B48B
```



```
50 DATA 21,91,b4,06,81,11,7d,b4,c3,ef,bc,21
60 DATA 8b,b4,11,05,00,01,05,00,c3,e9,bc,21
70 DATA 8b,b4,c3,ec,bc,3e,44,cd,1e,bb,c0,3e
80 DATA 46,cd,1e,bb,28,f9,c9,00
```

TEXT EDITOR

Mark Bamshor has written a simple word-processor. It is reasonably short, easy to use, yet powerful enough to produce a document.

Use the arrow keys to move the cursor. Delete and Clear do the erasing. Use Control-S to save, Control-L to load and Control-P to print. Tab moves the cursor ahead five spaces, Shift-Tab changes the case of the letter under the cursor. To justify a line press Shift-Delete. Finally there's Control-[to insert a character-space into the text.

```
1 ' Text editor
2 ' by Mark Bonshor
3 ' The Amstrad User, Mar(88).
30 MODE 2: WINDOW 1,80,2,25: WINDOW #1,1,80,1,1
40 PAPER #1,1: PEN #1,0:PAPER 0:PEN 1: CLS: CLS#1: mapa=1
50 CLS: CLS#1: mapa=1: EVERY 100 GOSUB 530
60 DIM tex$(200): FOR f=1 TO 200: tex$(f)=SPACE$(80): NEXT
70 FOR f=1 TO 24: PRINT tex$(f);: NEXT: a=1: s=1: tex=1
80 PAPER 1: PEN 0: LOCATE a,s: PRINT MID$(tex$(tex),a,1);
90 a$=INKEY$: IF a$="" THEN GOTO 90
100 PAPER 0: PEN 1: LOCATE a,s: PRINT MID$(tex$(tex),a,1);
110 zx$=CHR$(241)+CHR$(240)+CHR$(127)+CHR$(13)+CHR$(16)+CHR$(27)
120 ON INSTR(zx$,a$) GOSUB 250,280,310,340,350,370
130 AUTO 140
140 IF INKEY(8)=0 THEN a=a-1: IF a=0 THEN a=80: GOSUB 280
150 IF INKEY(27)=128 THEN GOTO 400
160 IF INKEY(60)=128 THEN GOTO 450
170 IF INKEY(36)=128 THEN GOTO 530
180 IF INKEY(68)=32 THEN GOSUB 590
190 IF INKEY(79)=32 THEN GOSUB 630: goto 600
200 IF INKEY(68)
210 IF INKEY(24)=32 THEN MID$(tex$(tex),a,1)="#": locate a,
s: PRINT "#";: a=a+1: IF a=81 THEN a=1: GOSUB 250
220 IF tex>mapa THEN mapa=tex
230 IF ASC(a$)>31 AND ASC(a$)<126 THEN MID$(tex$(tex),a,1)
=a$: LOCATE a,s: PRINT a$;: a=a+1: IF a=81 THEN a=1: GOSUB
B 250
240 GOTO 80
250 IF s<24 THEN s=s+1: tex=tex+1: GOTO 270
260 IF s=24 AND tex<200 THEN tex=tex+1: LOCATE 1,24: PRINT
CHR$(10): LOCATE 1,24: PRINT tex$(tex);
270 RETURN
280 IF s>1 THEN s=s-1: tex=tex-1: GOTO 300
290 IF s=1 AND tex>1 THEN tex=tex-1: LOCATE 1,1: PRINT CHR
$(11): LOCATE 1,1: PRINT tex$(tex);
300 RETURN
310 a=a-1: IF a>0 THEN MID$(tex$(tex),a,1)=""
320 IF a=0 THEN a=80: GOSUB 280: MID$(tex$(tex),a,1)=""
330 RETURN
340 a=1: GOSUB 250: RETURN
```

```
350 c$=tex$(tex): z$=LEFT$(c$,a-1): x$=RIGHT$(c$,80-(a))
360 tex$(TEX)=z$+x$+"":LOCATE 1,9:PRINT TEX$(TEX);:RETURN
370 C$=TEX$(TEX): Z$=LEFT$(C$,A-1): X$=RIGHT$(C$,81-A)
380 tex$(tex)=z$+ ""+LEFT$(x$,LEN(x$)-1): LOCATE 1,s
390 PRINT tex$(tex);: RETURN
400 CLS: PRINT "NLQ ? Y/N"
410 v$=INKEY$: IF v$="" THEN GOTO 410
420 IF UPPER$(v$)="Y" THEN PRINT #8,CHR$(27)+"x"+CHR$(1);:
PRINT #8,CHR$(27)+"R"+CHR$(3);
430 PRINT "OK": PRINT "Printing!": PRINT: FOR f=1 TO mapa
440 PRINT #8,tex$(f): PRINT tex$(f);: NEXT: CLS: GOTO 70
450 PRINT CHR$(13);CHR$(13);"Preparing To Save"
460 FOR f=1 TO mapa: FOR g=1 TO 80
470 IF MID$(tex$(f),g,1)=" " THEN MID$(tex$(f),g,1)=CHR$(2
55)
480 NEXT: NEXT: PRINT"Saving..."
490 OPENOUT "text": PRINT #9,mapa: FOR f=1 TO mapa
500 PRINT #9,tex$(f): NEXT: CLOSEOUT: FOR f=1 TO mapa
510 FOR g=1 TO 80: IF MID$(tex$(f),g,1)=CHR$(255) THEN MID
$(tex$(f),g,1)=" "
520 NEXT: NEXT: CLS: GOTO 70
530 PRINT CHR$(13);"Loading...":OPENIN"text":INPUT #9,mapa
540 FOR f=1 TO mapa: INPUT #9,tex$(f): NEXT: CLOSEIN
550 FOR f=1 TO mapa: FOR g=1 TO 80
560 IF MID$(tex$(f),g,1)=CHR$(255) THEN MID$(tex$(f),g,1)
=" "
570 NEXT: NEXT: CLS: GOTO 70
580 PRINT#1,"TEXT EDITOR: column: ";: Line: ";tex:RETURN
590 c$=MID$(tex$(tex),a,1)
600 IF ASC(c$)>64 AND ASC(c$)<91 THEN MID$(tex$(tex),a,1)=
LOWER$(MID$(tex$(tex),a,1)): GOTO 620
610 IF ASC(c$)>64 AND ASC(c$)<123 THEN MID$(tex$(tex),a,1)
=UPPER$(MID$(tex$(tex),a,1))
620 RETURN
630 a$=tex$(tex): oa$a$: FOR f=1 TO LEN(a$)
640 IF MID$(a$,f,1)="" THEN GOTO 800
650 NEXT
660 z=1: IF a$=SPACE$(80) THEN GOTO 800
670 IF MID$(a$,z,1)<>" " THEN GOTO 690
680 z=z+1: GOTO 670
690 z=z-1: a$=a$+SPACE$(z): a$=RIGHT$(a$,80): z=80: x=1
700 IF MID$(a$,z,1)<>" " THEN GOTO 720
710 z=z-1: x=x+1: GOTO 700
720 x=x-1: need=x: a$=LEFT$(a$,80-need): p=0: p=p+1
730 IF p=LEN(a$) THEN p=1
740 IF LEN(a$)=80 THEN GOTO 300
750 IF MID$(a$,p,1)="" THEN GOSUB 730: p=p+1 IF p=LEN(a$)
THEN p=1
760 IF INKEY(18)=0 THEN a$=oa$: GOTO 800
770 GOTO 730
780 c$=LEFT$(a$,p): v$=RIGHT$(a$,LEN(a$)-p)
790 a$=c$+" "+v$: RETURN
800 tex$(tex)=a$: LOCATE 1,s: PRINT LEFT$(tex$(tex),80);:
RETURN
```


Program made plain

Discover a program's secrets: how it works, improvements that can be made and techniques worth remembering. This month we take a trip down memory lane....

Memory

You've played the card game; now play the computer version. James Church has written an entertaining version of the old classic, memory.

The idea is simple: numerous randomly located symbols are placed face-down (in other words you can't see what they are) - there are two of each. Only two symbols can be viewed simultaneously. You must hunt through the lot trying to pair them off. Tricky, because after you see them the symbols flip over - unless, of course, you make a match.

It's not hard to play. After a short period cards or blocks are drawn on the screen. Numbers are displayed along the top and left side of the screen - these act as a grid reference. When prompted, enter a card's reference point: horizontal first.

Space, the final frontier

```
1 ' Memory
2 ' by James Church
3 ' The Amstrad User, Mar(88)
10 GOSUB 70 ' initialize
20 GOSUB 150 ' random selection
30 GOSUB 280 ' print board
40 GOSUB 360 ' play game
50 GOSUB 550 ' end of game
60 ERASE place$,char$: GOTO 10
```

There's nothing complicated in the first eight lines - you've seen it all before. What you may not have seen is ERASE. This command is used to wipe out the contents of arrays: to reclaim memory (ram, that is). The format is ERASE *array name*.

If you try to dimension the same array twice in a program you get an error message - arrays are nasty space-grabbers. Get rid of them once they've served their purpose.

```
70 ' initialize
80 RANDOMIZE TIME: PAPER 0: PEN 1
90 INK 0,0: INK 1,26: INK 2,6: BORDER 26
100 MODE 1: WINDOW#1,1,40,22,25
110 DIM char$(25),place$(10,5)
120 DEFINT a-z: turn=0: sc=0
130 FOR n=231 TO 255: char$(n-230)=CHR$(n): NEXT
140 RETURN
```

Kickstart

Notice line 80 which starts RANDOMISE TIME. You have had

that before - it selects the seed for the random-number generator.

The other two commands on the line choose the background and foreground inkpots. In mode 0 you have 16 inkpots (ranging from 0 to 15); mode 1 has four and mode 2 a measly two. Each inkpot can be assigned any colour from a palette of 27. Indeed, line 90 demonstrates this by altering the colour held in inkpots zero, one and two. At the back of the User Instructions is a list of numbers and the colours they represent.

Windows are useful things. They can be thought of as tiny screens overlapping the whole screen. Text and graphics can be sent to windows - whatever's sent will remain there. It won't overflow into adjoining windows or the main screen. Instead of talking about window 1, window 2 and so on, windows are assigned stream numbers. Stream numbers start at 0 and finish at 9. But only eight can be used as windows: stream 8 is for the printer and 9 for the cassette or disc. And before you ask, yes, you can send (and receive) information on any stream.

Windows are defined simply by WINDOW *stream_number*, *left*, *right*, *top*, *bottom*. To send or receive information a hash (#) followed by the stream number must be placed after the command: PRINT #5, "This is going to window six."

The beat goes on

Lines 110 to 130 are responsible for allocating space to arrays and filling them up. Note that char\$ holds characters from 230 to 255. These are the symbols used in the game - which you'll discover later.

```
150 ' random selection
160 LOCATE 15,12: PRINT "please wait"
170 FOR n=1 TO 25
180 x=RND*10: y=RND*5: IF x=0 OR y=0 THEN 180
190 z=RND*25: IF z=0 THEN 190
200 IF place$(x,y)<>" THEN 180
210 IF char$(z)="" THEN 190
220 place$(x,y)=char$(z)
230 xx=RND*10: yy=RND*5: IF xx=0 OR yy=0 THEN 230
240 IF place$(xx,yy)<>" THEN 230
250 place$(xx,yy)=char$(z): char$(z)="" : NEXT n
260 SOUND 1,200,10,7: SOUND 2,300,10,7: SOUND 4,100,10,7
270 RETURN
```


The random positions of symbols is calculated in lines 170 to 250. Once all the locations are determined the computer beeps at you.

Noise is achieved using SOUND. The command can have seven parameters. To keep things simple, we shall stick to the first four only: SOUND *channel_status, tone_period, duration, volume*.

The sound chip housed inside Arnold has three channels or voices. This means it can play three notes simultaneously. The first parameter (after SOUND) selects which channel or channels the sound should come from. Tone defined the pitch, duration specifies the length of time the note is to be played, and volume is obvious - selects the noise level.

```
280 'print board
290 CLS: c=1: FOR n=2 TO 40 STEP 4: LOCATE n,1
300 PRINT c: c=c+1: NEXT: LOCATE 37,1: PRINT 10
310 c=1: FOR n=2 TO 20 STEP 4: LOCATE 1,n
320 PRINT c: c=c+1: NEXT
330 FOR n=3 TO 40 STEP 4: FOR m=2 TO 20 STEP 4
340 LOCATE n,m: PRINT CHR$(143): NEXT m,n
350 RETURN
```

To position the cursor or text at a particular place on the screen, you need to use LOCATE - as in lines 290, 310 and 340. The parameters following it are stream number (not always necessary), x co-ordinate, y co-ordinate. To place the cursor at the top left corner of a window: LOCATE 1,1.

Dead End

```
360 'play game
370 PEN#1,2: LOCATE 16,21: PRINT "turns=";turn
380 LOCATE#1,1,1: PRINT#1, "co-ordinates: "
390 CALL &BB03: INPUT#1,"square 1 ";a,b
400 IF a>10 OR a<1 OR b>5 OR b<1 THEN 390
410 a1=(a*4)-1: b1=(b*4)-2: PAPER 1: PEN 0
420 LOCATE a1,b1: PRINT place$(a,b): PAPER 0: PEN 1
430 INPUT#1,"and square 1 ";c,d
440 IF c>10 OR c<1 OR d>5 OR d<1 THEN 430
450 CLS#1: c1=(c*4)-1: d1=(d*4)-2
460 PAPER 1: PEN 0: LOCATE c1,d1
470 PRINT place$(c,d):PAPER 0:PEN 1
480 IF place$(a,b)=place$(c,d) THEN sc=sc+1: GOTO 530
490 turn=turn+1
500 FOR n=1 TO 2000: NEXT
510 LOCATE a1,b1: PRINT CHR$(143): LOCATE c1,d1
520 PRINT CHR$(143): GOTO 370
```

In this part of the program that lets you enter the coordinates of the card you wish to examine. Line 390 contains CALL &BB03 - a useful firmware routine that clears the input buffer. Anything typed before the call is lost. Unfortunately the call has the adverse effect of making it impossible to break out a listing. Both 664 and 6128 owners have the Basic

command CLEAR INPUT.

```
530 'test to see if finished
540 IF sc=25 THEN RETURN ELSE GOTO 370
```

Have you discovered all 25 symbols? If you have, then off to 50 you go - otherwise it's back to 370.

```
550 'end of game
560 CLS: LOCATE 14,2: PRINT "you've finished!"
570 IF hiturn=0 THEN hiturn=1000
580 IF hiturn>turn THEN hiturn=turn
590 LOCATE 13,5: PRINT "you took ";turn;" turns"
600 LOCATE 9,7: PRINT "your best is ";hiturn;" turns"
610 LOCATE 11,20: PRINT "another go?(y/n) "
620 IF INKEY(43)<>-1 RETURN ELSE IF INKEY(46)<>-1 END
630 GOTO 620
```

When you have uncovered all the symbols a message tells you how many moves you took. Line 620 waits until you have pressed Y or N in response to the "Another go?" prompt. The INKEY command is used to interrogate the keyboard and report which keys are being pressed. It is much faster than using the INKEY\$ and, although harder to implement, it is much more versatile. It can detect keypresses with Shift or Control as well as normal, or it can be used in such a way that the Shift and Control states don't matter. It can even detect several simultaneous keypresses.

The command is used like this: INKEY (*Key Number*). It is now possible to decipher line 620. If you look at the back of the *User Instructions* there's a table telling you the key numbers for all keys (it's reproduced on the 664 and 6128 case). Look up 43 and you'll find it represents the Y key. Therefore, if key Y is pressed (regardless of its state) return from the subroutine. But if the N key is pressed, end.

TOP DISKS

57 Blackbutt Circle
Mt. Riverview, NSW
2774. Tel: (047) 39 6540

AMSTRAD Work Station - ONLY \$210.00 + freight

- Suits all Amstrad computers -Available in Teak or Beige finish -Compact Ergonomic design
- Professional appearance -Everything in one place -Keeps your office tidy -All shelves adjustable -Good space utilisation -Robust & rigid construction -Readily mobile

Add freight, packing and insurance for work-stations: \$15 - NSW, \$25 - Vic, \$35 - rest of Aust.

3" and 5.25" Floppy disks

Maxell 3" Disks	\$72 per 10
Le Floppie 5.25" DSDD	\$21 per 10

MAXELL DISKS ARE SUITABLE FOR CPC664, CPC6128, PCW8256 & PCW8512 (both drives)

Le Floppie Disks carry a five year warranty
Prices include Post, Packing and Insurance

AMSTRAD GAMES

Send now to the address above for a free catalogue of Disk and Tape games suitable for Amstrad CPC664 and CPC6128.



The Living Daylights

This month we review the game from the latest James Bond film

Domark (Joystick or Keys)

The first Bond game two years ago, *View to a Kill*, was hardly an auspicious affair. All the more reason for Domark to get its second one right - and it looks an awful lot better. I haven't seen the film so I don't know how closely the game relates to it. But that's a good thing: judge the game on its own merits, not the film's.

The game is split into eight sections, each representing a location from the film. You have to fight your way along the right-to-left scrolling levels, facing different dangers on each. You can jump and do forward rolls as you stand or run. Moving the joystick left brings a cursor onto the screen - it acts as a sight for your gun or any other weapon you're carrying.

The first location is Gibraltar. You're supposedly enjoying a harmless test of skill against the SAS. However there's an enemy out to kill you. SAS men pop up in the background scenery and shoot at you; you have to jump over rocks in the foreground that will otherwise trip you up. At the end of the level is the enemy you have to shoot, and then you can progress to the next level.

A strength gauge goes down as bullets hit you or you bump into or fall over things. When it reaches zero you lose one of your five lives and have to start the current level again. Strength can run out very quickly, so you always need to take lots of evasive action to stay alive.

At the end of the level a screen representing Q's laboratory appears. Here you can choose one of four weapons or objects to carry in addition to your ever-present Walther PPK. You have only a

short time to decide, and only one of the objects will be of real use on the next level.

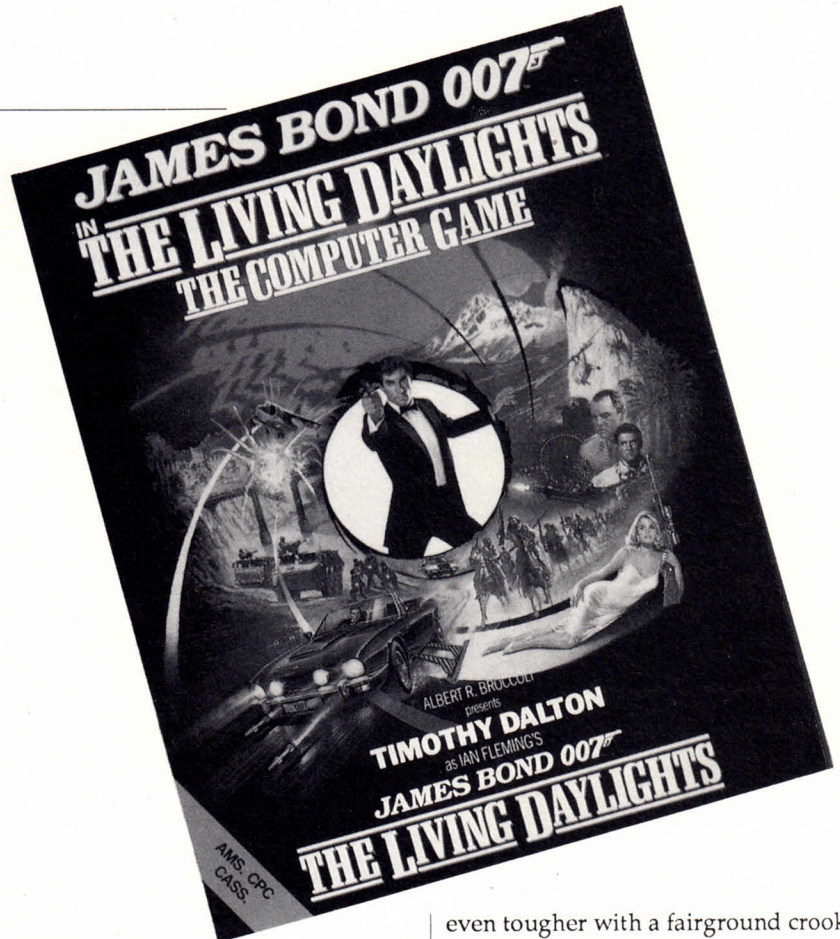
The objects vary from night-glasses and a hardhat on the defensive side to bazooka, missile-firing pen and ghetto-blasters (rockets rather than rock) on the offensive side. Some weapons can be used only once; others will be in continuous use once activated.

On the second level you're joined by Koskov, a KGB defector, who will follow you through the remaining levels. On the third you have to jump over and duck under pipes while men on gantries throw things at you. Next comes a very tricky level where a milkman throws deadly bottles of gold-top at you at the same time as a helicopter bombs you. After that it gets

even tougher with a fairground crook floating lethal balloons at you.

The scrolling backgrounds are nicely done, and so is the animation of Bond and some of the other characters. The action is a bit stop-and-go at times, but there's always something to do - either running and avoiding or shooting. There are some good elements of the Bond music on the title screen and between the levels.

I enjoyed this latest Bond game. It's got plenty of action and difficulty. My main criticism is that with most of the characters who pop up out of the scenery it's impossible to avoid their bullets, and therefore the element of skill is diminished. *Daylights* is not a classic by any means but should provide plenty of entertainment.



Adventuer's Attic

Philip Riley moves in all directions searching for bits and nibbles

It was back in July 1986 that I described a programming routine for using one variable to tell the program if you could move in a particular direction. This system works extremely well if you only wish to move North, South, East or West in your game but if you want to move Northeast and Northwest etc., then a different system is needed. To use the old system would take up eight very long IF-THEN statements that would use up too much memory.

This is where bits and nibbles come in. Eight bits make a byte and four bits make a nibble. (Just out of interest, two bytes make a word and four bytes make a double word, and a group of bytes make a gulp. But this is of no relevance to this article and I don't even know why I mentioned it.) By using the AND command we can in fact check each bit individually. Try the following little proggy.

```
10 a=2:IF a AND 2 THEN ?"PROGGY 1"
20 a=5:IF a AND 2 THEN ?"PROGGY 2"
```

You will notice that only PROGGY 1 was printed, why? Read on and find out. It works in exactly the same way as the SYMBOL command using the binary system. Figure 1 shows you the values of the eight bits and shows you which bit would be set to on for the number two. Figure 2 shows two bits set to on for the number five. The AND command above checks a particular bit or group of bits to

see if the bit or group of bits is set to on.

So how does this help you in that adventure that you are programming. Well now, supposing we used each bit to represent a particular direction as in figure 3. Now as an example, if from the first location in the game we could move North and West then the variable for that location would be $128+16$ which equals 144. If you could move in all eight directions then it would equal 255.

All that you must do is add up the totals of all of your locations and then READ them into a DIMensioned array from a DATA statement. You will then require eight IF-THEN statements to check the direction. You should have a variable that keeps track of your present location number in the game (I use the variable n). So if you wish to move East from a location you would GOTO the line number that checks to see if you can move East. It would look like this in my game.

```
200 IF yp(n) AND 32 THEN
```

What goes after the THEN statement is up to you. Of course if you only have movement North, South, East and West then you will still have four bits to go. You could use them to check for up, down, in and out or you could use them for the next location thus halving the amount of data in the program and saving you vital memory space. I have in fact done this in one game and the

programming is a little more complex. For instance you will need to half the value of the variable n each time that you wish to check your location. Plus a few other little difficulties. For instance you will need to know if n is an even or odd number. The following proggy will find out for you.

```
10 IF n/2=INT(n/2) THEN [the number
is an even number]
```

The rest I will leave to you, after all, half the fun of owning a computer is working out problems like this. Of course this system is not restricted to just movement checking, it can be used anywhere that you need only check yes or no.

This month's finish comes from Mark (Mantis) Nelson. (Why Mantis?) He finished off by saying STAY INSECTICIDE-FREE. So until next month do as he says and I will have something special for you that you may never have heard of before. Yep, that's right it's an attic exclusive.

QUESTIONS

The first question this month is a nice quick one from Mark Nelson concerning Classic Adventure. Where is the platinum pyramid?

Next a couple of questions concerning the hobbit from James Green, how do you kill Smaug and what is the significance of the golden key beside misty mountain and Thrains key from the goblins cache in the dungeon of the goblins.

Now two questions from Cameron Riley (no he is not a relation of mine) He would like to know how to speak to the people in Souls of Darkon and how do

Figure 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	128	64	32	16	8	4	2	1
Figure 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	128	64	32	16	8	4	2	1
Figure 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	128	64	32	16	8	4	2	1
	N	S	E	W	NE	NW	SE	SW

you get enough money to pay the guide. As Cameron has pointed out we have published several questions for this game but as yet have received no answers.

Now for more from James, this time from Lord of the Rings. How can you open the matchbox without being killed by Girili? and how do you get through the forest on the other side of the tunnels of Moria?

James is also getting lost on the upstairs levels of Necris Dome and would like any help that anyone can give.

Michael Fitzgerald would like to know how to get into Caldwell Hillford in Warlord.

The next lot of questions all concern Heavy on the Magick. Firstly this little lot from Karla Slack. What do you need to protect yourself from Astarot, Asmodee, Belezbar and Magot and where are any items that are needed found? Karla is also having trouble with the password for the door where the clue is 'CRY AND ENTER', well the password to this door is 'WOLF'. What does the sign 'SATOR etc' mean and while your at it what do the other signs mean? How do you get out of the dungeons and lastly Karla would like any hints that anyone would care to send in. I think I saw a hint sheet for this game in the editor's hot little hands so maybe we can get this published soon.

Well if you think that we have already published questions for half of the game keep reading because we still have more to go, this time from Jamie Sherrah. He would like to know the passwords for two of the doors the clues to these doors are 'TO ENTER IS MADNESS' and 'THE GREAT SIGN I IN FREE'.

The first attic title of distinction for 1988 goes to Mark Nelson, he is hereby awarded the title of 'SENDER OF THE MOST DESPERATE QUESTION', and the question, concerning neverending story and bored of the rings is HOW DO YOU GET ANYWHERE?

Here's a newy for us, three questions concerning Dundarach from Mark Nelson. Where is the midar shield? What do you do with the pearl marker? and what do you do with the three turning letters in the castle?

But yet more from Mark Nelson, this time concerning Vera Cruz. Are there

any other examinations besides the autopsy? What can you do with the evidence found at the murder scene? Are there any more than nine people connected to Vera? What is the use of being able to track down number plates when the stupid (his words, not mine) witnesses cannot give you the whole number?

Finally, one from Jamie Sherrah concerning Kentilla. How do you get past the ward of disintegration?

ANSWERS

First answer of the month should help a few people who are having trouble getting past the black riders in LOR. Cameron Riley suggests that you get off the highway to Bree as soon as possible, and James Green tells us to leave the ring at home and go after the black riders and cleave their skulls (not for the faint of heart). The positioning of the riders is: 3 between Bree and Michael Delving, 3 in the inn in Bree (what a lot of in's) and 3 between Bree and Rivendell.

Next we go straight onto Neverending Story and firstly an answer for Boaz Kogon from Michael Fitzgerald, get to the glass constructed corridors and go e,e,e,u and say please open door.

Still on the story some answers from Karla Slack. The iron key is in the room with the rats W,NW,N of the large pothole or grave that you will fall into. To survive the grave you need the glowglobe that is East of the gate. The knife is in the kitchen which is underneath the planks in the remains of the ruined building. Remove the planks and make sure you have the glowglobe. Go

D,SE,S. The golden key is west of the torture chamber. You need the iron key to go to the kitchen, go N.W, tie the rope to the hook, go D,D, unlock the cell door with the iron key, go W,W and in the torture chamber throw a coin in the hole and go W. The cape will keep the wraith away.

The dungeon inside the well is N,W,D from the kitchen. The spiders web is W,SW of the large pothole (grave) and you should slash it with the knife. Eat the apple and this will protect you from spider bites.

Evette Gale was having trouble getting started in Warlord, this information from Michael Fitzgerald may help her. Jump into the pool go E,N, climb out of pool and get helmet, jump into pool and go S,W.

Mark Nelson says that you can kill the alien in Gems of Stradus with the sword but you will have to sharpen it on the floor of another room first.

You may remember last year I gave the title of sender of the most unusual letter to Ross Gibbons who wanted to know if it was possible to complete Lords of Midnight. Well we have good news for you, YES IT IS POSSIBLE. Cameron Riley has completed the game it took him 129 computer days to complete and he would like to know what is the maximum number of characters in the game.

For L. Kelley we have the password for the door in Heavy on the Magick. The clue was 'THE WORD IS NO WORD'. Jamie Sherrah says the answer is 'SILENCE'.

And that is it for another month, keep the letters coming in and don't give up hope.

Exclusive to The Amstrad User

ADVENTURE 4-PACK

on tape or disc

All four on one disc - \$32.95

All four on one tape - \$27.95

1. Colossal Cave Adventure
2. Mountain Palace Adventure
3. Time Search
4. Castle Dracula

Ring (03) 233 9661 for Credit Card orders or mail to:

The Amstrad User,
1/245 Springvale Road,
Glen Waverley, Vic 3150

Hint Sheet

JEWELS OF BABYLON

Hint Sheet from John McNeill

Thirsty work climbing those sand dunes, but don't drink the rum - you'll need to carry it to keep the spider at bay. (Obviously Bay Rum!)

Go visit the crab, a friendly fellow who wants to follow you. Unfortunately you must destroy him (by shouting in the appropriate location).

In the cannibal's village: I hope you found "time" to collect a trinket for them. Collect the match and the fruit. The rat and the deer are red herrings which is more than I can say about the red herring. The skull I am not sure about so carry it anyway. It can be safely left in the treasure chamber.

On safari: a ferocious underfed lion. Now we know

the red herring was not a red herring. The sextant could be useful but you must get past the octopus. (Don't tell me you did not take advantage of distracting the cannibals - back you go).

In the swamp and no Crocodile Dundee to help. Never mind, the croc has a severe case of indigestion and the gunpowder will cure it, provided you strike at the right time.

Don't cross any bridges till you come to them. Find the eyepatch and wear it even if it does make you look ridiculous.

Having got this far, the "fruits" of your labour are worthless if you are a bird lover. Otherwise carry on, get the gun and shoot pirates as they appear.

Enter the cavern and you are almost there - except, of course, for another maze. What else did you expect?

Through the maze and all that remains is to walk the plank (not still on the beach I hope). Get the crowbar and - no hints here - something to get you

through the locked door.

The Treasure Chamber: no prizes for guessing what's here, but can you find the shortest way home? When you do you will kick yourself for wasting all that time with move, climb, lift, push, slide, open sesame etc., on that smooth vertical slab of red herring (sorry, rock).

This Hint Sheet earns John a cheque for \$25.

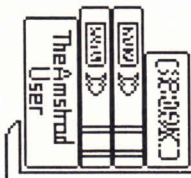
If you want to cash in on your experience, send your solutions (but don't give the whole game away) to:

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

The Amstrad User

MAIL ORDER SHOPPING

Send orders to The Amstrad User
1/ 245 Springvale Road,
Glen Waverley, Victoria 3150
Tel: (03) 233 9661



BOOKS

CPC TITLES

	Subscriber Price	Normal Price
Advanced Amstrad Programming Techniques	\$22.95	\$24.95
Advanced User Guide	\$19.75	\$21.95
Adventure Games for the Amstrad CPC464	Out Of Stock	
Amstrad Compendium	\$20.65	\$22.95
Basic BASIC - <i>New Ed.</i>	\$14.95	\$15.95
Childs' Guide to the Amstrad Micro	\$11.65	\$12.95
Disc System, The Amstrad CPC 464	\$25.15	\$27.95
Dynamic Games for the Amstrad	Out Of Stock	
Filing Systems and Data Bases for the CPC464	\$27.95	\$29.95
Graphics Programming Techniques	\$22.45	\$24.95
High Energy Programs for the Amstrad	\$ 9.95	\$ 9.95
Ins and Outs of the Amstrad	\$20.65	\$22.95
Machine Code for Beginners	\$17.95	\$19.95
Machine Lang. for the Absolute Beginner	\$20.65	\$22.95
Making Music on the 464/664 (OK for 6128 too)	\$19.75	\$21.95
Master Machine Code on your 464/664	\$19.75	\$21.95
Pitman's First Book of Amstrad Games	\$11.65	\$12.95
Powerful Programming for Amstrad 464/664/6128	\$22.55	\$25.05
Practical "C"	\$25.80	\$28.65
Practical Programs for the 464	\$21.55	\$23.95
Ready made Machine Language routines	\$20.65	\$22.95
Structured Programming on 464/664/6128	\$26.95	\$29.95
Whole Memory Guide - 464	\$26.95	\$29.95
Working Amstrad	Out Of Stock	
Writing Adventure Games on 464/664	\$20.65	\$22.95

PCW TITLES

	Out Of Stock	
Amstrad Companion	\$16.95	\$17.95
LocoScript Pocketbook	\$29.50	\$32.25
Mastering the Amstrad PCW 8256/8512	\$29.95	\$32.95
Program your PCW		

CP/M TITLES

CP/M Plus Handbook - Operator's and Programmer's guide for the Amstrad CPC6128 and PCW 8256 and PCW 8512 (Soft 971) by Digital Research Inc. Over 500 pages of everything you need to know about CP/M Plus. This revised edition now includes a GSX supplement	\$49.95	\$52.95
--	---------	---------

LOGO TITLES

LOGO Pocketbook	\$16.95	\$17.95
Practical Logo on the Amstrad (under CP/M+)	\$25.95	\$27.95
Using DR Logo on the Amstrad (under CP/M 2.2)	\$35.95	\$37.95

PC1512 TITLES

	Out Of Stock	
Basic2 - Bk. 2 (Soft 50012)	\$50.00	\$55.00
Business Presentation Graphics on the PC1512	\$29.95	\$32.95
Program your PC	\$37.95	\$39.95
Using DOS Plus on the Amstrad PC1512	\$50.00	\$55.00
Using GEM on the Amstrad PC1512		

All book orders under \$20 are sent free of any postage or packing charges. For all book orders over \$20 please add \$5.00 for postage and packing (regardless of quantity ordered).

As most of the above books are imported, the price and availability may change with-out notice.

BACK COPIES

THE AMSTRAD USER

Issues 1 to 9 each	\$4.00
Note: Mar '85, Jun '85 and Sep '85 are 'Out of Print'	
Issues 10 to 21 each	\$4.50
Issues 22 to 33 each	\$4.75
Issue 34 to 37 each	\$5.25

Tapes for any of the above including those issues Out of Print are available, each at \$5.00

Year Disc 1 - Issues 1 to 12	\$50.00
Year Disc 2 - Issues 13 to 16	\$22.50
Year Disc 3 - Issues 17 to 20	\$25.00
Year Disc 4 - Issues 21 to 24	\$25.00
Year Disc 5 - issues 25 to 28	\$25.00
Year Disc 6 - Issues 29 to 32	\$25.00
Year Disc 7 - Issues 33 to 36	\$25.00

Tapes or Discs not suitable for PCWs or PCs

THE AMSTRAD COMPUTER USER (English)

Jan/Feb '85, Mar, Apr, June '85 each	\$5.00
Nov '85 to June '86 each	\$5.50
Aug '86 to May '87 each	\$6.00
Aug '87 each	\$6.00
Nov '87 each	\$5.00
Dec '87 each	\$5.50
Note: May '85, Jul '85 to Oct '85, Jul '86, Jun, Jul, Sep and Oct '87 are not available.	

Prices include postage on all Back copies, discs and tapes.

Bankcard, Mastercard or Visa accepted on all orders over \$5.00

BINDERS

In white vinyl with silver logos of "THE AMSTRAD USER" on the front and the spine. Protect your collection of The Amstrad User. Each binder holds 12 issues. **Price, including postage, is \$13.95.**

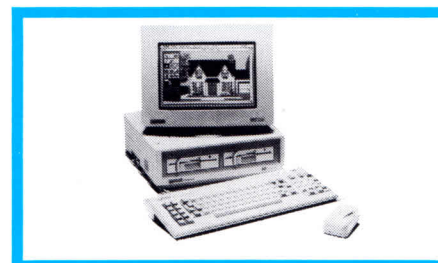
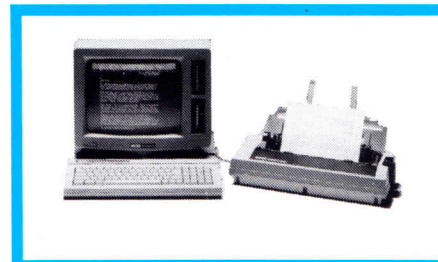
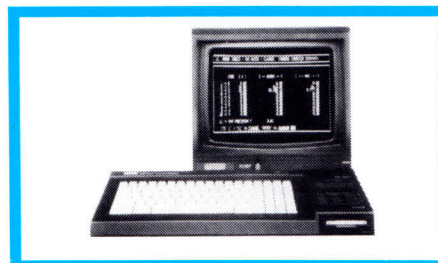
Whether your investment was \$500 or \$2500 ...

... you can't afford to be without The Amstrad User

The Amstrad User is the only Australian magazine which supports the Amstrad range of computers exclusively and has grown to become the leading national magazine for your computer.

It makes sense to keep up to date with what's happening on your doorstep, to learn with advice from other users and our regular articles, to have fun with the many published games or to have assistance in your business software decisions through our independent software reviews.

The Amstrad User is available through most newsagents (if not yours ask for it - it's distributed nationally by Gordon and Gotch) or take out a Subscription using the form below and ensure regular delivery to your home each month.



Please send me 12 monthly issues of The Amstrad User. I own/intend to own a _____

I would like: the Magazine only at \$42.50 Magazine plus cassette of programs appearing in that issue at \$80.00 (tapes are not suitable for PCW or PC owners)

I wish my subscription to start with the current issue or Please start at Issue No

I enclose a cheque or please charge my Bankcard, Mastercard or Visa for \$ _____

The number is _____ The card expires on _____

Name _____ Phone number _____

Address _____

_____ State _____ Post Code _____

Return this form to: THE AMSTRAD USER, Suite 1, 245 Springvale Road, Glen Waverley, Victoria 3150 or ring (03) 233 9661 for further information.

For subscriptions to Papua New Guinea, New Zealand, Solomon Islands, Vanuatu or New Caledonia please add \$21 airmail. For Fiji, Brunei, French Polynesia, Indonesia, Kiribati, Malaysia, Nauru, Niue, Samoa, Singapore, Tokelau Islands or Tonga please add \$27 airmail.

MASTERFILE 8000

FOR ALL AMSTRAD PCW COMPUTERS

MASTERFILE 8000, the subject of so many enquiries, is now available through The Amstrad User from Campbell Systems in the UK.

MASTERFILE 8000 is a totally new database product. While drawing on the best features of the CPC versions, it has been designed specifically for the PCW range. The resulting combination of control and power is a delight to use.

Other products offer a choice between fast but limited capacity RAM files, and large capacity but cumbersome fixed-length, direct access disc files. MASTERFILE 8000 and the PCW RAM disc combine to offer high capacity with fast access to variable-length data. File capacity is limited only by the size of your RAM disc.

A MASTERFILE hallmark is the provision of multiple, user-designed display formats. This flexibility remains, but now it's even easier. With MASTERFILE 8000 you design your formats "live"; no more questionnaires, just move your format effects around the screen using the cursor keys!

Record updating is even easier than before - just steer your cursor to any field on the screen and then insert/erase/alter as required.

Special options are provided for handling dates and surnames, and column totals can be generated.

All screen work is done graphically - and hence we offer unique panel, box, and ruled line options. Choose the line spacing at pixel resolution - you will be amazed how much clearer 9-pixel lines are than the usual 8-pixels. (Study the picture.) And all this faster than CP/M normally lets you paint the screen! PCW printer functions, under menu control, are provided.

Any file can make RELATIONAL references to up to EIGHT read-only keyed files, the linkage being effected purely by the use of matching file and data names.

You can import/merge ASCII files (e.g. from MASTERFILE III), or export any data (e.g. to a word processor), and merge files. For keyed files this is a true merge, not just an append operation. By virtue of export and re-import you can make a copy of a file in another key sequence. New data fields can be added at any time.

File searches combine flexibility with speed. (MASTERFILE 8000 usually waits for you, not the other way around.) You can even assign subsets of a file into one or more of seven pigeon-holes for subsequent reference or further manipulation.

Megaglomerate Ltd

Sales Contact : Martin McManis		Mega House	
Telephone : 0245 654321		143-145 London Road	
Reference : MGL		Chelmsford	
Date of last order : 14 Aug 86		Essex CM12 5DG	
Value to date : £31,455.00			

Ref	Maker	Model	Specification	Price ex VAT
C5001	Epson	FX85	100cps 40MLA 00col	£310
C5002	Epson	FX105	100cps 40MLA 122col	£410
C5003	Epson	FX100	100cps 132col	£195
C5004	Epson	LX80	100cps 22MLA 00col	£435
C5005	Epson	LX800	100cps 40MLA 132col	£575
C5006	Epson	LX1000	100cps 40MLA 00col	£275
C5007	Epson	LX1000	100cps 40MLA 132col	£395
C5008	Epson	AS5	100cps 45MLA 00col	£225
C5009	Canon	AS5	100cps 45MLA 00col Colour	£370
C5010	Canon	SS10	100cps 45MLA 00col	£240
C5011	Juki	5520	150cps daisywheel	£650
C5012	Juki	6200	30cps daisywheel	£500
C5013	Juki	6300	25cps daisywheel	£390
C5014	Juki	6300	220cps 50MLA 132col	£1,795
C5015	Fujitsu	DX	8 page min 04	£2,700
C5016	Fujitsu	LMP5A1	8 page min 04 graphics	£1,500
C5017	Canon	LBP8A2	8 page min 04 graphics	£2,650
C5018	Canon	Laser	100cps 50MLA 00col	£285
C5019	HP	Laser		
C5020	HP	HP-810		
C5021	Taxan			

W - Hold on key
 Drive: A File: MCGMARE Records: 00021 Selected: 00021 1: Buf Format: 1

Customer Details and Invoices

British United Freight		Tel: 0452 6
493 Western Avenue		Contact: Mike
Gloucester		Ref: BUF
GL9 5JN		

Invoice	Tax point	Amount	Date paid	Co
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	£883.55	04 Dec 87	Cash with order
Totals:		£3,253.90		

Date of invoice

Drive: A File: INVOICES Records: 00017 Selected: 00009 Key: Format: 1

MASTERFILE 8000 is totally menu-driven, fully machine-coded, and comes with example files and a detailed manual. We claim (modestly) that you will not find another filing system with such power, flexibility, and friendliness.

MASTERFILE 8000 costs \$119.00 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 orders are welcome, written or telephoned, quoting the card expiry date.

Send your order now to:
THE AMSTRAD USER
 Suite 1/245 Springvale Road,
 Glen Waverley,
 Victoria 3150

Tel: (03) 233 9661

Keyed files are maintained automatically in key sequence, with never any need to sort. You can have unkeyed files too, where records can be inserted at any point in the file.