

The Aussie Mag
for Amstrad owners

THE AMSTRAD USER

PCW
Software
Competition

See Page 51
for details

Issue No. 29

\$3.75

June 1987



- *Sideways Printing on the CPCs + Programming Tips + Reviews of Hive and Gauntlet*
- *Competition for PCW owners + Spreadsheets + Reviews and Type-ins*
- *GEM Paint + First Choice for PC1512*

FOR THE NOVICE & EXPERIENCED USER

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THE AMSTRAD USER

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June 1987

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For Tape subscribers, the programs can be found at the following approximate positions:
Side 1: SIDEWAYS - 12, GEN1.TXT - 49, GEN2.TXT - 59, BORDER - 87, BOX - 98, DOUBLE - 110
Side 2: TILES - 13, DOTTY - 33, POKE1 - 44, POKE2 - 54, POKE3 - 63

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

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\$37.50 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: Letters \$5.00, Cartoon \$5.00 and a rate of \$10.00 per page for programs, articles etc. Contributions will not be returned unless specifically requested coupled with a suitable stamped and return addressed padded bag (for tapes or discs).

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THE AMSTRAD USER

G'day,

The first of, I suspect, quite a few peripherals to be produced by Amstrad appears on the front cover of your magazine this month. It's the DMP 4000 printer. Although it is designed to operate with the new PC1512, it can be hooked to any computer with a standard parallel output, and that means the CPCs. The 15" wide carriage will no doubt be an attraction to spreadsheet enthusiasts. It should also work on a PCW through a CPS8256 interface.

The full details of the DMP 4000 will, of course, be published as soon as we can lay our hands on one. The price will probably be around \$799 and should start appearing in the shops in August.

It's a constant battle to keep everybody happy - games players object if we get a bit serious, hackers object if we get a bit light-hearted - who said "you can't please all of the people all of the time"? Some CPC owners argue that the 'Serious Side' section, which was originally intended to cover the PCW machines and later the PC1512, tends to eat into their space. On the contrary, look at this month's 'Serious Side' and see what's on offer for CPC owners.

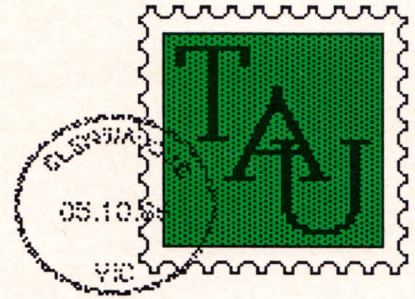
Tip-offs has a bit on Logo and SID.COM, John Hughes' Basic Tutorial is just as relevant to CPC owners as it is to PCW owners. The Money Manager review on Page 37 is relevant, so too the reviews on Leather Goddesses of Phobos adventure and Stockmarket investor's software. Then there's the article discussing Spreadsheets and the Biorhythm type-in. There's a lot more than at first meets the eye.

Following the great success of our Aliens competition (with thanks to Imagineering), another appears on Page 51, this time for PCW owners as I promised in April. It's a golden opportunity to win one of three pieces of software, courtesy of ISD. Good luck!

See you next month,

Ed

Letters



In the March 1986 issue, Adam Hanieh made a comment on how to reduce software piracy. His solution was a little drastic as software houses could not afford to lower their prices that much (\$200 to \$30), but it would be a start to reduce them by 25%.

A realistic solution that would stop piracy cold is to use a device to decode a message to get into the game such as the one used in Digital Integration's "Tomahawk". It does not detract from the enjoyment of the game and is impossible to "break into" without the little plastic lens.

Finally, I am extremely interested in how people develop POKEs. Perhaps you can run an article on it.

Mark Carey-Smith, Grafton NSW

Some will argue that while the Lenslok system provides a good protection, it is sometimes frustratingly difficult to get past that stage before the game is played. But while piracy abounds the software publishers can't be blamed for protecting their investment.

In this month's issue you will find an article by Ian Barnes covering some aspects of PEEKing and POKeing. If you are talking about developing "cheats" then perhaps one of our clever readers can put something together for the benefit of all.

Although I have had my PCW for half a year I have finally bought a copy of your magazine. As I intended to use the machine more on the "serious" side, I have so far stayed away from computer magazines due to their compulsion of publishing games reviews and simple games rather than get to grips with the rest of the computer's abilities.

The issue I have just read is the April

one and I now feel obliged to add my bit to it. The magazine, like the Amstrad machines themselves, is aimed at a much wider audience than one assumes at first glance. For this effort I congratulate the editor and I intend to keep up with the publication as long as the wide variety of articles remains.

I would also encourage all PCW owners to take note of any problems they encounter even if they do find a solution to it. Someone else will have encountered the same but may not have solved it! The April issue has just shown me a few of my errors.

J.G. Boers, N. Yunderup, WA

The trick is to keep the magazine balanced, or as you put, to maintain a wide variety. Alas, as we are, in the main, dependent upon readers contributions, this is not always possible. The article you enclosed with your letter is certainly of interest to other readers and has gone into the "probables" pile - many thanks. Other PCW owners please note Mr. Boers' comments in the last paragraph and keep us informed.

Help needed with Mini Office II

I recently purchased Mini Office II and found on going to the "Spreadsheet" option and then the "Edit Spreadsheet" option that pressing the G key (Go To Cell), the parameters shown on the screen will not allow me to Go To any cell as the manual advises.

The problem appears to be worse if an 80 character screen mode is selected and a 20 row Spreadsheet desired. In this instance, the G key will only allow you to go to row 3.

John Kelly, Seven Hills, NSW

All correspondence published in this section earns a payment of five dollars.

Letters should be addressed to The Editor, The Amstrad User, Suite 1, 245 Springvale Road, Glen Waverley, Victoria 3150.

We regret that we cannot enter into any personal correspondence.

Mini Office II is great, and the word processor has a lot of facilities and runs well. The problem is with the Database after setting up is completed. It does everything it's meant to do - sort, calculate, load, save - but the thing won't print horizontally. It prints OK in vertical mode.

In print mode, if I select anything that involves a formula, either the factors of the result after the formula, the printer does one line and then the screen displays the menu again. I am using a Silver Reed EX43N with a Silver Reed I/F40 parallel interface.

Greg Barrett, Bayswater, WA

If we understand your problem correctly, Mini Office II will not print 'sideways'. The manual explains that upto 132 characters can be printed across a page (assuming you have wide enough paper) and if the spreadsheet is wider than this, it will formfeed and continue on the next sheet. You then have to 'cut and paste' with scissors and sticky tape. Has anyone any other suggestions?

Do any of your readers know the escape codes for a FAX-80 printer and a clue to stop double line feed when using the Mini Office II word processor?

R.W. Jones, S, Wentworthville, NSW

I am replying to D. Beltrami's request in Issue 26 (screen dumps for an LP-1 Light Pen). I own a 6128 and have the same trouble with The Electric Studio light pen program - the screen dump routine is only for the DMP-1 or Epson printers. Well, in the DMP-2000 user manual on Appendix 2 page 6 was the best alternative I had. So I added the following lines to that program:

```
10 MODE 1
20 LOCATE 5,5: INPUT "Please
  enter the name of the design ",
  name$
30 MODE 0
40 LOAD "!" + name$
```

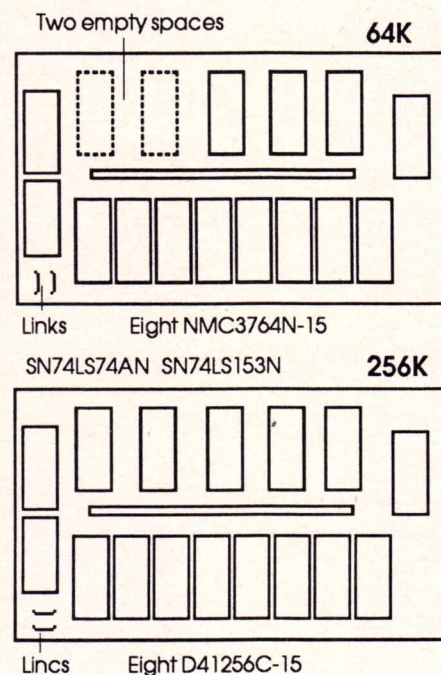
When the input on line 20 comes up you type in the name of the picture file you drew and saved. It then loads it and continues with the program. The

dump is a bit-image and takes 20-30 minutes but the end results are pleasing.

Stephen Colley, Dysart, QLD

For DK'tronics 64K Memory Expansion owners. If you change your eight NMC3764N-15 ram chips for D41256C-15 or D41256C-12, add a SN74LS74AN and a SN741S153N into the two empty places, and change the two parallel links in the top left corner of the board you will end up with the 256K expansion which uses the same circuit board.

Being all in a row and socketed, the eight ram chips are easy to find and replace but it is necessary to either add sockets or solder the two extra chips into the two places provided. As for the two links, I just cut them and soldered them the other way.



I'm not the greatest person with a soldering iron, so if I can do the mod, most 256K would-be owners should have no trouble.

P.S. The Amstrad RS232 goes great with a Maxam or Utopia rom instead of the SET_SIO rom that comes with it. It's a matter of unplugging the original and inserting another rom.

Roy Binly (?), Wantirna, Vic

I was very interested in the text enhancement section by Ian Barnes in The Amstrad User (April 1987) as I have a few similar routines myself. The following is an underline routine:

```
10 'Underline Text Demo
20 CLS
30 T$="THIS IS UNDERLINED TEXT"
40 X=2
50 Y=2
60 GOSUB 1000
70 END
80 '
1000 LOCATE X,Y
1010 FOR A=1 TO LEN(T$)
1020 PRINT
1030 MID$(T$,A,1);CHR$(8);CHR$(22);
CHR$(1);" ";CHR$(22);CHR$(0)
1040 RETURN
```

Chris Wooton, Mornington, Tas

Following your RND tip in the April '87 TAU, I offer you an even more random version for creating random numbers.

```
10 REM Random number generator
20 IF FIND$("rnd.seq")="" THEN
  number=1;GOTO 40
30 OPEN "I",1,"rnd.seq";INPUT
  £1,number:CLOSE 1
40 PRINT "Press any key to
  continue":WHILE INKEY$="" :number
  =number+1:WEND
50 rand=SQR(number)-INT(SQR
  (number));OPEN"O",1,"rnd.seq":
  WRITE £1,number:CLOSE 1
60 RANDOMISE rand
```

The method depends on maintaining on disc a sequential file, holding a single number which increments continually whenever the file is open. On a key press, the program extract the decimal part of the square root of the number, and returns it as the random number seed.

The sequential file remains on disc, and can be accessed from any Basic program on the file. If "number" becomes too large, a line can be added to return its value to 1.

Incidentally, I believe that "While Inkey\$="" :WEND" is a better sequence than that shown as the final example of "Inputs without question marks" in the same article.

Barry Hoole, Shepparton, Vic

In regard to Mr. David Bennett's letter (TAU April), I also have a 664 but find no problems in loading Firebird games. I have noticed however, they do not load at a lower than usual volume. I suggest 664 owners take the following action:

1. Ensure your tape recorder is up to scratch. Clean the heads and, if possible, check the alignment.
2. Load the tape. After a while the screen will read Loading 00, and the address will change. Watch it carefully!
3. If at any time it reads Rewind tape, stop the tape at once, adjust the volume downwards and try again. If the tape still fails to load, keep adjusting the volume until it does load. When you have found the correct volume, make a note of it for future use.

A point on aligning tape recorder heads. I use a utility from Interceptor Software (distributed by Ozi-Soft)

called Azimuth Head Alignment Tape. This utility is very user friendly and comes complete with bonus game with which you can check if the heads are aligned correctly, as it is saved at 2000 bauds and the heads have to be near perfect.

Andy Hurt, Richardson, ACT

And the Winners are. . . .

The ALIENS competition was a great success judging by the number of entries received. The first three correct entries (drawn in the offices of Barristers and Solicitors Waters and Hession to ensure fair play) were:

- P. Mezzavia, Geelong, Vic.*
- Mark Arnold, Smithton, Tas.*
- S. Battye, Tullamarine, Vic.*

A copy of ALIENS has been sent to each of the above courtesy of IMAGINEERING.

THE LIGHTHOUSE
We thought that we had eliminated all the control characters in the Lighthouse listing which appeared in three parts from January to March this year. Alas, line 200 was missed. The PRINT statement should be PRINT"← ←"; :GOTO 170
The "←" is achieved by pressing the CTRL key and "H". Sorry!

ADVERTISING DEADLINES

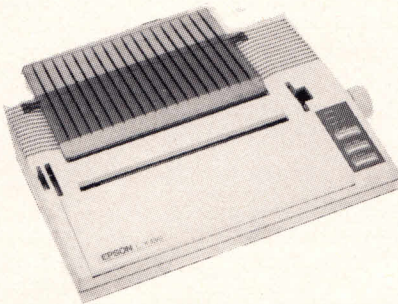
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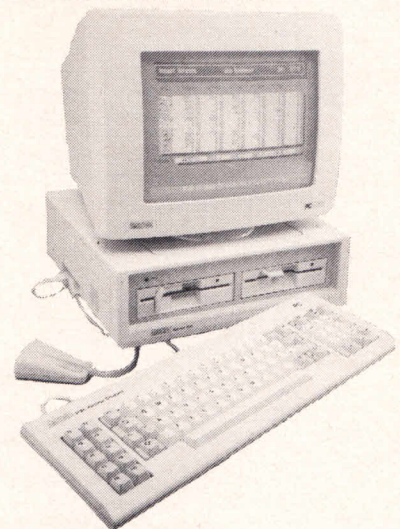


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NATIONWIDE USER GROUPS

The first group devoted to Amstrad's IBM compatible, the PC1512, has been established in NSW. The **Sydney PC1512 User Group** may well be the first of many. We hope so.

Please keep those newsletters coming, and remember the closing date for amendments to this list which is normally shown at the end of the listing. Please also note there have been a number of changes due to AGMs. It is in your interests to keep us up to date.

WESTERN AUSTRALIA

ALBANY AMSTRAD USER GROUP

President: Gerry Barr (098 41 6884)
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This small group is affiliated to AMSWEST (Perth). For further details contact George Muscat on (097) 61 1488.

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West Branch (Tom Price)

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 Venue: Third Tuesday of each month from 8.00 pm. Ring above number for address.

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 Secretary: Tim Eckert
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 Venue: Education Centre, 370 The Terrace, Port Pirie every 2nd and 4th Monday from 7.30 pm.
 Mail: The Port Pirie Amstrad User Group, c/o D.T. Green, 207 Senate Rd., Port Pirie, SA 5540.

SOUTH EAST AMSTRAD USER GROUP (SA)

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

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VICTORIA

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 Mail: PO Box 947, Morewell, Vic 3840

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Contacts: Wayne Urmston (03 744 2719)
 Ken McMaster (054 22 2620)
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 Venue: Senior Campus at John Paul College, Frankston every third Tuesday from 7.30 to 10.30 pm.
 Mail: The Secretary, PO Box 100, Seaford, Vic 3198.

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Contact: Brad Maisey (053 44 8356)
 Venue: Cnr. Charles and Appleby Drive, Cardigan Village on the first Sunday of each 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: Neale Yardley
 Secretary: Steven Walker (062 58 2323)
 Treasurer: Roger McLennan (062 82 3064)
 Venue: The Oliphant Building, ANU, Canberra on the first Wednesday of each month from 7.30 pm.
 Mail: PO Box 1789, Canberra, ACT 2601.

USER GROUPS

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

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Venue: Springwood Neighbourhood Centre, Macquarie Road, Springwood on the fourth Wednesday of each month at 8.00 p.m.

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Venue: Orara High School, Joyce Street from 7.00 pm. on the first Friday of each month.

FAIRFIELD MICRO USER GROUP

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Venue: Room 65, Canley Vale High School, Prospect Road, Canley Vale every third Wednesday from 7.00 pm.

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Venue: AGA Germania Club, Berkeley at 2.00 pm. every third Saturday.

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Sec/Treas: Chris Rosolen (066 216 810)
Venue: CYSS Hall, 16 King Street, Lismore on the last Tuesday of each month from 6.30 pm.
Mail: PO Box 88, South Lismore, NSW 2480

NAMOI AMSTRAD USERS GROUP

Contact: Martin P. Clift, JP (067 92 1333) B/H (067 92 3077) A/H
Venue: Narrabri Technical College, Barwan Street, Narrabri on the first Saturday of each month at 2.00 p.m.

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Venue: Kotara Public School, Park Avenue, Kotara on the first Tuesday of each month. Contact the above for meeting times.

PCW AUSTRALIA GROUP

Contact: Reuben E. Carlsen
Venue: Permanent venue to be arranged shortly. Meetings planned for the second Tuesday of each month from 7.30 pm.
Mail: PO Box 1879, North Sydney, NSW 2060.

PORT MACQUARIE AMSTRAD USERS GROUP

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

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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 either the Secretary or Treasurer between 6.00 p.m. and 9 p.m.

SYDNEY PC1512 USER GROUP (next column)

Contact: Geoff Craine (02 76 6467) A/H (02 412 9213) B/H

Venue: To be arranged; meeting initially on the third Tuesday of each month at 7.00 pm.

QUEENSLAND

BRISBANE AMSTRAD COMPUTER CLUB

President: Paul Witsen (07 393 4555)
Secretary: John Roberts (07 283 3349)
Treasurer: John O'Connor (07 271 3350)
Librarian: Peter Golledge (07 376 1651)
Venue: Main meetings at in Room 15a of Junction Park State School, Waldheim St., Annerley starting at 7.30p.m. Another is held at Wynnum Central State School, Florence Street, Wynnum Central on the first Saturday of each month at 1.00p.m. The co-ordinator is Warren Kennedy (07 351 4232). A third is held at Newmarket State School, Banks St., Newmarket on the second Saturday of each month at 1.30p.m. The co-ordinator is Cherry Shrier (07 351 6179).

BUNDEBERG AMSTRAD USER'S GROUP

President: Ray Babbidge (071 72 1223)
Secretary: Ron Simkin
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.

CABOULTURE AMSTRAD USER GROUP

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

CAPRICORN AMSTRAD USERS GROUP

Contact: Graeme Annabell (079 27 4915)
Venue: Waraburra State School, Gracemere on the first Friday of each month at 7.00 pm.

GOLD COAST AMSTRAD USER GROUP

Contact: Mark Abbott (075 31 2114)
Venue: Ashmore Health and Medical Centre, Cotlew St. on the first Saturday of each month at 2.00.
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: Sports Club, Tavistock Street, Torquay on the first Thursday of each month at 7.00 pm.

MACKAY AMSTRAD USER GROUP

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

PENINSULA AMSTRAD CLUB

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: Ken Henry (07 208 8730)
Treasurer: Wayne Stephens (07 287 2459)
Librarian: Brian Moore (07 209 1488)
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.

TOOWOOMBA AMSTRAD USERS GROUP

President: Stephen Gale (076 35 5001)
Vice-Pres: Robert Nisbet (076 35 7025)
Secretary: Malcolm Woodside (076 32 8867)
Treasurer: Peter Fraser (076 34 7032)
Venue: Toowoomba Education Centre, Baker Street,

Toowoomba on the 4th Monday of each month.

TOWNSVILLE AMSTRAD USER GROUP

President: Ian Wallace (077 73 1798)
Vice Pres: Doug Selmes (077 79 6011 xt 252)
Treasurer: Allan Maddison (077 79 2807)
Secretary: S. Crawshaw (077 73 3933)
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 Wade (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
Publicity 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: Paul Gerard (003 34 0441)
Treasurer: Russell Lockett (003 44 8972)
Secretary: Andrew Blazely (003 93 1687)
Publicity: Marie Griffiths (003 93 6568)
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: John Wilson (004 31 7162)
Treasurer: Peter Cocker
Publicity: Noel Davies (004 31 8490)
Venue: Burnie Technical College, Mooreville Road, Burnie on the third Saturday of each month at 1.00 p.m.

NEW ZEALAND

AMSTRAD CANTERBURY

Contact: Christine Linfoot 459 132
Ian Orchard 524 064
Venue: Four Avenues School, cnr. Madras Street and Edgeware Road, Christchurch 1 on the fourth Wednesday of each month.
Mail: PO Box 23.079 Templeton, Christchurch, NZ.

WELLINGTON AMSTRAD USER GROUP

Contact: Tony Tebbs 791 072 (evgs)
Venue: Room 718, Kirk Block, Victoria Univ. on the last Wednesday of each month from 7.30 pm.
Mail: PO Box 2575, Wellington, New Zealand.

Closing date on amendments to this list for Issue 32 (August 1987) is 26th June 1987

SOFTWARE REVIEWS

Hive, Gauntlet, Hyperbowl, Starstrike II and Infodroid come under critical eyes and fingers

GAUNTLET: US Gold

Anyone who has been anywhere near a Video Arcade in the last year could not have failed to see a revolutionary new game called GAUNTLET. The game has four complete sets of controls so that up to four people at once can play the game. It also features really good sound and digitised speech along with the largest number of bad guys you have ever seen. (These guys have to queue up to take turns at hitting you; there are so many of them.) The idea of the game is that a group of fantasy-type characters (Wizard, Warrior, Elf and Valkyria) operating either as a team or individually, do battle against everything that moves and almost everything that doesn't move on a number of different floors of a dungeon.

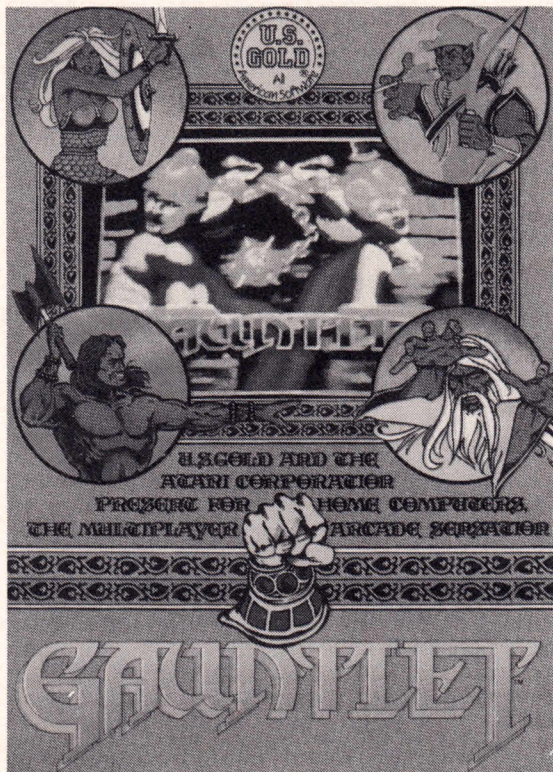
There are about 76 rooms in the original Gauntlet, and after the first 7 rooms which are always the same, the other levels are selected at random so that you never actually run out of levels - they just start to repeat. Each level consists of a floor-plan about 4 screens large with walls, traps, doors, transporters, potions, creatures, generators, treasures and

FOOD. As the players fight their way around the level trying to find the exit they lose health as creatures hit them, and this can only be replaced by eating food, resulting in a race for any food available. Gauntlet fanatics will play for hours, know all the rooms off by heart and when talking about Gauntlet tend to use a specialized sub-set of English which is very useful for confusing other people on the train or bus.

Meanwhile, back at the topic; the horrible people at Atari decided that it wasn't good enough to keep the Gauntlet players away from their work/lunch/classes, they had to hit them at home as well. They also planned to infect the rest of the home computer owners who had until now been able to avoid playing Gauntlet, and hence we have Gauntlet for the Amstrad. Amstrad Gauntlet is amazingly faithful to the original arcade game, with all the traps, doors etc. plus a number of new features. Some of the original features of Gauntlet are missing due mainly to the limit of trying to fit over 250K of game into the 40K available, but this is compensated for easily by some nice touches added by the programmers.

The Amstrad Gauntlet features a screen which is 16 by 10 characters in size, rather than the original 16 by 16, but this is due to the limits of the screen resolution of a home computer in comparison to the arcade original, and does not affect the gameplay. The maximum number of players is only two due to the impossibility of sitting more people at the computer but the players can select any of the original four characters, each of which have their own special faults and features. All the original creatures are present including Ghosts, Grunts, Sorcerers, Lobbers, Demons and DEATH. Whole screens full of these creatures descend on you whenever you enter a room, the Amstrad having no problems moving 40 or so creatures, scrolling the screen and generating the spot sound effects.

One thing that is missing from the Amstrad version is the Thief, who would appear and steal something from one of the players unless he was shot first. Instead we have the more insidious poisoned food, which looks almost identical to normal food, but when you pick it up it will make you lose a magic potion or health if you are carrying nothing. There is a SLIGHT visible difference between this and normal food, but when fleeing from a group of Ghosts it is very easy to forget to check. By the way the creatures have levels, with a higher level creature doing more damage than one of a lower level. Unfortunately the levels are not apparent on the Amstrad game, but since shooting a high level creature will bring it down a level, if you shoot a creature and it is not killed, then it was originally high level. (Unfortunately, by



then it is probably too late for this information to do you any good.)

As in the original game, there are treasures, keys and potions scattered around the levels, picking up treasures will add 100 to your score, picking up keys will let you open up doors, and you carry potions around with you after you pick them up, using one of these will kill a number of creatures. Naturally the Wizard is the best potion user, followed by the Elf, the Valkyria and finally the Warrior whose potions have almost no effect. There are also occasionally special potions with symbols on them, and picking these up will give you enhanced abilities such as extra magic power, shoot power, shoot speed or armor. These abilities are lost first if you eat poisoned food.

Gauntlet is a game that will appeal to almost everyone. The graphics are excellent (if very small), the spot effects are true to the original and a tune is played while new levels are loaded. Incidentally, the game loads each level off disc, but this only a second or two and is normally un-noticeable. There is enough slaughter to satisfy anyone, and a large amount of strategy goes into finding the best places to use potions and keys. A nice touch is that the Amstrad will flip and rotate the rooms so that familiar rooms look totally different. There is also a new disc available with about 500 new rooms which guarantees this game against becoming familiar and boring, as well as making things difficult for even the Gauntlet fanatics.

In conclusion this game has great screen scrolling, can move an incredible number of creatures on screen, and plays well. The screen, which appears to be looking down on the action from some height above the game is a very good way of displaying the action, and the slick production puts the imitators like Druid and Dandy to shame. A lot of time has been put into producing this game, and the end result is a game you can play for hours and not get jaded. The only complaint I have with the game is that the HEALTH counter will not go over 9999, and the score multiplier for picking up treasure is left out. By the way my top score on the arcade version of Gauntlet is 4.5 million per coin (it took 7 hours), so beat that if you can.

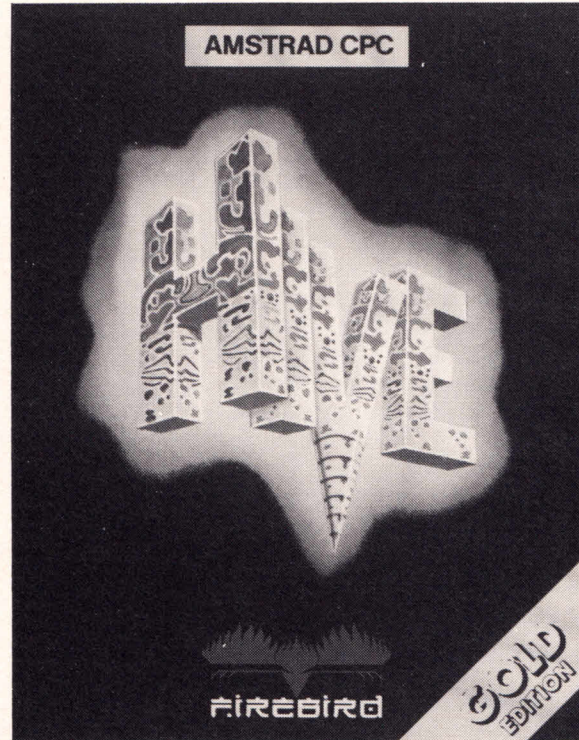
Ian Barnes

HIVE: Firebird

There's good news and there's bad news. The good news is that "Hive" has possibly the most reliable cassette loader ever released. The bad news is that is SLOW. Specifically, getting the game into the Amstrad takes upwards of ten minutes.

Firebird have gone and done something that let's you know what is happening while the tape spools. After the initial loader file is accessed, a screen message tells you it is searching for Block 0. When it finds it, the message "Loading Block n" updates. On a possible data error, the screen tells you to rewind to Block n. Indeed, on the first trial of "Hive", I got a consistent loading error on Block 26 of the screen file and was able to spool to the approximate area on the other side of the tape and continue the load successfully.

After 36 block loads, a wild diagonal ripple scroll displays



the loading screen. Then, a window in the lower left hand corner displays a further searching/loading message. The main file is 8D blocks long, followed by a final file of 2E blocks.

All this takes a long time -- nearly three minutes from start to loading screen. It does give you time to read the lengthy insert describing the game play, however.

Just as in Elite, a multiplicity of keys are required to proceed with the game: fourteen of them control motion, firing, and other necessary functions.

Although the story prologue in the insert is original, I have a sneaky suspicion that Firebird bid and lost for the rights to "Aliens". The objective is to explore the maze, locate and destroy the control centre -- and terminate the queen. Sound familiar?

To accomplish this, your game character, Agent Brabham, operates a SEAC Mk. II robot craft dubbed Grasshopper. The Grasshopper, inside which Brabham rides, can walk, jump, crouch, run, fire various weapons and pick up alien items conveniently useful to Earth technology. These include different types of laser guns, armour, bombs, and best of all, energy units called pylons which can extend the time before you are wasted!

The screen display is split into two parts: a larger section which is a video view of the interior of the hive, and a smaller, but very busy control panel. This shows energy level, a panel of icons depicting items carried, scores, a sixteen-digit code block of the area you are currently in, and indicator for rear attack and one for tunnel junctions, and a graphic representation of the Grasshopper mode.

Hive tunnels and objects are in wire-frame graphics in various colours. This type of display allows for high-speed real-time movement, so much so that one can get completely disoriented. There is a handy compass at the top of the video display, something that would have been useful in "Aliens".

In the beginning, the whole scenario is bewildering. Curious objects appear on screen hurtling toward you. Even when the Grasshopper is standing still, things are happening! More often than not, the red square warning of rear attack is flashing. Half the time, you press the "Z" key to see what is behind you and either the aliens have crashed into you or passed you by. Also more than likely, whilst you are looking behind you, even more menaces are approaching from a tunnel that seemed empty a second before.

The enemy takes many forms: geometrical electronic insects, a unified group of dots that is very hard to shoot, and worst of all, giant demonic faces called Jailers which may scoop you up and imprison you on Level One.

It is possible to escape that prison, by using a key found on Level Two. There are eight levels to the Hive and the player starts on Level Zero. You will quickly find that this is hard to negotiate. Level One is worse, of course. I can only imagine what Level Seven would be like . . .

Moving is easy enough. Pressing the Space key accelerates the Grasshopper. Once you start off, you will find a number of obstacles which practise will allow you to, sometimes, avoid. There are stalagmites to be jumped and stalactites to be ducked under. Crouching the Grasshopper slows the forward motion and both alternate modes shift the point of view and thus the aiming point of the laser.

Of course, the electronic insects attack incessantly. They bleed energy points from you and you lose multiple points by banging into the obstacles. True, you do gain a whole energy point by successfully jumping or crouching at the appropriate time to avoid these obstacles.

You accumulate score points by blasting aliens, and accrue goodies by picking them up – once you know what they are. When in doubt, try "Q". If you're close enough, and the object is not an obstacle or an alien, it appears on the icon panel.

"Hive" would have to be one of the most active games I have ever played. Just try keeping track of fourteen keys, alien attacks, the search for artifacts, and avoiding collisions, all while trying to negotiate an undulating maze of uncertain proportions!

So much is happening all at once that "information overload" occurs time and again. And this brings me to the worst feature of "Hive": once you've lost all your energy, the game terminates by re-initialising the screen display. When multiple alien attacks ensue with an inadvertent collision and a jailer whirls you to the prison, forty or fifty points can be lost in a few seconds. Whoops, game over; too bad, old chap. Try again. Unless you have made a high score on that run, you may have no idea how you did.

The best feature, to be fair-minded, is a superlative control system that recognises multiple key strokes. Imagine, you can accelerate, jump, fire and move the sights in two directions, all at the same time – if you don't cramp

up from RSI first! Seriously, it is a pleasure to find programming that allows for compound input, rather than either–or, like some bad examples best left unmentioned. It's not perfect; there is some interaction noticeable in slowing up of action. One has to accept some compromises in a small machine, after all.

Playing "Hive" is not easy – the same people who complained about the complexity of "Elite" will find this even more difficult to drive. One of the real pitfalls for the player is the icon system. If you pick up an object, the icon cursor is locked onto the new object on the board; this means you have suddenly lost firing capability. Aliens invariably choose this moment to hassle you further. Moving the icon cursor involves hitting the "L" key, using the direction keys to move the cursor, then hitting "L" again to lock the setting. Try this when the Grasshopper is hurtling along at a blinding pace, alien insects at attacking from the rear, and before you, is a dreaded demon Jailer.

The best tactical move against a Jailer is to stop all forward motion, and blast the devil out of him. They can be killed. If you spot him quickly enough and stop, there is every likelihood you can hit him enough times to despatch him before he hauls you to the prison. Even when there, you have some mobility through a couple of short tunnels and can amass points by shooting the electronic insects. Curiously enough, you may even get attacked again by a Jailer.

When he captures you, the video display blanks out and the compass whirls.

As mentioned before, the compass is a real aid. There are so many tunnels and junctions, one will need a good deal of time to map out the internal structure of the Hive. A Yellow square illuminates when you have passed a junction.

One then has to stop the Grasshopper and turn it physically, using the direction keys. Although the direction keys are operational when in forward motion, one cannot actually turn around in the tunnel, only choose a forward branch or adjust the laser gun position.

There are three electronic markers to help in charting. They are icon numerals 1,2,3 and can be dropped at any point, thus marking your trail. This will probably be called upon often, as when one turns, it is difficult to determine which of two or three tunnels now seen is the one you came from.

Firebird kindly provide you with a little drawing of Strata Zero. The rest is up to you.

The code block referred to earlier is a means of starting the game from an advanced position. Each time the player moves through a gate, an arch-like graphic in a tunnel, the 4 x 4 alphanumeric array changes. This given code can be entered in so-called "freeze" mode. This location then becomes the start and default initialisation point for subsequent games, or until entry of another code group.

Freeze mode also enables the player to reverse the x and/or y direction keys, or abort the game. The latter is seldom necessary, unless one has been imprisoned without a key. Aside from the prison, there are also other gates and appropriate keys within the maze of the hive.

Lots of sound effects exist in this game and they are quite handy. The relative speed and attitude of the Grasshopper

are mimicked by the sound. This can assist the player when a lot is happening and one hasn't the leisure to inspect the control panel.

With a game this busy, some inconsistencies happen. There is an occasional video glitch and some objects at a critical point cannot seem to decide whether they exist or not. Thus they may blink on and off, or an item will appear clearly, yet not be capable of being picked up. This is only a minor annoyance and, in light of really challenging game play, can be shrugged off.

Tactically, several points should be remembered. In the beginning, it all seems strange. Hordes of unknown objects appear. On the whole, blasting everything in sight is not really the best approach. Go slowly enough to learn to control the Grasshopper well. When you gain confidence, speed can be useful to cover larger areas, but always be ready to come to a screeching halt. Once you recognise objects that are merely obstacles, try to pick up other things at every opportunity. Some items look like nothing in particular but will appear on the icon display and reveal themselves.

Various items of armour and a shield can be found, as well as different kinds of weapon. What they all do, I have yet to find out.

"Hive" has all the promise of a game that will last for a long time, offer plenty of challenge, and truly be value for money. It's not a game I would recommend to a beginner, but then, it wasn't to be easy, and therein lies its appeal.

Joseph Elkhorne

HYPERBOWL: Mastertronic

Simple two-player games made quite a comeback in 1986. The trend is continuing with yet another game, but this time in the budget bracket. Room Ten and Xeno were both interesting head-to-head contests. Now we've got another space-age contest involving two players and a puck.

The game takes place on a rectangular playfield with a goal near either end. The puck starts off in the middle of the field with a ship either side of it. The ships must shoot or bump the puck through the opponents' goal for two points or onto their back wall for one point. The bottom of the screen shows the score and a radar view of the puck and the two ships.

Ships and puck are drawn with vector graphics, very reminiscent of an old Asteroids game. There are ten different ships to choose from, each behaving slightly differently. But the task is always the same: out-score your opponent.

You can take on another player or the computer, which puts up very stiff opposition on any of its three skill levels. When playing against the computer you really are up against it, because it fires so much faster than you - it can blast bullets in the puck's direction and overwhelm you if you're not careful. Well-placed bullets and nudges with the ship can overcome it but it's always a long, hard battle.

Gameplay is complicated by the behaviour of the ships. They can accelerate forward, brake to a sudden halt and spin around. The difficulty in controlling them stems from their inertia and occasional strange movement. In effect the

craft suddenly accelerate rapidly and then bounce back as if striking a wall. The only way to stop it is to move in another direction. None of the ships is easy to control at first, but they vary in speed and manoeuvrability.

Some ships are also armed with homing missiles that automatically head for the puck, but the action is usually so hectic that their value is limited. Much more useful is ramming the ship into the puck at full speed to blast it across the play area.

You can play single games or take part in a tournament against the computer, where you have to defeat five players of gradually increasing skill level.

The graphics aren't very impressive but there's some good music on the title screens. Two-player games can be very competitive. Against the computer it's a constant battle to stay in contention. Should prove very popular.



STARSTRIKE II: Firebird

The original starstrike game, with its vector graphics and Starwars-type format, was a favourite game of mine right up to the point where the disc came too close to a speaker magnet; so I jumped at the chance to review this game. At this point I should mention that the instructions came in 5 different languages, none of which had more than a passing resemblance to English. For this reason the review will not be as complete as it may have been.

The game features solid fill graphics, and these just have to be seen to be believed. The ships and barriers all look really good, and although the graphics are done in the 4

CPCs - GAMEWARE

colour mode, clever use of patterned filling gives about nine or ten different colours. The idea of the game seems to be to clear a series of star-systems which have been invaded by the extra-terrestrial types. You select a star-system and then a planet, and then warp to the planet. One of the best effects in the game happens every now and then when you run into a meteorite storm in hyperspace. As everyone knows, meteorites in hyperspace look like rectangles, and the screen fills with an incredible number of these rectangles each of which seem to be heading straight for your ship. When you arrive at the planet, the game really begins.

There seems to be three different planet types, and each type in each system has different sections. It is very obvious that this program has been written in sections, but the sections fit together well, and all take advantage of the solid fill graphics for various ships etc. Every planet is surrounded by a multilayer defence shield, and this section of the program is fairly good. The shield has a job in it in which some mobile barriers and guns are floating. It seems to be a good idea to avoid running into any of these, but your force field seems to drain sometimes even if you miss everything; the instructions may have cleared this up. Most military or industrial planets also have a defence satellite out beyond the shields, just shoot all the external parts of this to dock with it and disable it.

When you have passed through the shield you will reach the only really disappointing section of the game. No matter which type of planet you have chosen, you must fly around in 3D space trying to shoot a number of space-ships which seem hell-bent on crashing into you. It is very hard to find the enemy ships as they are normally behind and /or under you, and the controls are very slow. If you can get a ship on screen the solid fill graphics are very good, but this section is just too boring after a while. HINT stop dead in space, that way you can spin around quicker and if you cannot hit them, they will crash into you faster and end this section of the game.

Depending on the planet you now have one or two different types of trench to fly through. In the first of these you can only shoot towards the ground, and as you fly along the trench lots of ground based ships and radar towers appear in solid colour just begging to be blown to little bits. At the end of this trench is the enemies reactor on this planet, simply fly into the building, place a few shots into the reactor and then head for the open spaceways. On the other side of the reactor building there is sometimes another trench and this is the best part of the whole game. Boost your ship up to full speed and go whizzing down a corridor full of walls, ramps, sliding panels and iris openings, all in glorious solid graphics, and at a speed which is really amazing. The trenches are the only part of the program which doesn't look like its been taken from Code Name Mat, Elite, Starion or Battle of the Planets and been given solid colour; and they make the game.

The graphics on this game are really good, the sound is limited to a few explosions during game play and a quite good soundtrack while the demo is running. The gameplay varies from section to section from excellent to down right dull. This game has the ring of familiarity even when played

for the first time, and except for the solid fill graphics and the second trench fly through, is a fairly standard game. Buy it to impress other people with your computer, not to play.

Ian Barnes

Infodroid: Beyond

Many years in the future, the universe revolved around one planet, the administrative capital. Civilisation had not yet advanced to a fully automatic delivery system for packages. Guess what? This is where you come in: you're Postman Pat of the far future.

You control a droid along many causeways, delivering packages here and there. On either side of these causeways are three speed platforms which transport the droids in both directions. The speed platforms get faster the further from the causeway you get.

Along the causeways are manholes - whoops, access chambers - into which you descend. These can be company despatch departments, garages, information centres or junction rooms.

Apart from delivering packages, there is little else to do. However, as necessary in all societies, there are garages where you can get your droid repaired - for a price!

At despatch departments, you can pick up packages to take to another company or you can deliver packages from other companies.

Information centres allow you to see the state of your droid's equipment. Junction rooms connect causeways.

All in all, not a bad game. Sound lacks - umph! This game is saved by some very nice touches, like the lifts by which you descend into the access chambers.



SIDEWAYS PRINTING

Where Geneologists can go off at a tangent

by Alan Walker

Introduction

Genealogy is a hobby of mine, and as any genealogist will tell you, it is a hobby which creates large quantities of data and correspondence. Apart from using my 6128 for word processing, I have written a series of programs to operate my data base consisting of ancestors names, dates for birth, marriages and deaths, etc.

One of the most widely used and easily understood methods of displaying basic genealogical relationships is the family tree diagram (Fig-1). I make regular use of these diagrams, which I print from my database, when corresponding with other geneologists. However, the standard A-4 page limits the diagram to five generations, and there is no room for the inclusion of brothers, sisters, etc. There are several ingenious methods for overcoming this problem using continuous paper on an 80 column printer, but for what they gain in data content they lose in clarity of presentation, especially to the uninitiated.

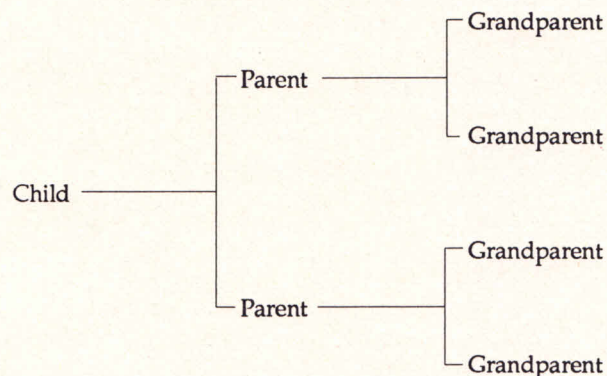


Figure-1: 3-Generation Family Tree Diagram Format

I decided that there had to be a better way of preparing comprehensive, easily understood family tree diagrams with my computer. My solution is to print the diagrams sideways using continuous paper. I now use this program, "Sideways", to print all or part of my family tree. The complete diagram is 8 metres long, uses 30 files, and takes 3 hours to print. (I go to bed and set a time clock to turn the computer off).

Apart from family trees, Sideways will print form any previously prepared ASCII file. The limitations are a maximum of 96 lines and 255 characters per line. If you need special characters, these can easily be incorporated in the program.

I redefine the back-slash key to give thin horizontal and vertical lines on my family tree diagrams.

Sideways sequentially loads previously prepared ASCII files into the array TXT\$, then determines the ASCII value of the characters corresponding to the last character on the longest line. This ASCII value is used to access the array ALPHA% which contains the bit image data for printing sideways. After printing, the characters corresponding with the last character in the longest line the program then decrements to read all characters corresponding with the second last character in the longest line, and repeats the decrementing and printing process until the first character in the line is printed. The next ASCII file is then automatically loaded, and the whole process is repeated.

Equipment

I wrote "Sideways" using a Super-5 ENP-1091 dot matrix printer. The Super-5 is an Epson compatible printer, but it would be prudent to check your printer's control codes with the ones used in "Sideways". Also note that the LPRINT command used in some printer manuals corresponds with the CPC's PRINT #8

- | | |
|--|---------------------|
| (a) CHR\$(27)+"<; | - home print head |
| (b) CHR\$(24); | -clears buffer |
| (c) CHR\$(27)+"L"+CHR\$(10)+CHR\$(0); | -2*density graphics |
| (d) CHR\$(ALPHA%(C,0))+CHR\$(ALPHA%(C,1))+etc; | -bit image print |
| (e) CHR\$(13) | -carriage return |
| (f) CHR\$(27)+"3"+CHR\$(24); | -9 lines/inch |
| (g) CHR\$(27)+"3"+CHR\$(36); | -6 lines/inch |

In (c) the CHR\$(10)+CHR\$(0) part of the command establishes the character height. Each character is 10 dots in height when printed, including additional spaces. (96/10 = 9.6 lines across the printed page.)

As listed, "Sideways" is suitable for running on a single disc drive system. To operate it with a two drive system with the file disc in the B-drive, and the program disc in the A-drive, change the following lines to read:

```
1450 DEFINT A-M:WIDTH 255: |B
1610 WIDTH 80: |A:CLS
```

The Font

The font used in "Sideways" is the normal CPC6128 screen font downloaded through one of the character generating

CPCs - PRINTER UTILITY

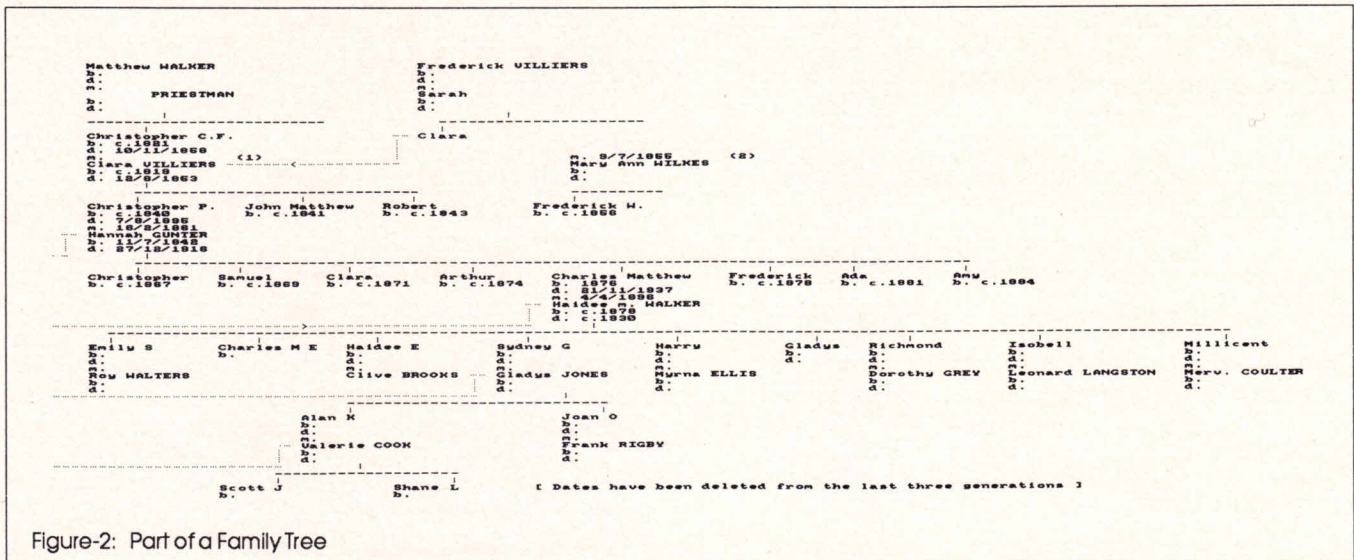


Figure-2: Part of a Family Tree

programs that are available in public domain software. The characters have to be rotated so that they are correctly aligned when printed. There is some compression due to the use of double density graphics (960 dots/line instead of the standard 480 dots/line). The rotated character is contained in bit-image form in the DATA lines of the program. The first number in each DATA line is the ASCII value for the character in that line, this is useful in identifying the character each line represents. If you have any intention of designing your own special characters or fonts, it is worth the effort to obtain one of these character generating programs. To obtain the thin dotted lines that I use, change the following lines to read:

```
2240 DATA 92,0,0,0,170,0,0,0,0
2280 DATA 96,16,0,0,16,0,0,16,0
```

Program Functions

- Lines 1000 - 1060: Describe the program specification, and direct the operation of the principal routines.
- Lines 1070 - 1230: Inserts a space to make up the difference between the end of a line shorter than the current printing position and the current position being printed [1140]. Determines the ASCII value of the character at the point currently being read on the line of text and converts it to a space if it is outside the range, ASCII 32-126 [1150-1160]. Selects the bit image data from ALPHA%, and sends it to the printer [1180-1190].
- Lines 1240 - 1400: Loads previously prepared ASCII files from DATA [1270], into the array TXT\$ [1310]. Determines maximum line length [1340], and other statistics for screen display.
- Lines 1410 - 1580: Prints titles and general screen displays. Loads bit image data from

DATA lines into the array ALPHA% [1490]. Allows the names of previously prepared ASCII files to be entered into a DATA statement [1550]. Line [1540] centres screen text automatically.

Lines 1590 - 1630: Resets computer and printer.

Program Operation

The first step is to prepare ASCII files of the information that is to be printed sideways. The maximum number of lines is 96, and the maximum line length is 255 characters. I have used Tasword, and Protex in its non-document mode. Protex will accept lines longer than 255 characters on the screen, but it stores the excess in a new array which provided some interesting effects when you try to recall it for sideways printing.

Once the ASCII files have been prepared, run "Sideways", the program will request you to enter the names of ASCII files into a DATA line. If more than one ASCII file is to be entered, enter the last file first, then the second last and so on. If all of the ASCII files will not fit on line 2590, then press RETURN (large ENTER key), and type in 2591 DATA "filename.ext",.....etc. This may be repeated until line 2599 is used, do not remove line 2600 as "LASTFILE" is needed to signal the end of the operation. If more than 50 files are to be entered then change line 1270 so that the upper limit of the loop is greater than the number of ASCII files. When all of the text files have been entered into DATA lines then press ENTER (small ENTER key). The ENTER key (Key No. 6) has been redefined to restart the program after the ASCII files have been entered.

Some experimentation may be needed to establish a standard layout if multiple ASCII files are to be used, but as I mentioned at the beginning, I use 30 text files for my complete family tree. Figure-2 is printed from two files. The thin dotted lines link with people on other files.

The program listing is on the following few pages. But be warned - whilst the program works well it does take an age to print. Then again, it has taken centuries to compile!

CPCs - PRINTER UTILITY

```
1000 REM SIDEWAYS.BAS by Alan Walker.
1005 REM The Amstrad User Jun 87
1010 REM Prints ASCII files sideways.
1020 REM Spacing = 9 cpi (104 lines/page)
                                Lines = 96 @ double dens
ity                               F
ile Capacity = TXT$(95)
1030 GOSUB 1410:REM Title & Set-up.
1040 GOSUB 1240:REM Load ASCII file into TXT$.
1050 GOSUB 1590:REM Re-set computer & printer.
1060 END
1070 REM Selects & Prints ASCII Values Sideways
1080 LOCATE 37,12:PRINT"BUSY !"
1090 PRINT#8,CHR$(27) + "<";
1100 PRINT#8, CHR$(24);
1110 FOR E=I TO 1 STEP -1
1120 CLS#3:LOCATE #3,1,1:PRINT #3,E
1130 FOR D=0 TO F
1140 IF LEN(TXT$(D)) < E THEN K=32:GOTO 1170
1150 K=ASC(MID$(TXT$(D),E,1))
1160 IF K>126 OR K<32 THEN K=32
1170 PRINT#8,CHR$(27) + "L" + CHR$(10) + CHR$(0);
1180 C=K-32
1190 PRINT#8,CHR$(ALPHA%(C,0)) + CHR$(ALPHA%(C,1)) + CHR$(
ALPHA%(C,2)) + CHR$(ALPHA%(C,3)) + CHR$(ALPHA%(C,4)) + C
HR$(ALPHA%(C,5)) + CHR$(ALPHA%(C,6)) + CHR$(ALPHA%(C,7))
+ CHR$(0) + CHR$(0);
1200 NEXT
1210 PRINT#8, CHR$(13)
1220 NEXT
1230 RETURN
1240 REM Load text file into TXT$
1250 CLS:LOCATE 37,12:PRINT "WAIT !"
1260 WINDOW #2,1,80,17,25:WINDOW #3,33,36,24,25
1270 FOR G=1 TO 50 :READ FILE$:IF FILE$="LASTFILE" THEN G
GTO 1050 ELSE GOTO 1280
1280 CLS#2:LOCATE #2,1,2:PRINT#2, "File Now Being Printed
is ";UPPER$(FILE$)
1290 DIM TXT$(95)
1300 OPENIN FILE$
1310 FOR F=0 TO 95:LINE INPUT #9,TXT$(F):IF EOF = -1 THEN
GOTO 1320 ELSE NEXT
1320 LOCATE #2,1,4:PRINT#2,"No. of Lines in File = ";F:CL
OSEIN
1330 I=0
1340 FOR L=0 TO F:IF LEN(TXT$(L)) > I THEN I=LEN(TXT$(L))
ELSE GOTO 1350
1350 NEXT
1360 LOCATE #2,1,6:PRINT#2,"Max. Line Length in File = ";
I:LOCATE #2,1,8:PRINT#2,"Now Printing Line Characters at
"
1370 GOSUB 1070:REM Selects ASCII values & prints sideways.
1380 ERASE TXT$
```

```
1390 NEXT
1400 RETURN
1410 REM Title & set-up
1420 MODE 0
1430 LOCATE 3,8:PRINT"S I D E W A Y S":LOCATE 3,9:PRINT"=
=====":LOCATE 3,16:PRINT"P R I N T I N G":LOCATE
3,17:PRINT"=====
"
1440 LOCATE 9,24:PRINT"9 6":LOCATE 9,25:PRINT"===="
1450 DEFINT A-M: WIDTH 255
1460 PRINT#8,CHR$(27) + "3" + CHR$(24);
1470 REM Load sideways character set
1480 DIM ALPHA%(94,7)
1490 FOR J=0 TO 94:READ A:FOR B=0 TO 7:READ ALPHA(J,B):NE
XT:NEXT
1500 REM Enter files into DATA statement
1510 KEY DEF 6,0,159:KEY 159, CHR$(13) + "GOTO 1560 " + C
HR$(13)
1520 MODE 2
1530 d$="ENTER FILES TO BE PRINTED":e$="INTO DATA LINE US
ING FORMAT":f$=CHR$(34) + "FILENAME:EXTN" + CHR$(34) :g$=
"DO NOT CHANGE LINE 2600":h$="press ENTER to continue"
1540 LOCATE 1,2:PRINT:PRINT SPC(CINT((80-LEN(d$))/2)) d$:
PRINT:PRINT SPC(CINT((80-LEN(e$))/2)) e$:PRINT:PRINT SPC(
CINT((80-LEN(f$))/2)) f$:LOCATE 1,20:PRINT:PRINT:PRINT SP
C(CINT((80-LEN(g$))/2)) g$:PRINT:PRINT SPC(CINT((80-LEN(h
$))/2)) h$:PRINT
1550 LOCATE 1,12:EDIT 2590
1560 KEY DEF 6,0,139:KEY 139,CHR$(13)
1570 RESTORE 2590
1580 GOTO 1040
1590 REM Reset computer & printer
1600 ERASE ALPHA%
1610 WIDTH 80:CLS
1620 PRINT#8, CHR$(27) + "3" + CHR$(36);
1630 RETURN
1640 DATA 32,0,0,0,0,0,0,0,0
1650 DATA 33,24,24,24,24,24,0,24,0
1660 DATA 34,54,54,54,0,0,0,0,0
1670 DATA 35,54,54,127,54,127,54,54,0
1680 DATA 36,24,124,26,60,88,62,24,0
1690 DATA 37,0,99,51,24,12,102,99,0
1700 DATA 38,28,54,28,110,59,51,110,0
1710 DATA 39,24,24,12,0,0,0,0,0
1720 DATA 40,48,24,12,12,12,24,48,0
1730 DATA 41,12,24,48,48,48,24,12,0
1740 DATA 42,0,102,60,255,60,102,0,0
1750 DATA 43,0,24,24,126,24,24,0,0
1760 DATA 44,0,0,0,0,0,24,24,12
1770 DATA 45,0,0,0,126,0,0,0,0
1780 DATA 46,0,0,0,0,0,24,24,0
1790 DATA 47,96,48,24,12,6,3,1,0
1800 DATA 48,62,99,115,107,103,99,62,0
1810 DATA 49,24,28,24,24,24,24,126,0
1820 DATA 50,60,102,96,60,6,102,126,0
```

CPCs - PRINTER UTILITY

1830 DATA 51,60,102,96,56,96,102,60,0
1840 DATA 52,56,60,54,51,127,48,120,0
1850 DATA 53,126,70,6,62,96,102,60,0
1860 DATA 54,60,102,6,62,102,102,60,0
1870 DATA 55,126,102,96,48,24,24,24,0
1880 DATA 56,60,102,102,60,102,102,60,0
1890 DATA 57,60,102,102,124,96,102,60,0
1900 DATA 58,0,0,24,24,0,24,24,0
1910 DATA 59,0,0,24,24,0,24,24,12
1920 DATA 60,16,8,4,2,4,8,16,0
1930 DATA 61,0,0,126,0,0,126,0,0
1940 DATA 62,4,8,16,32,16,8,4,0
1950 DATA 63,60,102,102,48,24,0,24,0
1960 DATA 64,62,99,123,123,123,3,62,0
1970 DATA 65,24,60,102,102,126,102,102,0
1980 DATA 66,63,102,102,62,102,102,63,0
1990 DATA 67,60,102,3,3,3,102,60,0
2000 DATA 68,31,54,102,102,102,54,31,0
2010 DATA 69,127,70,22,30,22,70,127,0
2020 DATA 70,127,70,22,30,22,6,15,0
2030 DATA 71,60,102,3,3,115,102,124,0
2040 DATA 72,102,102,102,126,102,102,102,0
2050 DATA 73,126,24,24,24,24,24,126,0
2060 DATA 74,120,48,48,48,51,51,30,0
2070 DATA 75,103,102,54,30,54,102,103,0
2080 DATA 76,15,6,6,6,70,102,127,0
2090 DATA 77,99,119,127,127,107,99,99,0
2100 DATA 78,99,103,111,123,115,99,99,0
2110 DATA 79,28,54,99,99,99,54,28,0
2120 DATA 80,63,102,102,62,6,6,15,0
2130 DATA 81,28,54,99,99,91,51,110,0
2140 DATA 82,63,102,102,62,54,102,103,0
2150 DATA 83,60,102,6,60,96,102,60,0
2160 DATA 84,126,90,24,24,24,24,60,0
2170 DATA 85,102,102,102,102,102,102,60,0
2180 DATA 86,102,102,102,102,102,60,24,0
2190 DATA 87,99,99,99,107,127,119,99,0
2200 DATA 88,99,54,28,28,54,99,99,0
2210 DATA 89,102,102,102,60,24,24,60,0
2220 DATA 90,127,99,49,24,76,102,127,0
2230 DATA 91,60,12,12,12,12,12,60,0
2240 DATA 92,3,6,12,24,48,96,64,0
2250 DATA 93,60,48,48,48,48,48,60,0
2260 DATA 94,24,60,126,24,24,24,24,0
2270 DATA 95,0,0,0,0,0,0,0,255
2280 DATA 96,12,24,48,0,0,0,0,0
2290 DATA 97,0,0,30,48,62,51,110,0
2300 DATA 98,7,6,62,102,102,102,59,0
2310 DATA 99,0,0,60,6,6,6,60,0
2320 DATA 100,56,48,62,51,51,51,110,0
2330 DATA 101,0,0,60,102,126,6,60,0
2340 DATA 102,56,108,12,30,12,12,30,0
2350 DATA 103,0,0,124,102,102,124,96,62
2360 DATA 104,7,6,54,110,102,102,103,0

2370 DATA 105,24,0,28,24,24,24,60,0
2380 DATA 106,96,0,112,96,96,102,102,60
2390 DATA 107,7,6,102,54,30,54,103,0
2400 DATA 108,28,24,24,24,24,24,60,0
2410 DATA 109,0,0,54,127,107,107,99,0
2420 DATA 110,0,0,59,102,102,102,102,0
2430 DATA 111,0,0,60,102,102,102,60,0
2440 DATA 112,0,0,59,102,102,62,6,15
2450 DATA 113,0,0,110,51,51,62,48,120
2460 DATA 114,0,0,59,110,6,6,15,0
2470 DATA 115,0,0,60,6,60,96,62,0
2480 DATA 116,12,12,62,12,12,108,56,0
2490 DATA 117,0,0,102,102,102,102,124,0
2500 DATA 118,0,0,102,102,102,60,24,0
2510 DATA 119,0,0,99,107,107,127,54,0
2520 DATA 120,0,0,99,54,28,54,99,0
2530 DATA 121,0,0,102,102,102,124,96,62
2540 DATA 122,0,0,126,50,24,76,126,0
2550 DATA 123,112,24,24,14,24,24,112,0
2560 DATA 124,8,8,8,8,8,8,8,0
2570 DATA 125,14,24,24,112,24,24,14,0
2580 DATA 126,110,59,0,0,0,0,0,0
2590 DATA "FILE-1.EXT", "FILE-2.EXT"
2600 DATA "LASTFILE"

How to get a program published in The Amstrad User.

If you have written and fully tested a program/routine that you think would be of interest to other Amstrad users in Australia, the following points should be noted.

1. The shorter the program, the more chance of it being published.
2. Originality always helps - straight copies from other magazines are illegal. Try to keep away from subjects already published unless you are presenting a completely different slant.
3. We have a number of interest calculation and maths-aid programs which fail to use the graphics capabilities of the Amstrads. Consequently they all look the same when run.
4. As we simply do not have the time to key in and debug submissions, it is important that the program is sent in on tape or disc. Use lower-case rather than capitals for variable names. Try to keep away from using lower-case L, capital I or O. Structure your program and avoid long multi-statement lines.
5. Keep a copy of your program.
6. Documentation for the program can either be printed or placed in a Tasword (or Amsword) file for us to print. Don't include the coding in this file.
7. Make sure your name and address is on **everything** you send. Include a stamped and self-addressed padded bag if you want the disc or tape returned.
8. Send the material to The Amstrad User, 1/245 Springvale Rd., Glen Waverley, Victoria 3150.
9. Please be patient - it could be while before your program hits the big-time as we have quite a few in the pipe-line.

CAN THE AUSTRALIAN COMPETE?

by Chris Collins

For those of you out there that read your magazine, you will realise that to date I have reviewed most of the disc utilities that are on the market. This includes the PRIDE range and most of the BEEBUGSOFT range, as well as a couple of others. The one thing that has disappointed about the disc utility market, has been the fact that all of the utilities have been from overseas, and not one has come from Australia.

One of the products that I have not reviewed from the PRIDE range is a program called F.I.D.O. though this was not for want of trying. Your Editor gave me a copy of the program to review way back in December. However, F.I.D.O. requires a password to access the main program, and the Editor was not supplied with the password.

Nevertheless, I feel that we can make up for these problems this month. What we have is a copy of F.I.D.O. (including a password) and also a pre-view copy of a new AUSTRALIAN disc utility called Vin-System. Because they both purport to do the same job, I will look at each in turn, then give you a comparison summary at the end.

F.I.D.O. would seem to be a good

place to start, as it has been on the market a lot longer. F.I.D.O. is written by the boys at PRIDE Utilities in England and the opening screens seem to measure up to their usual standards. The first thing that I found was that damned password. Not only does F.I.D.O. require a password, which is something I detest, but he password is also case-sensitive. If you don't quite understand what this means, I will explain it for you. If you make the password - Chris - then that is what you must then type to enter the program. CHRIS will not get you in, and neither will - chris - you must type it in exactly as you type it in the first time.

After that hassle, you then get to the main screen of F.I.D.O. This will then allow you to use one of the following options;

- 1) Enter the F.I.D.O. database,
- 2) Use the F.I.D.O. selector, or
- 3) Make a new password.

The easiest option to start with is the last one, make a new password. Select option 3, type in the new password (carefully checking the case of the letters) and bingo! Next time you start F.I.D.O., your new password will be operative.

Option 2 is something called F.I.D.O. Selector. This had me very confused for a long time, and after a lot of playing around with it, it appears to be nothing more than a menu program for your discs. It is very fancy, not very well laid out, and rather difficult to use. Forget it.

Now down to the crux of the program. That is the F.I.D.O. database. This is accessed using option 1 from the main screen. After pressing option 1, the disc drive will whirr for a while and you will be presented with what is

called the main menu. This has a further five options for you to choose from. Starting at the top of the list, we have the following options;

- 1) Database
- 2) Utilities,
- 3) Copy F.I.D.O.
- 4) Printer On, or
- 5) Exit.

We will select option 1, and see what occurs. Wow, we have been presented with the Database Menu, which has another 7 options that you can choose from. It also gives you a total of free files and files used by F.I.D.O. so far. F.I.D.O. appears to be able to handle approx 2150 files in use.

The database has options for the following; Add or Delete Disc, Search or List, Sort, Save and Exit.

Adding a disc is very simple. Insert a disc, give it a unique name and then the program will do the rest.

Deleting a disc is even easier. Give its name, and then its gone.

List will give you a choice of 3 ways that you can list. These include ALL, DISCS or FILES. Whilst these are scrolling, hitting any key will pause the display, then hitting another will continue the scrolling.

Sorting is also available. Even with only 118 files in use, sorting the list still took a fair while to do. It will sort only on filename, and doesn't offer any other option. I would hate to try a sort on 2150 files, as one would need to go and make a cup of coffee whilst it was doing its stuff.

Search will allow you to check the normal things, namely FILES and DISCS. It also offers you the option to check on FREE SPACE, something I can see would be useful, if like me you like to keep some sort of order in your disc collection.

The remaining two options in the database are Save and Exit. Both of these are pretty self-explanatory, so I won't bother.

Next on the main menu, was UTILITIES. These will allow you to CAT a disc, RENAME a file, ERASE a file, and change DRIVE and USER. All pretty standard stuff.

The last three options are Copy F.I.D.O., Printer ON, and Exit. Copy F.I.D.O. allows you to copy F.I.D.O. to a different disc, Exit will dump you back to basic. Printer ONE seems simple enough, although it pays not to use this option unless you do have a printer connected, because it will hang your machine.

This has been a quick look at F.I.D.O. and it is now time to check out its competitor.

This is an AUSTRALIAN program called Vin-System. It is written by a member of the Newcastle Amstrad Users Group. The packaging is rather simple, an insert in a disc case with a small packaging is rather simple, an insert in a disc case with a small description on the inside of the sheet. It was at this point that I started to get a little worried, because the language that was used reminded me of the original computer manuals that came out in their particular brand of Jinglish. It is rather normal for people from other countries to have trouble getting their mouths around our particular brand of English, but for a program that is being sold in the shops, the English must be perfect. A small problem only.

Vin-System is a collection of programs that purports to be a disc organiser. It has a good loading screen (a copy of that which is on the packaging) and no password. You are then presented with the main menu which will then allow you to select the particular program that you require. All responses are by alpha keys and as soon as you hit a key, the screen changes colour to let you know that something is happening.

The first program is called Vin-Able and is very similar in capabilities to DIR-EDIT from ODDJOB. The differences are in the commands used to operate on the files. Options include R/O or R/W, HIDE or CAT a file, erase or unerase a file, rename a file,

select another disc or another user and then save the changes to disc. Vin-Able has the same basic problem that I found in DIREDDIT. Neither of them will allow you to work on more than one file at a time. After finishing with Vin-Able, you are then sent to Vin-Base.

This is the next step, and is the actual database program. It allows you to create and delete, find and view, print, save and load, and also to sort records. Unfortunately this screen is rather confusing, as it gives different titles to the same option. For example, the following is the top line of the menu;

```
CREATE a record . . . . . ADD . . . C
```

It took me a little while to work it out, so I believe that it could be very confusing to a novice.

As stated above, the first option is to create or add a record. This can be rather confusing to use as it asks for a disc number (max 5 numbers), asks you to place the disc in drive A and then you have to press F to get the computer to read the catalogue. This is where a couple of questions arise. Why a number and not a name? Names are much easier for the normal user to understand, and they are also much more descriptive. Why the heck do you have to press F to get it to do anything? It doesn't state clearly enough what has to be done.

The next option to me should have been an alpha sort of the file. Whilst sorting, the computer will sound a little beep every couple of seconds to let you know that it is doing something. I tested it with a list of 460 records and found that it took approximately 132 seconds. Not too bad, especially as it was the program that told me how long it took.

When you view a list of files, it will be displayed on the screen in two halves. You are shown the name of the file, type of file, size of file, disc number and free space on that disc.

After sorting and listing, the next logical thing is to save the file in case of power problems. For the 460 record test file, it occupied 17k on the disc.

To find a file, requires only the first letter or first couple of letters. It will search the database, and then report on the matches that it found. It will only show you one match at a time.

If you wish to delete a record, you are asked for a record number. Vin-System will then display all the statistics for that record and ask you to confirm deletion, and then return you to the main menu.

The other couple of options that are still on this menu include PRINTING, SAVEing, LOADING and EXIT. I don't think that these need explanations.

As we must now return to the main menu, we find two programs that print disc covers. One appears to make a cover for the plastic disc box, and the other appears to make a label that you can stick to the disc itself.

Unfortunately, I couldn't test either as my printer isn't working.

One can also setup printer fonts using another program, another allows you to write a menu to disc. The instructions for this are very unclear as they are also written in that particular brand of Jinglish.

Well, after all of that, it comes time to compare the two programs. I believe that the easiest way to pick a winner is simply to say which program I would buy for my own use. At the present time, I believe that I would buy Vin-System. It does have a couple of faults, all first release programs do, but I think that the author will fix them for the next release. They don't detract from the overall usefulness of the program.

As for F.I.D.O., my biggest problem is that damned password. I have worked around computers for too long to realise that the only people that passwords stop are the honest users amongst us, they don't stop pirates, they only slow them down a little bit.

F.I.D.O.'s biggest plus is the fact that no matter how deep you get into the program, you can always get back to the main menu, simply by following the prompts. Very useful if you do get into trouble.

I have no doubt that future releases of Vin-System will fix my couple of doubts regarding the operation of the program. So long as upgrades to this software are available from the author, I can see no reason not to buy now, because you will not be disadvantaged. All of that aside, it has the beginnings of a damn fine AUSTRALIAN program, and I believe that it deserves to be supported.

GALLIMAUFRY III

Three very nifty and different programs to keep your type-in fingers nimble.

MANUSCRIPT

Just a little extra for all you music lovers out there, courtesy of Colin Powell. If you've got a DMP2000 or Epson-compatible printer you can use this listing to churn out cheap manuscript paper. All you have to do is pop a sheet of blank A4 paper into the printer, make sure the printer's on-line, and run the program. How useful it is depends on how much manuscript paper you get through, but you've got to admit it's a bit different.

```
10 REM MANUSCRIPT CREATOR
20 REM (C) COLIN POWELL
30 REM The Amstrad User Jun 87
40 PRINT#8,CHR$(27);CHR$(49);
50 PRINT#8,CHR$(27);CHR$(45);CHR$(1);
60 PRINT#8,CHR$(27);CHR$(69);
70 GOSUB 170
80 FOR stave=1 TO 10
90 FOR lines=1 TO 5
100 PRINT#8,"
                                     ":REM 79 spaces
110 NEXT lines
120 GOSUB 170
130 NEXT stave
140 PRINT#8,CHR$(12);
150 PRINT#8,CHR$(27);CHR$(64);
160 END
170 FOR space= 1 TO 5
180 PRINT#8
190 NEXT space
200 RETURN
```

TILE GAME from S. Watson

You'll need to use your brains a bit more on this one. You know those little plastic puzzles where you slide little lettered tiles around to make words? Well, this brain-taxing type-in gives you the same kind of puzzle on Arnold - only bigger. Its author, Simon Watson, wasn't satisfied with the usual 4x4 or 5x5 grid. He went for a huge 8x8 grid, and that means 63 tiles to get in the right order.

The program scrambles the tiles in a different order each time you play. You then have to unscramble them using

either the cursor keys or a joystick. 'Up' will move a tile up into the empty space, 'left' will move one left, and so on. The screen display shows you not only the order the tiles are in now, but also the order you have to get them into and the time you've taken so far.

When typing the listing in be sure that you finish line 460 properly. It ends with a comma, a space and then a second comma. That's about all you need to know for you to use the program. Now, the sooner you get typing the sooner you can get puzzling. What are you waiting for?

Modifying the program

If you've played the program for a little while, you might like to try making a few modifications to it. The nice thing about the programs in this magazine is that you can usually alter them without having to be an out-and-out hacker.

The lines 390-460 hold the data for the words formed by the puzzle. If you decide to change them, bear in mind that they must all have eight letters and the last letter of the last word must be a blank. Using numbers, lower case letters and other symbols, you could make all the tiles different. If you think this would make the game a lot harder, you're quite right - in fact it would make the thing impossible roughly half the time. Because of the way the thing works, you should always duplicate a few of the tiles. If you make the last two identical, this will do the trick.

You may have noticed that you always get the same sequence of puzzles the first time you use the program after resetting the machine. If you've saved the program to disc you'll be able to check this out rather quicker than cassette users could. This repetition happens because the game doesn't seed the random number generator - it doesn't have a statement of the form variable=RND(negative number) anywhere in it, in other words. You'll probably have to experiment a bit to get this one to work the way you want, though.

The most obvious modification would be to enlarge the grid - to 12x12, say. To do this you'll really have to modify the program quite considerably. Aside from some cosmetic alterations to the graphics, for the most part you'll just need to replace 8 with 12 throughout. Obviously, not every occurrence of the number 8 is a reference to the grid size - the reference in line 100, for example, shouldn't be changed.

Similarly, there are some references to the grid size that don't involve the number 8. In line 380, 'X%=7' should be changed to 'X%=11' for a 12x12 grid. You'll just have to look through the program carefully for this sort of thing.

```
10 ' Tile game
20 ' by S. Watson
30 ' The Amstrad User Jun 87
40 ' *****
50 MODE 1:INK 0,0: BORDER 0: INK 1,26: INK 2,11: INK 3,3: DIM
   L$(8,8),S$(8,8)
60 WINDOW#1,16,32,5,21: PAPER#1,2: CLS#1: WINDOW#2,2,13,8,19
   : PAPER#2,1: CLS#2
70 WINDOW#3,3,12,9,18: PAPER#3,3: CLS#3: WINDOW#4,16,32,1,3:
   PAPER#4,1: CLS#4
```

CPCs - TYPE-INS

```
80 PEN 3:PAPER 2:LOCATE 20,8:PRINT"Joystick":LOCATE 23,10
:PRINT "or ":LOCATE 20,12:PRINT"Keyboard":LOCATE 18,16:PE
N 1:PRINT" (K/J)?"
90 IF INKEY(45)>-1 THEN K(1)=72:K(2)=73:K(3)=74:K(4)=75:G
OTO 120
100 IF INKEY(37)>-1 THEN K(1)=0:K(2)=2:K(3)=8:K(4)=1:GOTO
120
110 GOTO 90
120 RIGHT=0:CLS#1:LOCATE 19,12:PEN 3:PRINT"P L E A S E":L
OCATE 21,16:PRINT"W A I T":FOR N=248 TO 504 STEP 32:MOVE
N,70:DRAW N,324:NEXT:FOR N=70 TO 346 STEP 32:MOVE 248,N:D
RAW 504,N:NEXT
130 GOSUB 340:CLS#4:PAPER 1:PEN 0:LOCATE 17,2:PRINT"TIME
:"
140 FOR Y%=1 TO 8:FOR X%=1 TO 8:LOCATE X%+3,Y%+9:PAPER 3:
PEN 2:PRINT S$(X%,Y%):LOCATE (X%*2)+15,(Y%*2)+4:PAPER 2:P
EN 3:PRINT L$(X%,Y%):NEXT:NEXT
150 FOR Y%=1 TO 8:FOR X%=1 TO 8:IF L$(X%,Y%)=S$(X%,Y%) TH
EN RIGHT=RIGHT+1
160 NEXT:NEXT
170 FOR Y%=1 TO 8:FOR X%=1 TO 8:IF L$(X%,Y%)=" " THEN A%=
X%:B%=Y%:GOTO 190 ELSE NEXT:NEXT
180 END
190 PEN 1:PAPER 0:LOCATE 10,25:PRINT"Press SPACE to start
":WHILE INKEY$<>" ":WEND:LOCATE 10,25:PRINT"
"
200 PAPER 1:PEN 0:LOCATE 17,2:PRINT"TIME : ":PRINT CHR$(7
):TIC=TIME/300
210 IF INKEY(K(1))>-1 AND Y%<8 THEN A%=X%:B%=Y%+1
220 IF INKEY(K(2))>-1 AND Y%>1 THEN A%=X%:B%=Y%-1
230 IF INKEY(K(3))>-1 AND X%<8 THEN A%=X%+1:B%=Y%
240 IF INKEY(K(4))>-1 AND X%>1 THEN A%=X%-1:B%=Y%
250 TICKER=ROUND((TIME/300)-TIC,2):LOCATE 23,2:PAPER 1:PE
N 0:PRINT TICKER
260 IF A%=X% AND B%=Y% THEN 210
270 SOUND 3,14,1,14:A$=L$(A%,B%):B$=S$(A%,B%):C$=S$(X%,Y%
)
280 IF A$=B$ THEN RIGHT=RIGHT-1
290 IF A$=C$ THEN RIGHT=RIGHT+1
300 L$(X%,Y%)=A$:L$(A%,B%)=" ":PAPER 2:PEN 3:LOCATE (X%*2
)+15,(Y%*2)+4:PRINT A$:X%=A%:Y%=B%:LOCATE (X%*2)+15,(Y%*2
)+4:PRINT " "
310 IF RIGHT=63 THEN GOTO 470
320 FOR N%=1 TO 4:IF INKEY(K(N%))>-1 THEN GOTO 330 ELSE N
EXT: GOTO 210
330 TICKER=ROUND((TIME/300)-TIC,2):LOCATE 23,2:PAPER 1:PE
N 0:PRINT TICKER:GOTO 320
340 RESTORE
350 FOR Y%=1 TO 8:FOR X%=1 TO 8:READ A$:L$(X%,Y%)=" ":S$(
X%,Y%)=A$:NEXT:NEXT
360 FOR Y%=1 TO 8:FOR X%=1 TO 8:A$=S$(X%,Y%)
370 A%=INT(RND*8)+1:B%=INT(RND*8)+1:IF L$(A%,B%) <> " " T
HEN 370
380 L$(A%,B%)=A$: IF X%=7 AND Y%=8 THEN RETURN ELSE NEXT
```

```
: NEXT
390 DATA A,M,S,T,R,A,D,S
400 DATA S,P,E,C,T,R,U,M
410 DATA J,O,Y,S,T,I,C,K
420 DATA H,A,R,D,W,A,R,E
430 DATA C,A,S,S,E,T,T,E
440 DATA P,R,I,N,T,E,R,S
450 DATA K,E,Y,B,O,A,R,D
460 DATA M,O,N,I,T,O,R, ,
470 FOR N=1 TO 100:INK 1,INT(RND*26)+1:INK 2,INT(RND*26)+
1:INK 3,INT(RND*26)+1:NEXT
480 INK 1,26:INK 2,11:INK 3,3:CLS#1:CLS#2:CLS#3:GOTO 80
```

DOTTY by Tommy Daffin

Here's an interesting type-in that creates 'dotty' designs. Using Q, A, O and P will move an ever-growing line around the screen. When your creativity has been exhausted, press the space bar and watch those dots move!

```
10 ' Dotty
20 ' Tommy Daffin
30 ' The Amstrad User Jun 87
40 KEY 139,"CALL &bc02:mode 1"+CHR$(13)
50 MODE 0
60 GOSUB 310
70 MOVE 320,200
80 c=1
90 x=320:y=200
100 xx=0:yy=0
110 IF INKEY(67)<>-1 THEN yy=yy+0.25
120 IF INKEY(69)<>-1 THEN yy=yy-0.25
130 IF INKEY(27)<>-1 THEN xx=xx+0.25
140 IF INKEY(34)<>-1 THEN xx=xx-0.25
150 IF INKEY(47)<>-1 THEN GOSUB 230
160 IF INKEY(79)<>-1 THEN RUN
170 DRAW x,y,c
180 c=c+1:IF c=16 THEN c=1
190 IF x>640 OR x<0 THEN xx=-xx
200 IF y>400 OR y<0 THEN yy=-yy
210 x=x+xx:y=y+yy
220 GOTO 110
230 FOR f=0 TO 15:INK f,0:NEXT f
240 g=1
250 INK g,26
260 CALL &BD19
270 INK g,0
280 g=g+1:IF g=16 THEN g=1
290 IF INKEY(18)<>-1 THEN GOTO 310
300 GOTO 250
310 FOR f=0 TO 15
320 INK f,f
330 NEXT f
340 RETURN
```



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To find the treasure each player places a marker buoy which can only be done by working out correctly a multiplication sum for the chosen position. When placed the buoy may be white, purple or red. These colours give clues to the position of the treasure. Great care is needed to avoid giving away clues to the opposition.

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This is a deductive thinking and reasoning game in which clues have to be interpreted to find bottles of perfume within a set number of moves. Strategy also enters into the game in working out how to 'cover' the maximum number of squares in the moves allowed.

FLETCHER'S CASTLE for ages 8 to 12

After the Battle of Hastings a Norman knight named Simon Fletcher is given land for his brave deeds in battle. Your task is to build a motte and bailey castle so that you can defend your new land. You must build the castle in 10 days or less, or else . . .

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A mathematical game involving simple money management. The player runs a market stall for a given period and with a chosen amount of starting capital. Decisions on what to buy and at what price to sell are involved. The aim is to make a profit over the trading period.

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"FIRST CHOICE"

For a first-time buyer, Kathy Galante reckons it's a good choice at her busy Sydney advertising agency

After taking the plunge to switch from a typewriter to a PC, we felt that the PC1512 and Brother Twinriter printer would satisfy the needs of our Advertising Agency.

The Amstrad PC1512 we purchased has a double disc drive and high resolution colour monitor. The Brother Twinriter prints in both dot matrix and daisywheel. Drafts can be printed out at 140 cps and letter quality work at 35 cps. Extremely pleased with our initial purchases, the next decision to make was 'which software package do we need?' That of course depends on the type of work you produce. To give you an example, we produce copy press and magazine advertisements and brochures as well as scripts for television and radio campaigns. We also do New business presentations which must be of very high quality, correspondence, post analysis reports, advertising budget and expenditure summaries. Recently we have started putting our monthly sales figures on computer. With all that in mind plus the fact that our company will be expanding, therefore creating the opportunity to utilise further computer applications, we chose "First Choice" as our software package.

After looking around at the current software packages on the market I saw that it was so easy to pick up a package that would suit your immediate needs today, which was suitable for only one application ie. word processing or spreadsheet, and would retail for around \$1,000 as is the case with Lotus 123. On the other hand, "First Choice" is a multi-purpose package which includes Word Processing, Spreadsheet Analysis, Electronic Communications and File Management. It is inexpensive in comparison to its competitors with a retail price of around \$350.00. Although

currently we may not use the Electronic Communications or File Management applications, they are there for future use.

My experience with software is by no means vast. I have used Sandy's, LocoScript, NewWord and now First Choice. All of them are different and good programs in their own right, but First Choice would have to be my favourite. For the first time or novice user, First Choice is excellent. The manual supplied is not too lengthy like

1st CHOICE

most manuals but concise and written in terms suitable for the beginner, with step by step instructions on each application. At the beginning of the manual is a "Quick Tour" which takes about an hour to complete. This takes you through each application where you actually input information rather than just sit back and read the screen. As most of us know, it's much quicker and easier to learn something if you participate. Experienced users should not be deterred by its simplicity. Overall this is an extremely powerful software package and at the same time is a delight to operate.

My most used application is Word Processing. With Word Processing you can prepare, print, correct and save all your documents, letters, presentations etc.

Once you have input your work, editing is a breeze - change your margins, page length, cut and paste paragraphs or delete them altogether. The number and type of changes you can make to a piece of work are limitless.

The functions which appear across the top of your screen are various editing and printing options. There are 6 functions in all and these are:

F1 Help - when you depress the F1 key, no matter where you are within a piece of text or menu, this function will offer you assistance - my motto is "whenever in doubt, press F1", that way you should never be stuck for too long.

F2 Save - allows you to save a copy of the document you are currently working on, save a selected piece of text only, merge with another document or erase a file altogether.

F3 Features - with this function you can find and replace words in a document, carry out a spelling check, set tabs and indent, set margins and page length, set a bookmark and find a bookmark.

F4 Print - gives you all your print options. Print this document, print selected text only, print form letters and labels. With F4 once you have chosen to print, another menu pops up on the screen with a few basic questions like: Number of Copies, Right Justify, Pause between Pages, Compress Type and a few more. After these have been completed the printer will be activated and your document printed.

F5 Edit - allows you to select a certain piece of text and cut it completely out of your document, move it to a clipboard or copy it onto a clipboard

and then paste it back into the document anywhere you like. From F5 you can also insert a blank line, erase a line, word or document.

F6 Style - This is where you have the opportunity to exercise your creativity in presentation with options like - bold face, underlining, italic, single space, double space or centre.

Let's say that you have just finished entering in about 5 pages of text and have decided to change the margins, move some paragraphs around, make all your headings bold and italic as well as underline some key words throughout the text, this can all be done with a minimum of fuss with the function keys I have mentioned. But remember that by changing your margins you may be causing the page breaks to alter. Again this may be rectified quite simply.

The British spelling checker which comes with First Choice is a great advantage. If you're anything like me, proof reading your own work is virtually impossible, that's where the spelling checker is invaluable. It checks each word from beginning to end of a document and when it finds an error, it will stop and give you the option to continue, leaving the word how it is or type a correction or add that particular word to the dictionary (I find this most useful as there are a few words which we spell differently like Emphasise v's Emphasize). The dictionary, apart from giving the above options, will show you a list of words similar to the one it has picked up as being an error, therefore taking out the guess work if you're not sure how a particular word is spelt. After you have made any alterations, the screen will show you immediately how it will look, without the need to do countless test prints.

I guess the most impressive aspect of this word processing function is that nothing is too difficult to achieve.

The spreadsheet application is a real time saver. The blank spreadsheet which appears on your screen, before you enter any numbers looks like a type of grid. Across the top of your screen there is a row of functions similar to the word processing ones followed by a 'where you are' message. This message tells you where you are,

eg. Row 1 Column 1 or Row 5 Column 6. Displayed next to this is a % figure which lets you know how much more information you may input before your spreadsheet has reached its full capacity.

Across the top of your spreadsheet and down the extreme left hand side is where you enter in your headings. The main body of the spreadsheet is where you enter in your figures. When you have input these, you may commence to calculate the totals. These are done with the use of the Formula Box in which you enter the co-ordinates of the rows and columns you wish to work with. You can add, subtract, multiply, divide as well as carry out other more complex financial calculations. Once you have finished your spreadsheet and all your columns have been totalled, you may find that you have omitted a row of figures or have been given an additional row to insert. Unfortunately, as you are entering in

1st CHOICE

an additional row, First Choice does not recalculate automatically. In this instance you must call up the Formula Box once again and make a slight alteration to the co-ordinates. If the co-ordinates are not altered to take into consideration your new row, First Choice will leave the total as it first stood and therefore it would be incorrect. If the alteration concerns a particular row or column which was taken into consideration for your first calculation, First Choice will automatically recalculate your total using the correct formula you have specified.

For those of you who work for a company with any overseas ties, First Choice has the added benefit of 15 different foreign currency symbols.

When you decide to print your

spreadsheet you must answer the same type of questions as with the word processing application. The page width may be altered to 132 characters which is the maximum. If your spreadsheet happens to be wider than this, First Choice will print the columns which will fit on the page and then print the next set on a new page until the entire spreadsheet is printed.

The two remaining applications which I mentioned earlier are the "File Management" and "Electronic Communications" applications.

With the File Manager you create a form design which you tailor to your specific needs. On this standard form, you input all the necessary information. You may have a form for each of your customers which displays their name and address, along with brief details of their transactions with your company. All the information on this form can then be transformed into labels and form letters or a report, which is automatically sorted into ascending or descending order depending on your first column.

Electronic Communications basically works like a telephone except that your computer takes the place of the phone. You are able to connect to communications services to retrieve information and exchange files with other Personal Computers. You must subscribe to communication services to be able to receive information such as news, airline schedules, stock exchange reports etc. There are many organisations which offer this service and with the help of First Choice, retrieving information can be done quickly and efficiently. Of course, before the above application is to be used, you will need to make sure you have the correct modem installed.

First Choice doesn't quite finish there. All the above applications can be incorporated into the same document with a minimum of fuss. An added bonus.

On summing up, if you are currently on the market for a good software package you owe it to yourself to have a serious look at First Choice. You won't be disappointed.

First Choice is distributed to dealers by Imagineering (02 - 662 4499) and costs \$295 (ex-tax).

PIXEL PAINTING ON THE PC1512

by Simon Williams

Along with *GEMDesktop* and Locomotive's *BASIC 2*, a third piece of GEM software is supplied with the PC1512. *GEMPaint* is intended for any budding Mondrian or Matisse to take a hold of the new technology, but is just as suitable for drawing diagrams, logos or simple illustrations. It's a versatile program, although lacking some of the advanced features of its more expensive stablemate, *GEM Draw*.

Running the program on the Amstrad PC is not as easy as it could be: the main program - *PAINT.APP* and *PAINT.RSC* - is on Disc Four while other routines needed are on Discs One, Two and Three. One part of the manual shows you how to create your own *GEM Paint* disc by copying files from the various master discs; this is a laborious process which for some reason uses both *Gem Desktop* and raw DOS PLUS. It is fairly well described, but can cause problems if something goes wrong. However, hidden in one of the Appendices at the back of the manual is a somewhat simpler process by which the program can be run on directly from backups of your Master Discs - a little bit confusing for the average user if you ask me.

You call the program by running *GEM Desktop*, inserting a copy (don't forget to make back-ups of all your master discs!) of your *GEM Paint* disc,

and double-clicking on the *GEM Paint* icon which then appears in the directory of the disc.

The *GEMPaint* screen is divided into three main areas, with a menu bar along the top to provide extra control options. The largest area, which is initially blank, is the drawing window. Drawings don't have to fit completely in this window as you can move it over a larger drawing by 'dragging' the horizontal and vertical sliders which are around the edge of the screen.

THE PATTERN PALETTE

The area to the right of the drawing window is the pattern palette. You can select any of the 22 available patterns by moving the pointer with the mouse and clicking on the one required. The pattern then fills the large box at the top of the palette to show it's the current selection. This pattern will then

PIXELS

A pixel is the smallest element that can be displayed on the screen, however it is not the same as a single dot on the monitor. In any GEM application the screen measures 640 pixels wide by 200 pixels deep, and any pixel can be one of 16 colours, or 16 shades of grey if you have a monochrome monitor. The monitor screen picture itself is made up of a different matrix of dots, on to which the display format is mapped. The word 'pixel' is an abbreviation for PICTURE ELEMENT (the 'x' being an Americanism!).

CLICKING

This is GEM jargon for moving the pointer over an icon and then pressing and releasing the mouse button to select it. Double-clicking means pressing the mouse button twice in quick succession, to select and execute the function represented by the icon.

DRAGGING

This involves positioning the pointer over an icon and then moving the icon by holding down the left-hand mouse button while moving the mouse.

be used whenever you select the paint or spray tools (more of which, later). If you have a colour PC1512 then some of the patterns in the pattern palette will be in colour.

You can give yourself more room on the screen by removing the pattern palette from the display. To do this, select the PATTERNS menu from the menu bar and click on the HIDE PATTERNS option. As well as the predefined patterns, you can design your own by selecting the MAKE PATTERN option. This produces an inset window on top of the drawing screen and allows you to draw your design, pixel-by-pixel. As you draw on the enlarged display a section of the pattern is continuously displayed at actual size, so you can see what the finished fill will look like. Just the thing if you're fond of tessellating!

The equivalent strip down the left hand side of the screen contains three palettes: tools, colours (or shades of grey on a monochrome machine, and the line widths. Lets look at each palette in turn.

TOOLS PALETTE

There are 15 tools available in *GEM Paint*, each of which has a separate icon in the tools palette. The first of these tools is the **Microscope**, which as you might expect enlarges an area of your drawing so you can change individual pixels on the screen. This tool is very useful for 'tidying up' parts of a picture, when you can't get the results you need with the pencil or rubber.

The **Selector box**, which has a dashed rectangle as its icon, is used to define any rectangular area of your drawing. You can then manipulate the area using options from the SELECTION menu at the top of the screen. These options include

horizontal and vertical reflection, clearing and complementing the picture (producing a 'negative' of everything within the selected rectangle).

The **Text** tool, inventively given the icon ABC, allows you to add words to your *GEM Paint* screen. You can type in two standard fonts - each of which can be emboldened, italicised and underlined, and displayed in a wide variety of sizes. You can position the

text cursor with the pointer and type anywhere on the screen; or you can switch in an invisible 'grid' to line up pieces of text from different parts of the screen.

The **Pencil** tool is what you would expect. It allows you to draw freehand in the drawing window in any of the colours or gray shades available. The lines produced are one pixel wide.

The **Eraser** tool wipes any section of your drawing back to the current

background colour. You can select a number of different sizes and shapes for this tool, which allows you to get into awkward corners of your designs.

The **Line** tool is not the same as the pencil as it allows you to 'rubber band'. To do this; fix one end of a line and then it stretches to wherever you move the cursor in the drawing window. A similar technique is used with several of the filled shape tools and with the selector box. You can draw in several line thicknesses which are selected using the line palette in the bottom left-hand corner of the screen.

The **Paint** tool acts like a thick pencil, but can also draw using any of the 22 fill patterns. You can adjust the shape and size of the 'paint head' by double-clicking on the PAINT icon. This calls up a separate window, with the current paint head highlighted. You can select any of the other heads by clicking on them.

The **Spray** tool is similar in some ways to the paint tool, but as you might imagine, it gives a dottier covering. You can select a number of different heads for this tool too, using the paint head window in the same way as with the paint tool.

The **Paint tap** fills any enclosed area with the currently selected pattern. You position the cross-hair pointer anywhere within the area you want to fill and click the mouse button. You must take great care that the area you're filling is completely enclosed, otherwise the pattern will 'leak out' and cover areas of your drawing which you didn't intend it to.

If this happens, don't start removing handfuls of hair, as there is a fairly simple remedy. Assuming you've done nothing else since the mistaken fill, you can click on the UNDO option from the Tools menu and the whole fill will be removed, in fact, UNDO will reverse the last operation at any stage in *GEM Paint* - a very handy safety-line.

The bottom six tools in the tool palette offer easy ways of drawing a variety of different filled or unfilled shapes on the screen. In turn, these provide rectangles, rounded rectangles (useful for speech bubbles and other boxes enclosing text), polygons with any number of straight sides, segments of circles and ellipses,

MENU BAR

Used for manipulating the program, setting type height and style, designing patterns, loading and saving pictures and a variety of other functions. Each heading leads to a 'drop-down' menu. A useful item here is

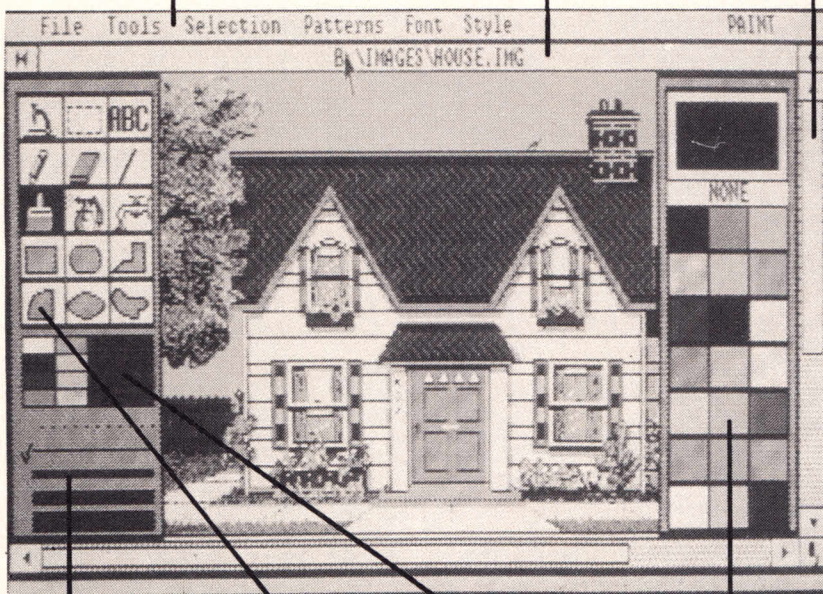
UNDO, which allows you to change your mind if you don't like what you've just done. It can also be implemented by simply hitting (ESC).

TITLE BAR

Tells you the name of the picture you are editing. In this case we are editing the image PC1512.IMG, which is to be found on the disc in drive B in the subdirectory called IMAGES.

SCROLL BAR

Used for scrolling the picture 'under' the screen display. Imagine that your picture is much bigger, and that the screen is a window that you can move over the full picture - then you'll get the idea.



LINE WIDTH

Using the **Line** tool you can draw lines in four different widths; or shapes selected from the bottom six icons of the Tools palette. The top fifth option - the dotted line - creates an invisible line that you could then fill with the **Paint tap** to create a colour patch with no boundary.

TOOLS PALETTE

These provide you with the tools of the trade. The bottom six icons allow you to draw a variety of shapes - squares, rectangles, speech bubbles and the like - with comparative ease.

COLOUR PALETTE

Allows you to select from 16 colours, or 16 shades of grey if you are using a monochrome monitor.

PATTERN PALETTE

Allows you to select one of 22 fill patterns (including NONE) for filling shapes with the **Paint tap**, or with your **Paint** or **Spray** tools. The pattern selected at the moment is shown in the large box at the top of the palette.

NOW AVAILABLE FROM The Amstrad User

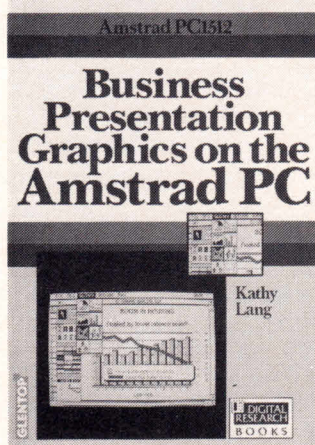


Using GEM on the Amstrad PC1512 is an introduction to users who will be working with GEM and GEM-based products. It expresses things very much in terms of users and their objectives, concentrating on how to get things done.

The text includes many informative diagrams, photographs and illustrations, plus helpful summaries and checklists.

Normal Price \$55.00 + p&p

Subscriber's Price \$50.00 + p&p



Business Presentation Graphics on the Amstrad PC1512 describes how the GEM application programs, such as GEM Graph, GEM Draw, GEM Paint, GEM Write and GEM Word-Chart can be used to produce visual business presentations effectively and quickly.

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Also available: **Using DOS Plus on the Amstrad PC1512**

See page 64 for ordering.

full circles and ellipses and completely irregular figures. When it comes to shape filling, there is really little more you could ask for.

COLOUR PALETTE

Directly beneath the tools palette on the left-hand side of the screen is the colour palette. This offers 16 colours on a colour monitor or 16 shades of gray on a monochrome one. You select a colour by pointing and clicking, exactly as you do to select a pattern from the pattern palette. All the lines in the line palette change to show the selected colour.

LINE PALETTE

You can use any of four different line widths for lines or filled shapes in GEM Paint by selecting them from the line palette. You select the line width by dragging the line cursor up and down the scale of widths.

Line width 0 allows you to draw filled shapes where the line bounding the shape is removed after the shape has been filled. In effect this leaves a shape made up of the fill pattern only.

PRINTING A PICTURE

The best way of learning to use GEM Paint is by experimentation. Play

around with the various options, but don't forget to save any finished drawings to disc before leaving the program, or you'll lose all your handywork. The program prompts you if you forget.

There's bound to come a time when you want to print a picture you've produced with GEM Paint on paper. This is a bit more involved than with some drawing programs, as GEM uses the same utility program (called OUTPUT) to deal with all its graphical output, whether from GEM Paint, GEM Draw, GEM Graph, GEM Write or any of the other applications.

This means you first have to save your picture as a disc file, then leave your current application and call OUTPUT. From there you can build up a list of the files you want to print - and with a suitable printer the results can be quite impressive.

GEM Paint is a very useful tool for work and recreation, and once you've tried it you're quite likely to get hooked.

This isn't the end of the story, though, as GEM is a whole family of programs. Future issues will be casting an eye over other areas of business in which Digital Research believe GEM and its many applications can help.

THE TOP NINE ITEMS FROM THE TOOLS PALLETTE



Eraser
For 'rubbing out' areas of screen. Just like Tippex but with a variety of shapes and size of brush.



Microscope
For enlarging an area of the picture and manipulating it pixel by pixel.



Selector box
For selecting a rectangular area of screen for manipulation.



Text
For writing text onto your picture in a variety of sizes and styles.



Pencil
For freehand drawing - just like the variety you keep breaking.



Line
For drawing straight lines of various thicknesses selected from the Line width palette.



Paint
Just like a paint brush dipped in to the colour selected from the Colour palette. Again, you can select a variety of brush shapes and sizes, and a variety of Patterns.



Spray
More like a spray can, but otherwise similar to Paint.



Paint tap
An amazing gadget that will fill any enclosed space with the Pattern and Colour selected. The area must be enclosed otherwise the fill will leak - the UNDO option comes in handy here!

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---------	----------	---------

NEW

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---------	---------	----------

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NEW

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------------	---------	---------

NEW

* Digital Integ.	Companion	\$69.95
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* Electric Studio	Snip Art	NEW
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Sales Contact : Martin McManic		Mega House 143-145 London Road Chelmsford Essex CM12 5EG		
Telephone : 0245 654321				
Reference : MCL				
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Value to date : £31,455.00				
Ref	Maker	Model	Specification	Price ex VAT
CS001	Epson	FX85	100cps 40x14 80col	£310
CS002	Epson	FX105	150cps 40x14 132col	£410
CS003	Epson	FX105	100cps 132col	£195
CS004	Epson	LX100	100cps 20x14 80col	£435
CS005	Epson	LX100	100cps 30x14 80col	£575
CS006	Epson	LX100	100cps 50x14 132col	£395
CS007	Epson	LX100	300cps 50x14 80col	£325
CS008	Epson	LX100	100cps 45x14 132col	£225
CS009	Epson	550	100cps 45x14 80col	£370
CS010	Canon	ASS	100cps 45x14 80col Colour	£240
CS011	Canon	SS10	100cps daisywheel	£410
CS012	Juki	5520	30cps daisywheel	£260
CS013	Juki	6100	30cps daisywheel	£350
CS014	Juki	6200	35cps daisywheel	£1,795
CS015	Juki	6300	200cps 50x14 132col	£2,700
CS016	Fujitsu	DX	8 page min 84	£1,900
CS017	Fujitsu	LBP5A1	8 page min 84 graphics	£2,650
CS018	Canon	LBP8A2	8 page min 84	£2,650
CS019	Canon	Laser	8 page min 84 graphics	£2,650
CS020	HP	Laser	100cps 50x14 80col	
CS021	HP	HP-810		
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Customer Details and Invoices				
British United Freight 493 Western Avenue Gloucester GL9 5JN		Tel: 0452 Contact: Mike Ref: BUF	03: Display Options	
Invoice	Tax point	Amount	Date paid	Comments
12004	20 Aug 87	£235.00	02 Oct 87	
12399	29 Aug 87	£98.00	02 Oct 87	
12450	01 Oct 87	£385.00		
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				

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TIP-OFFS

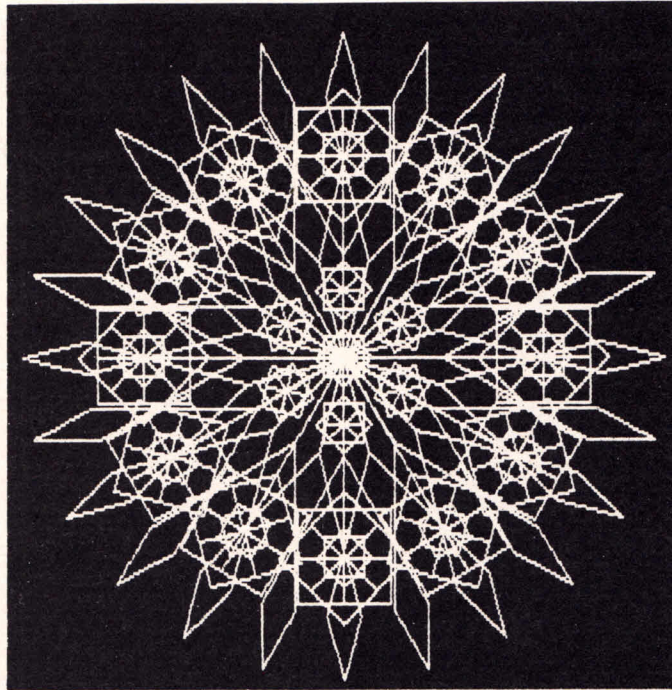
The pages where you get the inside knowledge on how to turn your PCW inside out

DUMPY DUMPS

Feeling depressed because your Logo artwork is coming out dumpy? Are your squares rectangles and your circles ovals? Well here is the answer. Type in the command
`setscrunch 0.5 [Return]`
 This changes the screen's aspect ratio, making the picture on the screen slightly higher than it is wide. So the screen dump actually comes out with square squares and circular circles.

To return to the default aspect ratio type in
`setscrunch 0.468 [Ret]`
 and everything is back to normal. The setscrunch command won't affect the saved Logo picture. They will have the same aspect ratio as they had when they were created.

Sue Jones



DEAR DIARY

Here is a tip to produce a Diary 'program' which automatically appears whenever you use NewWord. If you make up a NewWord boot disc which contains a PROFILE.SUB file (as detailed in our January issue) all you need to do is create a file called DIARY on that disc. Add the command <DDIARY to the Profile.Sub and NewWord will call up the Diary automatically. Don't leave a space between the D (for document) and the D of Diary, or NewWord will not recognise the file name. You can make this

Diary fit your own needs on a daily, weekly or monthly basis. It is a good idea not to give yourself too long a list of tasks, or depression may set in before you touch a key.

M. McManus

ONE MORE TIME

A recent query from a reader concerned the possibility of bringing the previous line of a Basic program back on to the screen without going through the 'Edit Line' procedure. [ALT]+A will display the previous line for editing if one has been reckless enough to hit [RETURN] before checking the line.

Margaret Rugg

ODE TO BATMAN

The bouncing mat goes on the monster's head, but the peacock goes onto your head. Make sure you move off the moving raft, And take the pressie into the Batcraft.

John M. Sorsby

DIY HARDWARE KIT

There seems to be a plethora of useful but expensive hardware add-ons appearing on the market just now. Not everybody can afford to buy all the gadgets to prevent back-ache, eye-strain, heart attacks, bruised knuckles

(from punching the screen) and the like. Here are some cost-cutting solutions to everyday problems:

THING!

You will need a ruler which is about 15 inches long, a bulldog-clip and a lump of Blu-Tac.

Stick the clip on the end of the ruler with the Blu-Tac, and simply resting the ruler on top of the monitor will be firm enough to hold single sheets. More than one sheet and you may need to anchor the ruler.

DISC BOX

Snowed under with discs? Your storage problems are a thing of the past. Simply rip the top off a cassette box (generally available if you buy ten tapes at a go) and the carton will perform superbly as a container for up to 23 discs.

PRINTER NOISE

Instead of a cover to silence the printer, how about wearing ear-plugs? These not only reduce the chatter of 'dots being matrixed', but also dramatically cut down on inane conversations with other users. A similar solution is to connect yourself by headphones to the nearest stereo.

KEYBOARD COVER

Instead of investing in a plastic keyboard cover, drink your coffee through a baby-bottle.

SCREEN FILTER

Do some lateral thinking. Rather than buying a screen filter, use an eye filter - wear sunglasses.

Jeremy Lloyd

IF IT'S TUESDAY, IT MUST BE 1978

The CP/M utility DATE is used to set the system clock and help in time stamping files. But there is another cunning use for it - you can tell what day of the week any date will be between the 1st

LocoScript Mailmerge

For many mail-merging applications all that is required is the simple substitution of names and addresses, or a different name at the start of the letter ("Dear..."). You can do this easily using the standard features of LocoScript, without forking out for LocoMail. The key is to type in the main body of the text within the header and footer zones and leaving the text zone free for the merge data (the variable bits) with each record on a new page. Most of the standard LocoScript features are available when entering or editing text here and the documents are just as easy to create in this section as in the main editing text. You just keep a file on disc containing the names and addresses of the people you are writing to, in a suitable format for printing address labels (eight lines per page with a separate name and address on each new page.) Copy this file in to a new file,

press [f7] and select the 'Edit Header' option. Pressing [f7] twice more gets you to the 'Page Size' menu. If you are using A4 paper (with a page length of 70 lines) for instance you will need a page body of eight lines to accommodate the names and addresses. Allowing for the usual nine lines of header this means a footer zone of 53 lines starting at position 18. Make sure you pick the 'All pages same' option from the pagination menu and then decide what you want in your header zone (an eye catching heading or even a short address maybe). When you are sure everything is right [EXIT] and select 'Save and Print'. Out will come the same number of pages as you have addresses each with the name and address of the person in the right place. It might be wise to experiment to get the results looking the way you want them.

David Tyler

January 1978 and the 31st December 1999. Assuming you have DATE.COM on your current drive, type DATESET, and tell it the date you want. Skip the time setting part by just pressing [RETURN] when it asks you. Now when you type DATE, the PCW will tell you the day

as well! It won't work for any year before 1978 or after 1999, though if you set the time and date to a few seconds before midnight on 31st December 1999, and type DATEC, you will find out that the first day of the new century will be a Saturday.

Nigel Thomas

```
B>date set
Enter today's date (MM/DD/YY): 12/31/99
Enter the time (HH:MM:SS):
B>date
Fri 12/31/99 00:05:08
B>
```

PAGINATING IN LOCOSCRIPT

The LocoScript pagination menu has an annoying restriction if you are printing out documents with a title page. You don't want any header or footer on the title page, and you want the final page of the document to say 'ends' in the footer, but unfortunately you can't have both the first and last pages different from the body pages.

Type a standard title page into the TEMPLATE.STD,

and choose 'last page differs' on the pagination options. But also disable the header and footer for page 1. Now the page numbering will start from the second sheet, and the last page will be different.

LocoScript assumes that the title page is page 1, so starts numbering from page 2. This is annoying, so if you put a zero in the 'First page number' slot, the page after the title page is numbered 1 as it should be

P.A. Tillin

Running program automatically

Although seasoned PCW readers will have seen earlier tips on making up discs which automatically load programs there are may new readers to whom it is still a black art.

To recap then, it is possible to instruct CP/M that it should automatically execute a series of commands (for instance, to run your word processor or spreadsheet) every time it starts up. 'Starting up' CP/M is called 'booting up' in the trade, and discs which automatically execute commands on booting are called 'auto-boot discs.' To make an auto-boot disc, format a spare word disc and, from your master CP/M disc, copy (using PIP) onto it the files J14CPM3.EMS and SUBMIT.COM. Now, if you want your PCW to automatically run SuperCalc 2 every time it starts, take your SuperCalc work disc and copy all the program files (SC2.COM and so on) onto the new work disc - the SuperCalc manual should tell you which files you need to run the program.

Finally, with an editor like RPED (see the Amstrad

manual for details), or any other word processor capable of creating ASCII files, create a file called PROFILE.SUB. Every command you type into this will be treated as a CP/M command line when CP/M starts up, so to run SuperCalc just type into it the single line SC 2, and save the file on your new disc.

Now reset the PCW and put your new disc into the top drive. Automatically, CP/M starts and SuperCalc runs. What has happened is that when CP/M woke up, it looked for the PROFILE.SUB file and obeyed all the commands there just as if you had typed them at the keyboard yourself.

There are a couple of pitfalls. The top drive discs can only hold 173k of files, and the J14CPM3.EMS file which you need takes up 40k itself. Therefore, if your SuperCalc program files take up more than 130k or so you will be unable to use this method. At least keep your data files on a separate disc. Finally, make sure the new disc is not write protected, or the auto-boot process will not work.

MORE DISC SPACE

Single density discs can't store more than 64 files before the directory becomes full. Small letters may only take up 1k each, so if you have 64 of those you will have a full disc with 120k of free space. what a waste. With the aid of the dreaded SID, you can alter the discs so that you get more files per disc - you will never get more than 173 files per disc since each file takes up at least 1k. The modification to make is to DISCKIT, so that any discs formatted with the modified DISCKIT will have the expanded directory space. First, take a work disc containing DISCKIT.COM (from side 2 of the master discs) and SID.COM (side 3). Put it in the drive and type SID. Now follow the keystrokes below - for CODE and CHECK see the table.

▼ The steps in using SID

```
B)SID
CP/M 3 SID - Version 3.0
#RDISKIT.COM
NEXT MSIZE PC END
1D00 1D00 0100 DAF
#S19C7
19C7 02 04
19C8 20
#S1BBF
1BBF CF C9
1BC0 03
#WNEWDK.COM
3030h record(s) written.
#*C
32
```

▼ DIR (FULL) on a newly formatted disc - 128 directory entries allowed

```
A)dir [full]
Scanning Directory...
Directory For Drive A: User 0
-----
Name      Bytes  Recs  Attributes      Name      Bytes  Recs  Attributes
DIR       COM    15k   114 Dir RW
-----
Total Bytes   =   15k   Total Records =   114   Files Found =   1
Total 1k Blocks =   15   Used/Max Dir Entries For Drive A:  1/ 128
A)
```

```
RDISKIT.COM
S19C7
code
.
S1BBF
check
.
WNEWDK.COM
[ALT]+C
```

What you type for CODE and CHECK depends how large you want the directory to be:

Directory Size	Code	Check
32 files	01	CC
64 files	02	CF
96 files	03	CE
128 files	04	C9
160 files	05	C8
192 files	06	CB

The trade-off is that every 32 extra entries takes up 1k of disc space. Thus with only 32 files allowed per disc, you get 174k of free space, but with 196 entries you only get 169k free after formatting. So, once you have chosen the directory size you want, have put the right pair of CODE and CHECK values into SID and saved it, you have a file called NEWDK (for 'new Disc-Kit'). Whenever you want to format a disc, use this rather than DISCKIT. It will appear to be exactly the same as DISCKIT when you run it, but will give you the directory size you wanted. These discs are compatible with LocoScript.

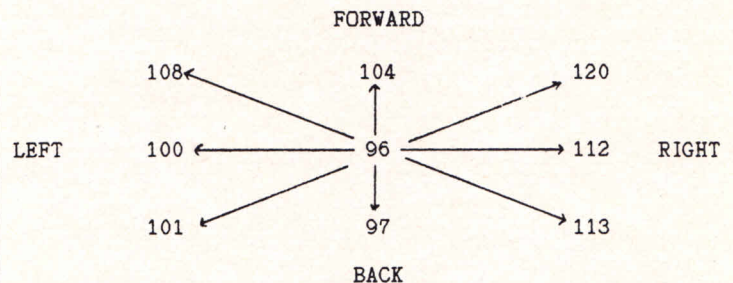
Stewart McCall

SPECTRAVIDEO JOYSTICK

The Spectravideo joystick pack for the PCW, the one that comes with a copy of 'Tomahawk', is a little short on documentation i.e. there isn't any about the joystick itself. In fact, the joystick addresses I/O port 224, which can be read in Mallard BASIC with the INP command:

10 stick=INP(224) or suchlike. If the interface is not plugged in, stick will have a value of 255, but is 96 when the joystick is connected. The diagram shows the different values stick will take depending on the position of the joystick lever. If the 'fire' button is being pressed, all these values are increased by 2.

Paul Weston



NO PROTECTION

Have you ever protected a BASIC file with

```
SAVE "filename" ,P
```

so that you can't get at the listing, and then discovered there is still some work to be done? Fine if you have another copy of the program, but many people are left desperately trying to find some way of unprotecting their programs, staring at the 'improper argument' error message after a LIST command.

If you have a protected file, start BASIC up afresh (or

type NEW). Now type

```
SAVE "TEMP" ,A
```

in effect creating any empty file. LOAD your protected program, and then type

```
MERGE "TEMP"
```

This adds in the empty file, which has no effect on the program. Since the empty file was unprotected, the protection for the whole lot is reset and you can list out the program and resave it normally.

T.F. Potten

Your discoveries, be they with LocoScript, CP/M, Logo or any application can be shared with others by sending them to:

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

CONDITIONAL TESTS & SIMPLE LOOPS

by John Hughes

We have already covered a substantial amount of ground, and inevitably some important points have been skimmed over. We shall now take a quick look at these to see how we can make our work a little tidier and more user-friendly.

Start by loading in the Fahrenheit to Centigrade conversion program which was introduced last time. Although it does what it is meant to, there is still quite a lot that could be done to improve it.

Clearing the screen

The first improvement will be to clear the screen before any prompts or instructions appear. In many versions of BASIC this is very simple - you only need to use a command something like 'CLS' - but, as you may have found out already, this command does not exist in Mallard BASIC.

To clear the screen, put the following line, appropriately numbered, towards the beginning of all your BASIC programs:

```
CLS$=CHR$(27)+"E"+CHR$(27)+"H"
```

Then at whatever point you want the screen to be cleared, put a line reading:

```
PRINT CLS$
```

You don't need to understand how this works; just regard it as a rather cumbersome way of doing what other versions of BASIC do with 'CLS'. Remember that it won't work unless the first line is present in the program before the line reading 'PRINT CLS\$'.

Tidying up the output

The second change in our program places a semicolon after the final inverted commas in both the lines which PRINT a message on the screen. The effect of this is to force the next printed output to appear immediately after the message and on the same

line. More details are given in the box.

Incidentally, when you ran the original Fahrenheit to Centigrade conversion program you may have noticed that the numbers comprising the answers were set in from the left margin by a space equivalent to one character. This is because BASIC always prints a space in front of a positive number and a '-' in front of a negative number; an automatic space is also printed after every number.

Using REMinders

The third improvement to the program is one that doesn't affect the way it appears on the screen and so you may not see the point of it immediately. It involves a new BASIC command, 'REM'. This is short for REMark or REMinder, and it allows programmers to insert comments into their programs to remind themselves later of what a program does, when it was written and other similar information.

The only rules to remember about REM statements are first, that everything which appears on the same line and to the right of the word REM is ignored by BASIC; and second, that wise programmers use REMs very freely.

Going round again

Although last month's program - especially in its modified form - does its job quite adequately, it is still something of a nuisance to use if you want to convert a whole lot of different temperatures from Fahrenheit to Centigrade, as you will have to type RUN each time.

There is a simple BASIC command which will help you to avoid this. It takes the form:

```
GOTO (line number)
```

that is, the command is followed by the number of the line to which you want the program to go.

The following short program serves as a pretty simple example, but nevertheless proves the point.

```
10 REM Program Endless
20 PRINT "See if you can stop
   me!"
30 GOTO 20
```

Before you type it in, SAVE the latest version of the temperature conversion program, then clear it out of the computer's memory by typing NEW and pressing Return.

You must always use NEW when you want to scrap an old BASIC program and type in a new one; otherwise, bits of the old program will stay in the computer's memory and you may cause problems. You don't need to use NEW if you LOAD or RUN a program off a disc.

When you RUN the new program, you will find that the message in Line 20 will be printed repeatedly on the screen (although once the printing reaches the bottom of the screen it will be hard to see that it is in fact still continuing).

This is because Line 30 'transfers control' back to Line 20, so that the program will never stop. It is running, in fact, in an endless 'loop'.

At first, you might think that the only way to break out of this loop is to turn the computer off, or at least to reset it - both of which would mean that you would lose your program - but there is a less drastic way: just hold down the [ALT] key and tap the 'C'. The program will immediately stop, and a 'Break' message will be displayed telling you which line was being executed when you stopped the program.

Don't let the word 'Break' bother you; it doesn't mean that you have actually broken the program, and if you LIST it or reRUN it, you will find that it is unaffected.

You can type either GOTO or GO TO, as you prefer; it makes no difference to the operation of the program.

Your first bug

You might think that it would be easy enough to modify the temperature

conversion program to go round for ever by simply putting a GOTO 10 statement in place of END. However, if you reload the program and try it, you will find that it isn't quite as simple as that.

The reason is that when the program is run, it will blank the screen, ask for a temperature in Fahrenheit, convert it into Centigrade, print the answer on the screen and then immediately go back and blank the screen out again before you have had a chance to read the answer!

Computing is so full of these little traps for the unwary that there is a special name for them - they are called 'bugs'. There is a story, the truth of which is not guaranteed, that Grace Hopper, a well-known early computer programmer, found one day that the computer she was using was not behaving reliably; on investigation, she found that a grasshopper had got itself wedged in the circuitry, thus becoming the original, and literal, computer bug.

There are many ways round this particular glitch, but probably the easiest will be to take out Lines 7 and 8. To remove any line, just type the line number and then press Return, and it will be deleted at once.

An awkward error to spot

It's important that the GOTO command doesn't try to send control of the program to a line which doesn't exist. For instance, if you try 'GOTO 23' in a program which has no line 23, you will be told that there is a 'Line does not exist' error in the line which has the GOTO in it.

The reason for this is that BASIC always reports the number of the line in which it became aware of an error, and in some cases - such as the present one - this is less than helpful.

Because such errors can be extremely difficult to spot, always be careful when using GOTO that the line which is the 'object' of the command really exists; and when deleting a line, be certain that there is no GOTO anywhere else in the program referencing that line.

Tidying the program again

By now, after all our alterations, the original program is looking rather scrappy, with the line numbers at quite irregular intervals. This really makes no difference at all to the running of the program, but if we wanted to go on adding lines, sooner or later we might find that we wanted to insert a new line

where there was no room left for it. Fortunately, you can correct this by just typing RENUM and pressing [RETURN]. If you then LIST your program, you will find that all the lines have been renumbered in increments of 10, and that even the line number in the GOTO line has been altered to match.

Conditional jumps

The GOTO command is an 'unconditional jump' - regardless of the circumstances, it will always transfer control to some other point in the program.

There are other times when this is not really what we want. For example, having to interrupt our temperature conversion program by pressing [ALT]+C is a little reminiscent of stopping a car's engine by deliberately stalling it.

Fortunately BASIC offers another, and much more powerful, command. This takes the form:

IF (condition) THEN (action)

To see how it works, clear out the temperature conversion program with NEW and try the following:

```
10 REM Testing the IF command
20 PRINT "Input a number"
30 INPUT X
40 PRINT "You typed";
50 PRINT X
60 IF X>0 THEN GOTO 20
70 END
```

This program will input a number, print it on the screen, and then check whether it is greater than zero. If it is greater than zero, then control passes back to Line 20, and the program will ask for another number; if the number is not greater than zero, then the program will end.

Notice the symbol '>', meaning 'Greater than'. BASIC recognises a range of these symbols, as you will see from your manual.

A new program

Rather than going back to change our temperature conversion program yet again, we shall have a new one using everything we have learned. The purpose of it is to ask for a series of numbers, adding each one into a running total. As soon as a zero is entered, the program prints the running total and then ends.

A number which is used in this way is called a 'terminator' or a 'rogue value'; it only exists in order to tell the

computer to take a particular course of action - in this case, to stop asking for more numbers and to print the total.

Notice especially the way in which the running total is worked out in Line 90: the variable RTOT is set equal to zero at the beginning of the program, and every time a new number is input, it is added to the value of RTOT. This is the usual way in which running totals and the like are calculated.

Another difference is that we are no longer using very simple variable names, like 'X' and 'A', but ordinary English words like 'NUMBER'. As far as the computer is concerned, it makes little difference which you use, provided only that you use acceptable variable names, but using variable names which have real meaning to humans makes it much easier for other people, or even yourself at a later date, to understand what your program is doing.

```
10 REM Program to input numbers
   and find their total
20 REM Input is terminated by a
   zero input
30 REM The Amstrad User Jun 87
40 CLS$=CHR$(27)+"E"+CHR$(27)
   +"H"
50 PRINT CLS$
60 RTOT=0
70 PRINT "Input a number please
   or zero to terminate";
80 INPUT NUMBER
90 RTOT=RTOT+NUMBER
100 IF NUMBER <>0 THEN GOTO 70
110 PRINT
120 PRINT
130 PRINT "The total of all the
   numbers is";
140 PRINT RTOT
150 END
```

More on Variables

OK, we have looked at variables in the second article of this series, we gave them names like A and B, and now this month slightly more imaginative ones like RTOT and we have looked at some of the rules for giving variable names. There is a little more to variables than this, and now we'll learn how to use them to handle words as well as numbers.

BASIC recognises three different kinds of variable, though many programmers don't distinguish properly between the first two types. The three types are integers (such as 3, 42 - 165), which are whole numbers; real numbers (1.0, 476.78, -.03), which may have a decimal part; and string

variables, which are collections of characters not used for arithmetic (Hello, 01 326 4567, Jones & Son). Strings have to be enclosed in speech marks, like "Good morning", when they are used in a program.

Incidentally, this division of variables into three types isn't the result of some fundamental law of nature. If you ever move on to learn other languages, like Pascal, you will find that many other types are possible as well, and that in some languages you can even make up types of your own. But most learners find that BASIC's three different kinds of variable are plenty to be going on with.

Are your integers real?

You may wonder why BASIC should bother to have two different sorts of variable to handle numbers; after all, numbers are numbers, surely? It has to be admitted that a lot of happy-go-lucky programmers use real variables all the time, whether they are dealing with real numbers or not. Indeed, we did so in Part 2 of this series.

All the same, integers do have two big advantages over real numbers. The first is that they only take up about half as much room in the computer's memory as real numbers, so if you are running a big program which needs a lot of elbow-room, it makes sense to use integers whenever you can.

The second good thing about integers is that they can always be represented completely accurately in the computer whereas real numbers come with no such guarantee. This is because computers only work to a certain accuracy, and some fractions can't be represented with 100% precision.

It may help you to understand this if you remember that even decimals cannot represent some quite ordinary fractions like one-third accurately, but have to make do with 0.333 recurring.

There was a famous fraud some years ago which relied on the fact that this 'rounding error' caused minute amounts to be 'lost' while the interest on savings accounts was being calculated. The fraud consisted of adding all these tiny sums together and then crediting them to the account of the bank employee who had devised the scheme. Over several months, these tiny fractions garnered from hundreds of accounts grew into a lot of money!

To show that a variable contains an integer, put a percent sign, '%', at the

end of the variable name. Real variables have no special symbol at the end of their name. You can see therefore that TOTAL and RESULT would both represent real numbers and TOTAL% and RESULT% would both be integers.

Just stringing along

String variables are altogether more interesting. You add a dollar sign, '\$', to the end of their names to show they're strings. They represent things like people's names, addresses and telephone numbers. They are called Strings because they consist of groups of characters which are 'string' together.

Suppose you wanted a program to input and later output the names and addresses of your friends - a sort of simple address book. The program below is an example of what this might look like, and will hold four names and telephone numbers - you could extend this to any number, but the repeated identical prompts get boring; we shall see how to deal with this later. For the moment, type in the program as it is and try it out. Because the program is rather a long one, you will find it quicker to use BASIC's AUTO facility to save you having to put in the line numbers.

```
10 CLS$=CHR$(27)+"E"+CHR$(27)
  + "H"
20 PRINT CLS$
30 PRINT
40 PRINT
50 PRINT
60 PRINT "Type in a name and
  press Return"
70 INPUT NAME1$
80 PRINT "Type in the telephone
  number and press Return"
90 INPUT NUMBER1$
100 PRINT
110 PRINT "Type in name and
  press Return"
120 INPUT NAME2$
130 PRINT "Type in the telephone
  number and press Return"
140 INPUT NUMBER2$
150 PRINT
160 PRINT "Type in name and
  press Return"
170 INPUT NAME3$
180 PRINT "Type in the telephone
  number and press Return"
190 INPUT NUMBER3$
200 PRINT
210 PRINT "Type in name and
  press Return"
220 INPUT NAME4$
```

```
230 PRINT "Type in the telephone
  number and press Return"
240 INPUT NUMBER4$
250 PRINT CLS$
260 PRINT "          NAMES
          TELEPHONE NUMBERS"
270 PRINT
280 PRINT
290 PRINT NAME1$,,,NUMBER1$
300 PRINT NAME2$,,,NUMBER2$
310 PRINT NAME3$,,,NUMBER3$
320 PRINT NAME4$,,,NUMBER4$
330 PRINT
340 PRINT
350 END
```

Incidentally, you may be wondering why the telephone number needs to be input as a string variable; telephone numbers could surely be put in as numeric variables, without the '\$' on the end of the variable name.

The answer is that it all depends on how the phone number is typed in; if you use only numbers, there will be no problem, but if you include any non-numeric characters, like a hyphen or brackets, then you will get an error message. Play safe, therefore, use a string variable.

Save the directory program as DIRECT.BAS; we shall come back to it before the end of the session.

What can you do with a string?

Obviously, you can't multiply and divide string variables like real and integer variables. What, after all, would be the result of PAUL times RINGO? (10000 holes in Blackburn, Lancashire? - Ed)

Basically, there are three operations which you can carry out on strings, and all word processing operations are based on them; you can add them together in a special way called 'concatenation'; you can pull a string to pieces, called 'string slicing'; and you can compare one string with another, to see if they are the same, or if one comes before the other alphabetically. We shall look briefly at the first of these here.

```
10 PRINT "Give me a word"
20 INPUT FIRST$
30 PRINT "Give me another word"
40 INPUT SECOND$
50 WHOLE$=FIRST+SECOND$
60 PRINT WHOLE$
70 END
```

Joining strings

The above program shows how strings can be concatenated; it asks the user

to input two strings, and then 'adds' them together with the '+' sign. Type it in, and then input "Good" as the first string and "morning" as the second string; the program will fasten them together to produce "Goodmorning".

Can you see how to insert a space between the two words? There are actually two possible ways; the more professional would be to alter the program by changing Line 50 to put the space in automatically; it would then read

```
50 WHOLE$=FIRST$+" "+SECOND$
```

A simpler solution would be to hit the space bar before entering the first character of the second word, thus making the second word actually begin with a space.

Keeping prompts short with strings

If you entered the first program, you probably found typing all those identical prompts rather boring. Worse, they swallow up an unnecessary amount of room in your PCW's memory.

A simpler solution is to put each prompt into a string variable. For example, PROMPT1\$ could contain "Type in a name and press Return", and PROMPT2\$ could be "Type in the telephone number and press Return".

Wherever the original program had the first prompt, you could replace it with PRINT PROMPT1\$, and wherever the second prompt was needed, you could use PRINT PROMPT2\$.

The following program shows the result.

```
10 CLS$=CHR$(27)+"E"+CHR$(27)+"H"
20 PROMPT1$="Type in a name and
   press Return"
30 PROMPT2$="Type in the telephone
   number and press Return"
40 PRINT CLS$
50 PRINT
60 PRINT
70 PRINT
80 PRINT PROMPT1$
90 INPUT NAME1$
100 PRINT PROMPT2$
110 INPUT NUMBER1$
120 PRINT
130 PRINT PROMPT1$
140 INPUT NAME2$
150 PRINT PROMPT2$
160 INPUT NUMBER2$
170 PRINT
180 PRINT PROMPT1$
190 INPUT NAME3$
```

```
200 PRINT PROMPT2$
210 INPUT NUMBER3$
220 PRINT
230 PRINT PROMPT1$
240 INPUT NAME4$
250 PRINT PROMPT2$
260 INPUT NUMBER4$
270 PRINT CLS$
280 PRINT "          NAMES
          TELEPHONE NUMBERS"
290 PRINT
300 PRINT
310 PRINT NAME1$,,,NUMBER1$
320 PRINT NAME2$,,,NUMBER2$
330 PRINT NAME3$,,,NUMBER3$
340 PRINT NAME4$,,,NUMBER4$
350 END
```

Change your program to match it, but don't save it onto disc yet; we are going to make one more important change which will help to get some real use out of the program.

This is to enable us to get the little telephone directory printed on the printer, instead of having it appear only on the screen. The last program (below) shows a routine to do this; add these lines to the end of your program.

```
350 PRINT "Do you want a
   printout? Press 'Y' for Yes,
   any other key for No"
360 ANSWER$=INKEY$: IF ANSWER$
   ="" THEN 360
370 IF ANSWER$="Y" OR ANSWER$
   ="y" THEN 390
380 GOTO 490
390 PRINT "Press any key when
   the printer is ready"
400 ANSWER$=INKEY$: IF ANSWER$
   ="" THEN 400
410 LPRINT "          NAMES
          TELEPHONE NUMBERS"
420 LPRINT
430 LPRINT
440 LPRINT NAME1$,,,NUMBER1$
450 LPRINT NAME2$,,,NUMBER2$
460 LPRINT NAME3$,,,NUMBER3$
470 LPRINT NAME4$,,,NUMBER4$
490 END
```

Briefly, what these lines do is ask you whether you want a printout or not. If you press 'Y' or 'y', you will be prompted to make sure the printer is ready, and then to "Hit any key"; finally, the address-list will be printed out and the program will end.

The way this is done involves a new BASIC command, INKEY\$. Look carefully at Lines 360 and 400 to see how it works. When INKEY\$ appears in a program, the keyboard is scanned to see if any keys are being pressed; if

not, a 'null value' (ie. nothing at all) is assigned to ANSWER\$; if a key is pressed, then ANSWER\$ is given the value of that key.

Lines 360 and 400 use a little bit of trickery to make sure that the program sticks at the INKEY\$ until you press a key; until a key-press is detected, the program will just loop around within each line. If you press anything except 'Y' or 'y' in Line 370, then the directory will not be printed.

INKEY\$ is a very useful command, especially as any key which is pressed in answer to it is not reflected ('echoed' is the jargon word) on the screen. People who are not used to computers don't realise that they often need to press the [RETURN] key after making an input, and INKEY\$ relieves them of that bother as well.

A PRINT aside

Notice the three commas in Lines 310 - 340. Commas between items in the 'print list' - the variables which come after the word PRINT - have the effect of spacing output at notional 'tab spaces' across the screen, and the three commas we have used here will make the display format tidily under the headings. Notice also the use of PRINT on its own in a program line; these place a blank line on the screen.

The 'Redo from start' message.

One of the most confusing error messages that you can get from BASIC is 'Redo from start'. What it means is that you have not typed in the kind of data that the program is expecting; usually, you have input non-numeric characters such as 'A', 'x' or '&' when the program was expecting a number.

This may be because you have made a mistake during input, but when you are using a program that you have written yourself it almost always means that you have used a numeric variable name when you should have specified a string variable. Press [STOP] to leave the program and put a '\$' on the end of the name of every variable which expects a string value.

Using the AUTO facility

If you type AUTO and press [RETURN] before beginning to enter a program, your PCW will prompt you with automatic line numbers, starting at 10 and then increasing in steps of 10. When you have finished entering new lines, break out of AUTO either by pressing [STOP] or by holding down the [ALT] and tapping [C].

How long is a string?

A BASIC string can be up to 255 characters long. You can't put a longer string into a program directly, but you could accidentally generate one by concatenating shorter ones together. If this happens, you will get a 'String too long' error message and the program will stop.

SUPERTYPE (nee FontGem) & MONEY MANAGER

Reviewed by Arnold Goldman

Arnold turns his attentions to SuperType (the new name for Gemini's FontGem) which offers 8 new typefaces for LocoScript and CP/M with the standard PCW printer, and Money Manager, a personal accounting system for the CPCs as well as the PCWs.

SuperType - PCW8256/8512 Imported by ISD - \$64.95

If you wish to add some of the different print styles shown in the box below to your LocoScript printing, then you may well find this package (formerly called FontGem) useful.

SuperType is contained on one side of a standard disc. The instruction booklet has 4 pages of instruction, and 2 pages of samples of the fonts available. So there isn't too much to absorb, and even less to overlook. If one follows the instructions exactly, a disc is soon prepared which has the

SuperType files, plus CP/M and one or two other files which make the use of SuperType so easy.

Having made the necessary disc, how easy is it to use? The easiest way to use SuperType is to load a LocoScript start-up file on to the other side of the newly formed SuperType disc. This LocoScript should be reserved for SuperType print styles because, once the chosen SuperType style has been installed on the LocoScript disc, it is not possible to return to the standard fonts without the use of Diskit and the copying process.

Now we have our disc with SuperType on one side, and LocoScript on the other, insert the disc with SuperType in the disc drive and press SHIFT+EXTRA+EXIT. This resets the system and loads SuperType. If you have just switched on your PCW, insert the SuperType disc and the computer will do the rest.

The computer prompts you for the insertion of the target file, on which you wish to load one of the 8 available type styles. All this takes about 2 minutes. As part of this review I worked through all 8 styles in quick succession and 2 minutes is all the time it takes to change from one style to another. So, for ease of initial preparation and subsequent use, SuperType must rate as first class.

Well, now I have described how easy it is to use, how useful is it? If, like me, you have read the advertising blurb for this package, you may have gained the impression that you could replace all the type styles on LocoScript with another 8 different styles. This is not so. SuperType allows you to install only one of the 8 options at any time. At first I was disappointed at this perceived failing in the SuperType package, but after realising how easy it is to change from one style to another, my disappointment disappeared.

On LocoScript, the SuperType style selected replaces the PS, PSD, 12, 12D, 10, and 10D pitch options. The standard LocoScript pitch options of 15, 15D, 17, 17D and half height remain. As recommended by the Gemini people, the best results are obtained by using the proportional spacing pitch options.

I should point out, at this stage, that all the various options of characters, from languages other than English, that are a feature of the LocoScript keyboard, are not affected by the four Business styles. They are affected by the other four styles, but only to a limited extent, and should not be a problem to anyone other than the most unusual user. After all, who but a reviewer would want to mix up Old English, Vandeville and Business styles within one document?

So far, I have only mentioned the use of SuperType in association with LocoScript. This is because for most PCW users this is likely to be the most useful way of implementing SuperType. It also works with CP/M. I have not tried it, but the installation is equally simple and you will then be able to list all your programs in Old English, or whatever.

So there you are, if a change of style appeals to you, then SuperType may well be appealing.

'Business 1' NLQ, bold, *italic*, enlarged
'Business 2' NLQ, bold, *italic*, enlarged
'Business 3' NLQ, bold, *italic*, enlarged
'BUSINESS 4' NLQ, bold, *ITALIC*, ENLARGED
'Old English' NLQ, bold, *italic*, enlarged
'Vaudeville' NLQ, bold, *italic*, enlarged
'Outline' NLQ, bold, *italic*, enlarged
'Stencil' NLQ, bold, *italic*, enlarged

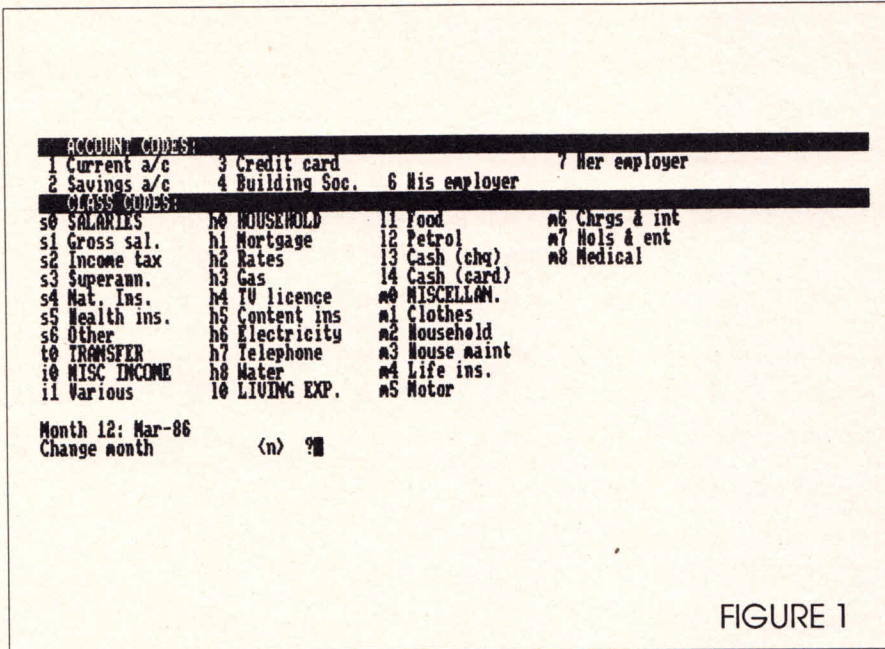


FIGURE 1

Money Manager - Disc: for the CPC464/6128 or PCW8256/512 Imported by ISD - \$99.95

Money Manager is a program for the small business operator, club treasurer, or private householder who wishes to maintain detailed records of where the money went to.

The program is supplied in two forms on the disc. One is for PCW owners, and the other for CPC owners. The instructions for preparing the working disc are very easily followed. The working disc includes a PROFILE.SUB file which loads the program on start up, with a brief pause to allow for setting of the printer instructions using the CP/M PAPER command. The instruction book is only 24 pages long, but is well written with a good index.

Having said that the presentation, installation and instructions are straightforward and simple, what does it do?

Well it doesn't claim to be an accounting package but it does enable the user to keep track of income and expenses in as complex and comprehensive a manner as I could imagine anyone would require. If you read the description on the package cover it claims to be capable of many things. I have tried out all the claims, and can honestly say that the only doubtful claim is that of pacifying bank managers and tax inspectors.

It is possible to split one's financial dealings across 9 accounts and 50 classes. Figure 1 shows the layout of

the screen when entering the transactions for the month of March 1986. The data are from the sample files supplied with Money Manager for practice purposes. The accounts used are shown at the top, with the class codes below. Up to 100 entries are allowed each month. If more than this is a regular occurrence, it is suggested that two or more files be set up for different sections of your operations.

Having entered all the data, it is possible to retrieve single items of information using a search function, or set out transactions by the account or

by the month. The information can be selected for analysis in many ways. Figure 2 is a bar chart of a statement for a whole year of all accounts and all classes. It can be shown as a pie-chart on the CPC range of computers. The printout of the bar graph was not so impressive (not shown) as the author has not used the GSX capabilities of the PCW to produce shading. This is more apparent when the printer is used to display the bar graph instead of the screen. However, these are frills that are not essential to make Money Manager a useful program.

I have tried using Money Manager for my own personal accounts, and the only criticism I have is that it is a lot of messing to load Money Manager every time an account is paid, or some money is spent. This would apply to any accounting package of course, and if all operations are entered once a week the task becomes minimal. It doesn't make your money go any further though, but I suspect it will make you thoroughly depressed at the end of the year when you see where it all went.

I could see it being quite useful for the treasurer of the Car Club, but I shall not be standing for that position. I have enough on my plate having taken on the secretary's job because of the PCW, LocoScript and a database program.

If I ever have a small business I would certainly consider Money Manager for keeping the books in order.

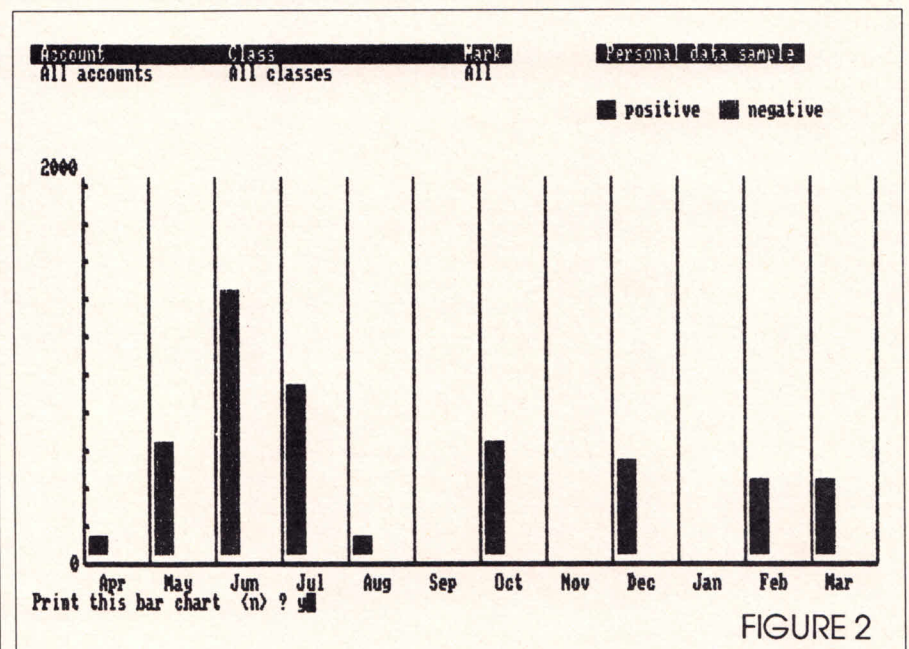


FIGURE 2

LEATHER GODDESSES OF PHOBOS

A review of the Infocom adventure by Michael Shepherd

You might have noticed that in the recent issues of various computer mags, there has been a major review published of this game. There are two choices for this, either Infocom are bribing editors or the game is brilliant. I can tell you now it is the latter, Infocom have outdone themselves on this adventure.

This is their first offering in a new style of adventure, the comedy category, which I believe was introduced due to the huge success of "Hitchhikers Guide to the Galaxy". And if Leather Goddesses of Phobos (LGOP) is anything to go by, future releases will be mega hits.

If the title of LGOP isn't hint enough, it also includes sex in the story-line. To this end you can play the game in three modes. These are TAME, SUGGESTIVE and LEWD, the difference being that some room descriptions and responses are more risqué than the lower modes. Also in the higher modes the computer recognises naughty inputs as opposed to Tame's response "I don't know that word". I might add at this point that LGOP can be played even in Lewd mode with barely a sexual connotation, and it is entirely up to the player if he wishes to take a more risqué approach to solving the game; thus seeing some of the naughtier responses.

It is 1936, the era of Flash Gordon and similar SF characters. (You know the stories in which the hero wears a solid brass loincloth.) You start in a bar after just drinking your fifth beer, so obviously you "feel an urge". So

depending on if you go to the Ladies or the Gents; determines your sex for the game and the sex of the major characters in it. Suddenly you are snatched from Earth by aliens and taken to Phobos, one of Mars' two moons. It seems before the Leather Goddesses invade Earth they want to experiment on humans to ensure the invasion is successful.

You escape from your cell (they forgot to lock the door) and meet your companion for the adventure, Trent or Tiffany - depending on your sex. A couple of moves later Trent/Tiffany has a brilliant idea for an Anti LGOP

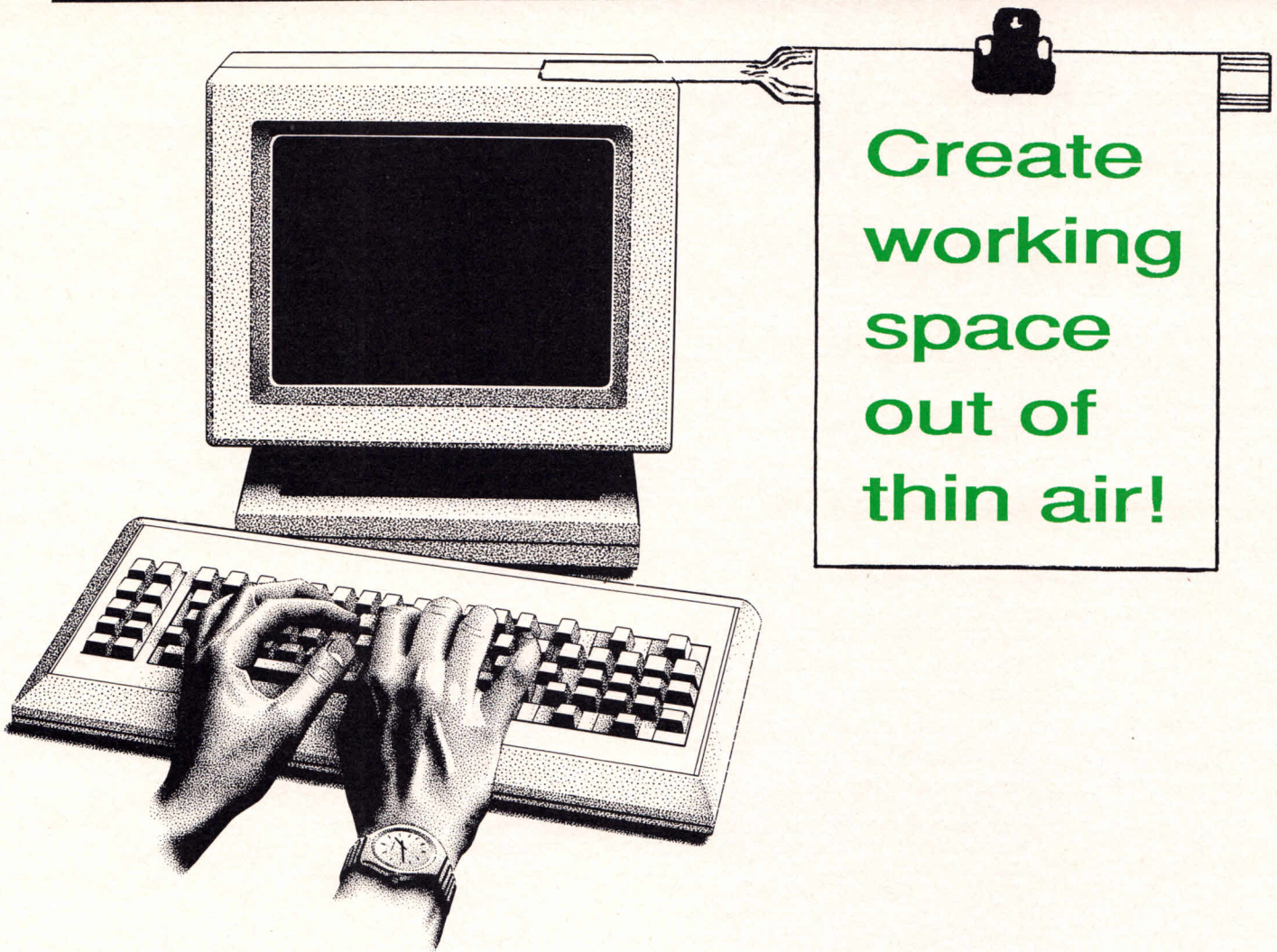
Jungle of Venus and even Cleveland, Ohio.

The problems presented are highly amusing and the solutions even more so. For example, the rubber hose is in a cage with a gorilla, and the only way in is to have your mind transferred into the ape by the mad scientist - easy enough. The trick is to get out of the cage and to get your mind back in it's own body - not so easy. Their maze in LGOP is one of the most unusual I've seen, and what makes it more exasperating is the map of the maze is included in your game package! Infocom have even outdone themselves in the game package, as well as the comprehensive manual, you get a great 3D comic and 3D glasses (has to be seen to be believed). A "Scratch and Sniff" card is included so you can more fully savour the odours presented for your enjoyment. This is also a "soft" way to prevent piracy as you need the maze map, and two hints in the comic are essential to complete the game. Infocom regularly rate 10/10 in their adventures. This game rates an 11, buy it if you can.



machine. The parts list includes a white mouse, any sized photo of Jean Harlow and a rubber hose. Off you go followed by your loyal companion to obtain the required objects. Transport to and from the areas the parts are in, is done by means of black circles, stepping on one transports you to places like the Martian desert, the

FOOTNOTE: I spent a number of late nights solving this game, and have collected the solutions and have solved a number of others. So if you have a modem and a Viatel subscription, you can message me on Viatel No. 259929880 for clues on the following: ZORK 1, ENCHANTER, STARCROSS, HITCHHIKERS GUIDE TO THE GALAXY, SORCERER, & LGOP of course.



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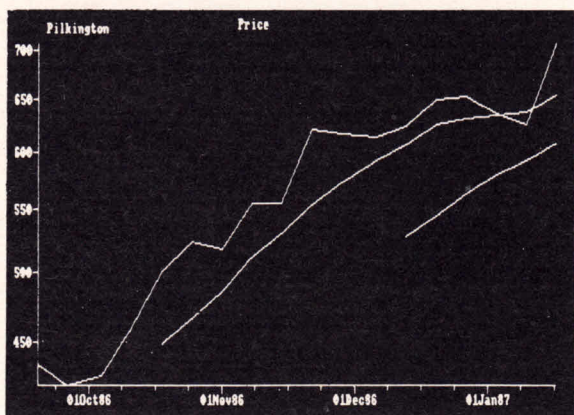
Tel: (075) 325 464

"SHAREWARE" FOR INVESTORS

Stockmarket - Meridian Software
Imported by AMSNET - \$115 : Disc only for the
CPC464/ 664/6128 and the PCW 8256/8512

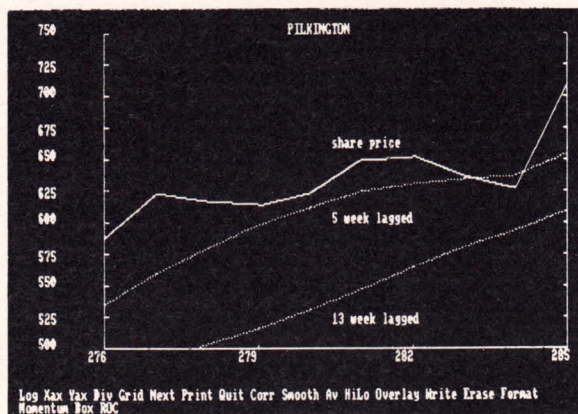
The package consists of a 3" disc and 50 page booklet of instructions. The text is clear and well illustrated with drawings of the various menu options - the print may be rather small, but if you can read the share prices in the daily papers you won't need new glasses for this.

The main side of the disc contains the accounts program for recording details of purchases and sales of shares or other investments, as well as recording the balances in up to four cash accounts. Each file holds 50 entries which is plenty



▲ The Stockmarket plot of Pilkington prices over 10 weeks, showing the 5 and 13 week averages for recent dates. There is no facility for free text entry.

▼ The same share on the Sharemaster plot. Difference in plotting and data storage techniques result in the 5 and 13 week averages appearing for early dates too. Note the free text facility for adding labels.



for the small investor. Once the basic details have been entered you can move on to recording dividends, yields and P/E (price/earnings) ratios. The last two are automatically updated each time you enter a revised price for the shareholdings. The menus for buying and selling contain user-defined default values for the costs involved ie. stamp duty, commission and so on. Total dealing costs, dividends and the portfolio value are shown when you list the account with provision to list dividends and cash transactions separately.

The entire program is menu driven. The main menu itemises the principal functions and leads on to an option menu which is accessed using the cursor keys. Data entry is virtually the only stage at which information has to be typed in directly. In most cases there is either a default answer or a predefined set of choice answers, all of which makes the program easy to use. It is impossible to exit from any part of the program without going through a save routine, and most of the default options in the menus are fail-safe which makes for safety but is slow.

Also on side 1 is a prices menu which enables the prices of up to twelve shares per file to be recorded for 260 dates. These shares need not be the same as those contained in the accounts menu for this part of Stockmarket is used to identify which shares to buy or sell and when. Side 2 of the disc contains the program for plotting the price movements of the selected shares. The most useful tool here is the ability to plot average prices over a period - you can choose the length of the period and decide whether to average at the middle or end.

Sharemaster - Synergy Software
Imported by AMSNET - PCWs : \$365, PCs : \$525

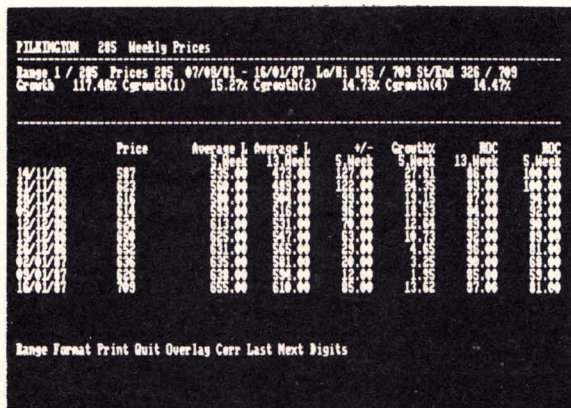
Sharemaster comes with loose leaf instruction manual, which is fundamentally well produced but has some irritating features. BBC computers and PCWs are covered in the instructions and the differences are not always obvious before you reach the end of the paragraph. At the back of the book newcomers to technical analysis will find a good description of how to use the charting indicators, and there is a useful section on trouble shooting too.

Sharemaster runs from CP/M but has insufficient room on the disc to hold the entire program. Some files are copied across as part of the installation process but CP/M must be restarted from scratch each time the program is run. This is a reflection of Sharemaster's greater facilities and the extra space they take up. Side 1 of the disc contains the main program, whilst side 2 has the data on it. Side 2

also contains some operating files, so a separate copy of side 2 must be made for each portfolio. Specimen files are included on the data side and with these it is easy to work through the book trying out all the functions.

At this stage the increased power of Sharemaster becomes apparent. Each portfolio holds up to 50 files which can be manipulated using six program modules covering different aspects of management and analysis, which makes the program easier and quicker to use than Stockmarket where the management and analysis files have to be kept separate. The Share Price Editor module is used to update prices and has a useful date prompt. Prices can be updated globally (ie. all the shares on the same date) or by individual share. The second data entry module is the Deal Database - here you record details of purchases, sales and dividends relating to the portfolio. Dealing costs must be entered individually, and you can add textual notes about each file.

Once the data is entered you can begin to analyse it with the Charting mode. Prices can be charted over a selected period in various ways such as exponentially weighted curves, moving averages, point and figure charts, rate of change, momentum and HiLo. Different curves can be superimposed for comparative purposes. Care is needed to get the scaling correct, but once mastered this excellent facility is the heart of the program if you intend to buy or sell shares based on technical analysis.



▲ A print from Sharemaster Price Analysis mode showing Pilkington shares over the same period. Columns 3 and 4 are the lagged averages. The remaining 4 columns show selected trends averaged over 5 or 13 weeks.

There is much more flexibility than in Stockmarket. A valuable tool is the Price Analysis mode which gives a tabular analysis of share price movements. The top half of the screen shows nine different bits of information about the share whilst the bottom half can be configured to show six columns of selected information. Details of another share can be displayed for comparison. As elsewhere in Sharemaster the user is given detailed control over the selection and display of information.

PC1512 owners naturally get more for the additional \$150 outlay for their version. This version is altogether more powerful in that it provides more charting capabilities, can handle more accounts (up to 300) and more clients (up to 20).

Which one for me?

Sharemaster is significantly more powerful and versatile than Stockmarket, but given that it is more than three times the price this is hardly surprising. Whether the differential is worth it depends on what sort of shareholder you are. Sharemaster is ideal if you are an active shareholder and fancy technical analysis as a means of managing your portfolio. It is also slightly easier and quicker to use if you have many share holdings.

On the other hand Stockmarket will be perfectly satisfactory for the newcomer to share ownership with a small portfolio, or if you prefer to buy and sell according to the advice given by your stockbroker or newspaper. Its analytical capability is quite adequate for a graphical display of share price movements and for buy/sell indicators based on moving averages.

Readers who struggle with income tax returns will note that neither program has the facility to print out dividends in a format that the Commissioner of Taxation requires, or do a selective print of capital gains in tax return format. Sadly the PCW is not powerful enough to handle the complex rules involved and you will still need to perform these functions with pencil, calculator and icepack.

A millionaire overnight

The art of making money on the Stock Exchange lies in knowing when to buy and sell. There are two ways of assessing this.

Company Performance: theoretically the value of a company's shares should reflect its trading performance but this is not always so. For instance the published accounts are usually months out of date and many other political and market factors can have sudden and unpredictable effects on profits. City stockbrokers maintain extensive research departments who assess all these factors before making recommendations to clients.

Technical Analysis: the alternative is to disregard the company's performance and study the way its share price has moved. If buyers outnumber sellers the price rises and vice versa. Eventually someone will lose their nerve and the price will start to move the other way. Technical analysis looks at recent share performance and attempts to identify the point at which the reversal will occur and thus the time at which to buy or sell. Sharemaster has many features which help with this analysis, Stockmarket has one.

There are several good books on technical analysis which you should study before using this method.

Moving averages

The 'moving average' method is one of the most popular forms of analysis and can be done using either of the programs. When a falling average starts to rise it is usually a buy indicator and likewise if a rising average starts to fall you should consider selling. 13 weeks is a common averaging period giving a reasonable margin of safety.

Stocks and shares

Stocks are a way in which the Government borrows money at fixed interest rates. You don't make much capital gain, but you shouldn't lose much either. Shares on the other hand, are a riskier form of investment in which capital gain rather than income is the main aim. Share prices go down as well as up!

SPREADING THE LOAD

A personal organiser, simple accounts package and cost estimator rolled into one?

See the light, and discover the power of spreadsheets.

When you first bought your PCW, most likely your prime objective was to do word processing. Maybe after a couple of months, when you had mastered the ins and outs of LocoScript, you decided to splash out on a database to organise your record collection with. But where do you go from there? How else can your computer bring order to the chaos of your life?

Imagine yourself setting out on a new business venture for the first time, with your design for a better mousetrap patented and ready to roll. The burning question is how much you should charge for your product to bring in the most money.

Charge too little, and you don't make enough profit to cover your overheads and costs. Charge too much, and no-one will buy from you! So where is the middle ground? This is an age-old problem, and one that ultimately only business acumen will solve. To plan your path to riches, you take out a notepad and write out:

Number of mousetraps: 10,000
Purchase cost: \$5,000
Marketing cost: \$1,000
Unit price: \$1.95
Total profit: $10,000 \times \$1.95 - \$5,000 - \$1,000 = \$13,500$

If you order bigger a production run, the cost per unit to you goes down and the profits go up, at the expense of a greater capital outlay. By deciding what investment you can afford, you can see what your return will be.

Here is where spreadsheets come in. The calculation just written down is what spreadsheets are really good at, only they can do it on a much larger scale.

Spreadsheets are really computerised doodling pads ruled into columns and rows. On this pad, you can write down all the facts and figures relating to a problem, and then arrange them so you can see all the column totals, deficits, profits, averages and so on.

The strength of doing it by computer, rather than on paper, is that if you change your mind and want to see what would happen if you doubled the production run, the spreadsheet program will do it all for you. Just alter the essential facts, ie. type in the details of the new order volume and cost, and all the figures that depend on them will be automatically updated for you. With great imagination, this is called a 'what if' feature. It works because a spreadsheet is intelligent, in a 'computery' kind of way. It doesn't just think of numbers as strings of digits, but it knows how they were worked out. In the mousetrap example, the spreadsheet knows (because

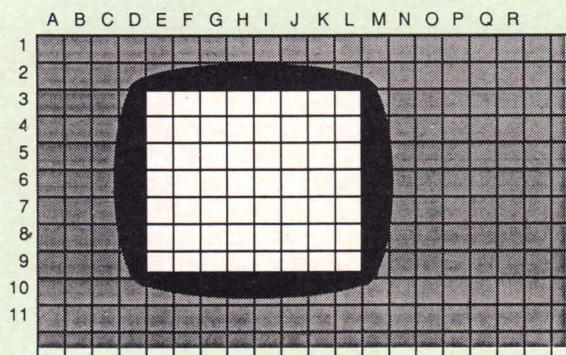
you have told it!) that the profit is the number sold times the unit price minus the costs.

What a spreadsheet really is

Spreadsheets are essentially financial planning and reporting tools. That sounds a bit dry, but properly used a spreadsheet can serve as a personal organiser, a cost estimator and a simple accounts package.

The cost estimator aspect has been covered to some extent in the mousetrap example. It is perhaps the home or simple business accounts part that appeals to many people going into business for the first time. Formal accounts packages are fine once you have got a system worked out, but inflexible if you are doing casual trade. For instance, accounts packages don't let you alter information once you've entered it, to preserve the integrity of the audit trail.

When you first load a spreadsheet program, you are faced with a screen which is totally blank apart from a number for each row and a letter for each column. Typically there will be 8 or so columns on the screen, each one about 10



▲ How what you see on the screen relates to the whole spreadsheet characters wide, and 25 rows. Therefore you have a large number of 'cells', as they are called, and you can put virtually anything you like in each cell.

One thing to remember is that the cells that you can see on the screen are only a small section of the total available. The spreadsheet data can stretch over hundreds of columns and rows, with the screen being a 'window', showing a portion of the whole at any time.

How you organise the cells is entirely up to you, as best suits your application, but bear in mind that you can't print more than about 130 characters on a line on the standard PCW printer. This means that spreadsheets with lots of columns can be awkward to print out (but see the note on rotation programs at the end of this article).

For instance, consider the example below, a typical company's order book. Every cell is referred to by its co-ordinate - A1, B7 and so on. Using the cursor keys, you move to the cell which you want to fill and type the text or number to go in there. You can type text onto the spreadsheet anywhere you like, to make it more readable, and then put numbers in the appropriate places.

If you type text, or a number like 43.12, that is what will be placed in the current cell. You can also enter a 'formula' which tells the spreadsheet to work things out for you. If you were positioned at cell A3, and you typed into the cell A1 + A2, the spreadsheet would put into A3 the sum of cells A1 and A2. If A1 or A2 change later on, A3 will be automatically updated.

In the example, the 'Qty', 'ex-Tax' and 'Tax rate' columns have been typed in by the user, but the 'Total' column has been worked out by the program. So for row 7, all you do is tell the program that the total is the quantity (cell B7) times the ex-tax price, with tax added on. A little maths shows that if tax is x%, to get from the tax-exclusive to the tax-inclusive price, you just multiply by (100+x)/100.

At the bottom of the 'Total' column, the spreadsheet has been told to add up all the figures in the column, from cell E7 to E12 inclusive.

	A	B	C	D	E	etc
1	The Aussie Multi-National Company					
2						
3	Sales for 1986/7					
4						
5	Name	Qty	Ex-tax	Tax rate	Total	
6	-----					
7	Widgets	10	49.95	15.00	574.42	
8	Manuals	10	9.95	0.00	99.50	
9	Hot lunches	4	2.50	15.00	11.50	
10	Sandwiches	5	.95	0.00	4.75	
11	Shotguns	25	80.00	15.00	2300.00	
12	Clay Fers.	150	1.10	15.00	189.75	
13						
14	=====					
15					3179.92	
16	To get the total, the formula SUM(E7:E12) is entered.					
e						
t						
c						

Again and again and again

In the order book example, to work out the total for the first row you move to cell E7 and type in the formula $B7 * C7 * (100 + D7) / 100$ to get the right figure. Now if you alter the quantity of Widgets ordered in cell B7, the total for the row in E7 is automatically updated.

Essentially you want to repeat this calculation for rows 8 to 12, substituting the row number for 7 throughout. Do you have to retype the formula for every cell individually? The answer is that most spreadsheets have 'copy' command. Since spreadsheets are computer programs, 'copy' is far too short a word, so the process is called 'replicating' instead.

To generate the Totals column, you type in the formula for row 7 into cell E7 as explained. Now you give the command to copy cell E7 to cell E8, and the calculation is copied

across, but altered so that all the references to row 7 are replaced by 8. Thus rows 8 to 12 can be painlessly totalled once you have done the hard work once on row 7.

Replication is a powerful area of spreadsheets, and allows you to quickly set up large applications. You can copy whole columns, rows and blocks around.

Presentable results

Spreadsheets are useful aids, but you will want to be able to get a paper printout summarising the conclusions, either for your own benefit or to show colleagues.

Producing printed output is one area where spreadsheets are generally weak. The standard form of output is that you just print out everything you see on the screen, in the exact row/column format that it appears. You can choose to print out only a subsection, like the block A5 to E10 (meaning the block of cells with A5 at the top left and E10 at the bottom right), and you can omit the row numbers and column letters.

Of the specific spreadsheets mentioned in this article, only Cracker 2 provides any degree of sophistication. With Cracker, you can analyse the spreadsheet data and produce graphs, barcharts or pie charts, and produce all manner of statistical analyses too. For more details, read the individual review.

THE CHOICES

SUPERCALC2 - Amsoft/Sorcim

SuperCalc2 is possibly the most widely used spreadsheet for PCW's. It has been adopted by Amsoft as their recommended product, and is a good straightforward spreadsheet. The general descriptions on the preceding pages of what 'most spreadsheets' will do invariably apply. The documentation that comes with it is large and comprehensive, and includes a '10 minute guide' to get you going, and a pull-out reference card. Surprisingly for an Amstrad product the manual is well indexed and comprehensible, but this is possibly because Amstrad didn't write it.

You can alter the column widths to suit your application - larger for text and smaller for numbers perhaps. If text is too long to fit in one cell, it just runs on over adjacent cells, so long titles don't need large column widths. You can also alter the format in which data is displayed to suit yourself; you can choose whether things are centred in columns, left or right justified, and how many decimal places to display.

Commands for SuperCalc to take some action are entered with a '/'. To save a file to disc, for instance, you type /S, and to load one /L. SuperCalc provides prompts on the screen to tell you what options are available at each stage, and what you are supposed to be typing.

The range of commands is quite wide. Two unusual ones are the ability to sort the spreadsheet data into order, and to execute command files. The command file function is particularly powerful. If there is a series of commands you find you are doing regularly, you can save the keystrokes in a file and run them automatically at the touch of a few keys.

Another useful feature is the IF command. Suppose you are compiling a list of debtors, and you want to charge

anybody who owes you more than \$100 a \$10 aggravation fee. The IF command lets you test a cell's contents and work out a value depending on what the result is. So if the sum owed is held in cell B6, you can add a ten bucks to their bill by `IF(B6<100,B6,B6+10)`

This just says, if the sum owed is less \$100 then put the sum owed into the current cell, otherwise add \$10 to it too.

When you run SuperCalc, you are faced with a preset spreadsheet ruled in columns 9 characters wide. To enter numbers or formulae into a cell, just type them in (numbers begin with digits and formulae with letters). To enter literal text, like column headings, type a " and then the text.

Printing from SuperCalc

One of the things SuperCalc seems determined to make difficult is printing. The Amstrad printer can print in draft or high quality mode, and in sizes ranging from 17 to 10 characters per inch. Since spreadsheets can be quite wide, you will often want to use 17 pitch text.

It seems that Amsoft have sold different versions of SuperCalc over the years. Some always use 10 pitch text, and some always use 17 pitch text. The way to change it is to explicitly send control codes to the printer to alter the size.

The surest way to get the print size you want is to 'Install' SuperCalc specially. On side B of the program disc is the installation program, which is menu-driven. You need to alter the printer initialisation string.

The codes you will need to use are on pages 131-132 of the Amstrad CP/M manual. For example, to get high quality text, you need to send the printer ESC m1, as the manual says. ESC is ASCII code IB, m is 6D, and 1 is the number 01. The ASCII codes are on pages 113 to 118 of the manual.

So, you need to send the 3 bytes IB, 6D and 01. Therefore the SuperCalc printer initialisation string should be 3, 1B, 6D, 01. Now whenever you output to the printer using this installed version of SuperCalc, the program will instruct the printer to use high quality every time. You can set up condensed print in the same way once you have worked out from the manual the codes to send.

Depending on what version of SuperCalc you have, you may find that you can get high quality by simply using the [PTR] key and selecting 'High quality' before you start. Some SuperCalcs come pre-installed to reset the printer and override this, in which case you will have to resort to the method described above.

You may also like to take a look at Page 42 of issue 25 (January 1987 of The Amstrad User) which explains another method.

CRACKER2 - NewStar Software

When talking about the Cracker it is perhaps easier to say what it doesn't do rather than what it does. It doesn't go and make coffee while you are trying to plough your way through the manual. Apart from that it is difficult to think of many areas where it is weak.

It does the things that spreadsheets are supposed to do with a few extras in very sophisticated mathematical functions such as statistical analysis. But it can also be used as a database, which will sort your data numerically or alphabetically and will even print names and addresses on labels for you.

When you go to the bank manager to get your loan, not

only can you show him your neatly printed cash flow projections but you can show your profits over the last five years beautifully printed out in one of six different graphs. Choose the best one to hide the fact that your profits have dropped steadily over that period and you are sure to impress.

The price that you pay for this variety of features and seemingly endless flexibility is that Cracker is not the easiest program to get to grips with. The manual is daunting and at 264 pages is indigestible.

You actually do get used to Cracker's commands very quickly and it has an invaluable 'Help' facility to steer you through the most difficult parts. But remember that unlike other spreadsheets, with Cracker you make up your own spreadsheet from scratch.

This means that you choose the number of columns, the width, the depth, whether columns should take text or numbers and many more other vital decisions so that you can get a spreadsheet exactly as you want it. So you need to have a fair idea of what you are trying to do before you can set it up, although you can add columns, add to the depth and change the designation of the cells later on.

On the other hand the beginner shouldn't be put off by the more exotic features. Once you have come to grips with the idea of setting up your spreadsheets you can build a library of your favourite matrices (yes - that is the plural of matrix) and to cover all your needs.

One handy feature is a number of sample spreadsheets and graphs. Even if you can't grasp the meaning of the manual it is often clear enough when you see the operation in action. Why not try the sample graphs in all the various styles?

For sophisticated analyses of your spreadsheet data, and neat graphical report, Cracker is a cracker.

SCRATCHPAD PLUS - Caxton Software

ScratchPad Plus is another good spreadsheet to be considered, which has some advantages and some disadvantages compared with SuperCalc (why do all manufacturers feel the compulsion to put capital letters in the middle of their products names?).

ScratchPad's main virtue is its 'virtual memory'. This is 'computerspeak' for saying that it can handle very large amounts of data. The spreadsheet size is limited not by how much memory is free on your PCW (as per SuperCalc), but how much space is free on your work disc.

The manual is good but has no index which makes it hard to find what you want. Like SuperCalc you can sort your data and alter the formats used to display numbers and text.

ScratchPad has a 'windowing' facility which is slightly superior to SuperCalc's. If you want to keep your column headings on row 1 in view while you scroll down to row 347, you can split the screen into two windows. The top window can show row 1, containing the titles, while the bottom window shows the cells around row 347 for you. SuperCalc can do this too, but in ScratchPad you can have any number of windows compared to SuperCalc's limit of two.

There is no on-screen prompting, so you will need to have the manual to hand most of the time, and there is no equivalent of SuperCalc's command files for long, repeated sequences of commands.

Another annoying niggle is that although you can change

PCWs - SPREADSHEETS

column widths, all columns must be the same width. In SuperCalc, any column can be any width.

A good range of calculating functions is available including trigonometry, averaging and IF commands. For really big spreadsheets, ScratchPad is the one.

Turn it around

Although the PCW printer can do 130 characters per line in compressed text, most spreadsheets allow you to put data in hundreds of columns, each one maybe 10 or more characters wide. It is easy, on application of any complexity, to build up more columns on the spreadsheet than you can print out on the printer. Your options therefore are to print the spreadsheet out in sections and paste them together by hand, or to use a rotation program. Rotation programs take a file on your disc, turn its contents through 90 degrees and print it out. This is useful if you are printing a spreadsheet with, say, 50 columns but only 25 rows. The rows can all fit down the short side of the paper, and the columns over the long side, or even over several sheets if you are using continuous stationery.

The only catch is that you need to convert your spreadsheet data into an ASCII file which the rotation program can then read. Most spreadsheets have special commands to do this: in SuperCalc it is an option in the /O (output) command, and in the /P command for ScratchPad Plus.

Two suitable rotation programs on the market are Rotate and Landscape, and with Rotate you can get a choice of four different typefaces to use for the printing.

Cost estimating

Although spreadsheets are good general purpose cost estimators, you might be interested in two specialist programs marketed by Cornix. These are specially designed Job Coster and Product Estimator packages, costing £49.95 each. They do the functions of a spreadsheet in these areas, in a more friendly way.

Double entendre

The word 'spreadsheet' is often used in two ways. It can mean the program itself, like SuperCalc2 or ScratchPad Plus, or it can mean the actual information which you have entered. It should be clear from the context which is which.

A child of its times

When you think of all the major software packages that people typically buy for computers, spreadsheets are the odd one out. Database, word processing and accounting programs have all been around since computers began, but the spreadsheets are a relative baby.

The first ever spreadsheet was Visicalc, written for the Apple II microcomputer in the late 70's. Such was the success of Visicalc, it became the main reason that people bought Apples. Since then, spreadsheets have really taken off. The industry standard spreadsheet, which inevitably runs on an IBM PC or PC-clone, is called Lotus 1-2-3. A number of other companies have written cut-price lookalikes of 1-2-3, at a fraction of the price, who Lotus are now in the process of suing (even though 1-2-3 was itself inspired by Visicalc!).



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FROM SPREADSHEETS TO LOCOSCRIPT

plus advice for panic merchants

The timely arrival of this first article (from Alex Gooding, Lawson, NSW) follows neatly on from the previous few pages. Alex writes "the following procedure for Cracker works quite well, and seems to be successful with SuperCalc although I am not as familiar with the latter".

File transfers from Spreadsheets to LocoScript

The ability to transfer files between spreadsheet programs and LocoScript is obviously useful if you want to include a table prepared by a spreadsheet in a word-processed document. You can also use LocoScript to improve the presentation of a table beyond the limited printer commands of most spreadsheet programs; eg. underlining headings, picking out selected items in bold type, etc.

Copying Files from Cracker to LocoScript

1. Having created a table using Cracker, type the instructions to Copy the spreadsheet to File, but use a TXT extension to the filename, rather than the usual MEM. Unless the table fills the entire spreadsheet, save the Block you want, rather than saving ALL.

2. Before you press RETURN at the end of the above instructions, swap to the LocoScript disc you are going to use for the final document. Then press RETURN. This will save the table as an ASCII document to group 0 on the LocoScript disc. Swap back to the Cracker disc, and Quit.

3. Boot LocoScript, and Create (or Edit) the document in which you wish to include the table. The document layout, or at least the layout for the section with the table, should have margins wide enough to take the table, but must not be proportionally spaced. If you think the table will be too wide, you can always choose 15 or 17 pitch, which will give you more characters across the page.

4. Using f7, insert the file from Group 0 containing your table, which should then appear. Don't be too disconcerted if the table appears jumbled, with columns not lined up. This usually means that the layout is not wide enough, and can be fixed by adjusting the margins and/or the pitch. If you still have problems you will have to "edit" the table by deleting spaces between columns.

5. You can now "dress up" the table in whatever way you wish. Remember that the spaces between columns are indeed spaces, and not tabs, and if you insert characters you will have to delete the same number of spaces to preserve the column line-up. For this reason it is best to have "Blanks" showing (f1). To prevent the situation being confused by Control Codes, check the table before printing with the codes hidden.

Copying Files from SuperCalc to LocoScript

The procedure is broadly similar to that outlined above. After creating the table, use the Global/Boarders command to strip the boarders, but remember to note down the range containing the table before you do so. Then, using the Output command, copy the table range as a Display to File on the SuperCalc disc. Do not

attempt to swap discs halfway through as you can with Cracker; peculiar things seem to happen, at least to me. Instead, boot LocoScript, insert the SuperCalc disc, copy the file onto the M drive and then onto the disc containing your LocoScript document. You can then insert and edit the table as described above.

In this second article Alec Rae explains what to do in the unlikely event that something goes wrong when using LocoScript. For a start - don't panic!

It might seem ridiculous to be writing an article about what could go wrong when using LocoScript. Everyone knows that LocoScript is so clear and simple it could easily be understood fully by a four year old child. So what could go wrong?

What happens if something does go wrong and there is no four year old child around to help you. You'd better read on - just in case.

Picture the scene. The wind is howling, a storm is raging outside and you decide you should really get on with your novel, now at page 1004 with only another 2000 to go. You look at the date - Friday the 13th. But this is the age of technology, you are someone who understands the intricacies of a computer. Why should you be worried by old-fashioned, outdated superstitions?

You load up LocoScript and put in your disc. Up comes the old familiar screen with all your documents listed neatly. Of course you have split up your chapters into neat five page

sections for easy access.

You have already nearly finished the current section - a full four and a half pages. As you take a leisurely scroll down to the end (roll on LocoScript 2 with its jump to page feature) you notice that you have left out the most important part of your story development. No problem.

Three pages of brilliant prose later your current section now runs to eight pages instead of five. Again no problem.

In an instant you have marked out the text to move using [COPY] and [DOC] and at last you press [CUT] followed by your favourite block number. At that moment a mad dog howls at the moon outside your window and by mistake you press [EXIT] and chose the Save and Print option. As your finger touches the [ENTER] button you realise you didn't save the block by the old [f8] option.

Out of Limbo

What do you do? No power on earth seems to know how to stop the machine once it has decided to commit this particular version to disc. Just mutter the words "Don't panic" as you press the words "Don't panic" as you press the f8=Options key. You enter a world of mystery with headings such as 'Limbo' and 'Hidden'.

Hidden is simple. There are certain files, such as the LocoScript system files that LocoScript presumes you don't know about. If you do want to know about them press + when the cursor is over the Hidden option and have a look.

What you are really looking for just

now is the Limbo option. The other time this is useful is when you erase a file by accident. First you will see the titles of everything that you have written on the disc come flooding back like ghosts from the past. Erased files show up as well as the last file that has been superseded by your newly edited file.

To recover this file you press the 'f5=Rename' key and you chose the 'Recover from Limbo' option. You will be asked to rename the document in Limbo. You type in SALVATION or some other suitably grateful name and then press E for edit as normal.

Then go to the end and cut out the

relevant section again and save it properly this time. Still, no harm done eh?

Only the names are changed

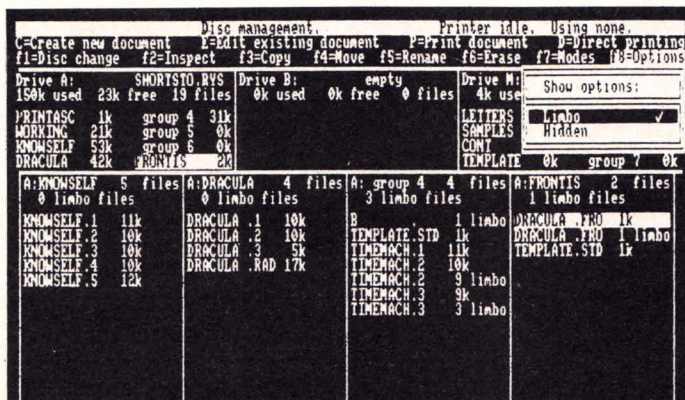
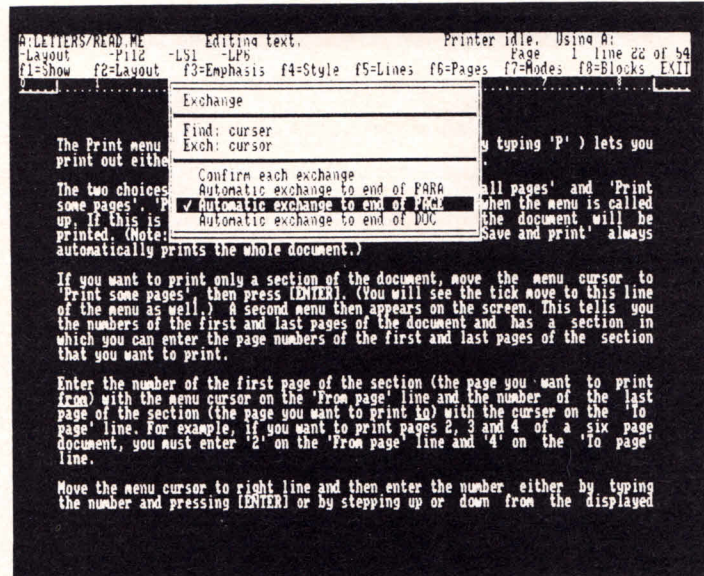
At that moment you suddenly realise that instead of calling the baddy George as you have been doing since the beginning of the book you have called him Fred after the character in real life that he is based on. Rather than face an expensive libel action you decide to change the names to protect your own innocence.

No problem. You call up the relevant document and press the special [EXCH] button - it is [SHIFT]+[FIND], if that helps you find it.

[EXCH] (for exchange, suitably enough) asks both for the word to find and the word to replace it with. You then have the more difficult task of deciding which option you require. If you know you have made the same mistake every time pick 'Automatic Exchange to end of Doc'.

If you know the mistake is on a certain page or paragraph you can use the relevant choices. If you are not sure use Confirm each exchange and you can chose whether to change the word or not using + for change and - for not changing.

[FIND] is a useful function in itself. Instead of plodding through pages



looking for your last reference to Qabalism you merely press [FIND] and when asked for the word type in Qabalism and [ENTER]. When the cursor stops it should be at the correct word.

My disc runneth over

Now you move to the next section of your book. The start of this is easy because you have it in a block saved from the last section (loaded using the 'f7=Modes' and 'Insert Text' option as described last month) and immediately the Muse smiles over your shoulder and soon the pages are disappearing out the top of the screen.

The lightening flickers outside. You are not quite finished but you quickly press [EXIT] and chose Save and Continue. This commits what you have written to disc and brings you back to write some more. If you don't do this and the electricity does go off everything not on disc will, of course, disappear.

You quickly finish the section and press [EXIT] and 'Finish Editing'. A job well done. Just then a little green box appears in the middle of the screen informing you that your disc is full and giving you the choice of throwing away your latest piece of brilliant prose or go into Disc Management.

You may wonder why this should happen. You may have already looked to see that you had enough space for your latest section before you started. What you are inclined to forget is that LocoScript does not delete any superseded files until the new file is fully saved.

On this occasion you 'Saved and Continue'd although it can happen for a number of reasons. Still there is no room for the new file to go on in full. No Panic. You take the Disc Management option and you are suddenly back at the screen you see when you first load LocoScript with the names of all your files on show. The idea now is to erase all the files you don't need to create the necessary amount of space. As everything on this disc is precious you start to get clever instead.

You pick your biggest file and move it over to the M drive using 'f4=Move'. This involves simply putting the cursor over the file you want to move (as requested) press [ENTER] and then move to the M drive section

([SHIFT]and -> until you're there) and then press [ENTER] again.

Once you have moved enough files to make room to save the file you were working on, press [EXIT] and your troubles are over. Well nearly. You have to make sure that you move back the file you have in memory or it will be lost when you switch the machine off.

If there is just not enough room to get all the files on that disc you still have the option of holding them in memory, changing to a new disc, pressing 'f1=Disc Change' and moving the files back on to the new disc with the 'f3=Copy' or 'f4=Move' choices. Of course you have a spare disc already formatted. If not the files will all be lost anyway when you load Diskit to format a new disc.

You sit back content that you have steered your way through this difficult night with no major mishaps when suddenly the thunder crashes right above your house and the room is plunged into darkness. In the inky blackness the thought begins to form in your mind "When the power suddenly goes off while a disc is in the drive there is always the danger that everything on the disc could be lost." But of course you regularly take backup copies of your work as a matter of course. You do, don't you?

Start again

You decide to commit your latest five pages to paper. After what has gone wrong so far you place your continuous paper tractor feeder with extra care. Why is it that people with honours degrees in computer science can still make a mess of it when they try to feed continuous paper into their Amstrad? Could it be that the continuous paper manufacturers put more holes on one side of the paper than the other?

You can run the paper back and forward a few times just to make sure the mechanism is running properly and then press P, choose Print All Pages and away you go. It is time for a coffee and you swan off to put the kettle on.

When you get back you find that the cat has sat on the continuous paper and the last three pages have been written on one line, which by now is getting rather difficult to read.

You press the [PTR] key and the Printer Control Screen appears. The other more beneficial result is that the printer will, rather grudgingly stop printing to let you decide what to do.

One option is to press 'f7=Reset' to give up entirely and go away in a huff. A more practical solution is to press 'f5=Document/Reprint'. This will tell you where LocoScript has got to in the printing (not entirely obvious from reading the black mess on the page) and allows you to reprint some or all of the pages that have been spoilt.

The choices are reasonably obvious. You are asked if you want to continue from This Page, from the Previous Page or From Beginning. It then tells you to put your paper in the printer (implying "get it right this time") and away you go.

Limbo dancers

While Limbo is extremely useful it is important to make sure that the disc is not too full. As the space on the disc fills up the files in Limbo gradually disappear. What actually happens is that when you erase a file from a LocoScript disc all it actually does is stop listing the title of that file.

The file is only actually erased when the disc is nearly full and a new file comes along looking for an odd corner. LocoScript will then cram it into any odd corners left after scrapping any files already 'erased'.

Qabalism - A good Scrabble word this. It's a Jewish form of mysticism or magic, and doesn't have a 'u' after the 'q'.



TWO TYPE-INS

One to produce pull-down menus in your Basic programs, the other to basically predict whether you are going to be down!

PULL DOWN MENUS by R.S. Chadd

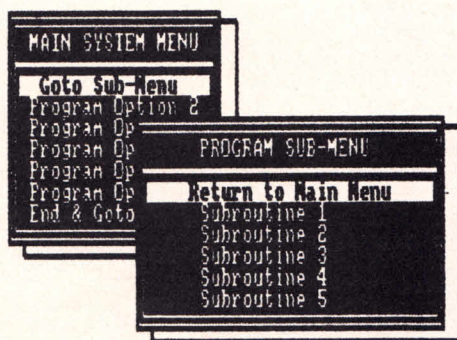
Now is your chance to make all your BASIC programs look really professional. This listing gives you the power of pull-down menus, just like your old LocoScript used to do. After this you won't need to write a good program - it will look so good people will be impressed anyway.

The listing given is a particularly cunning demonstration of the program's abilities though of course you can adapt it to suit your needs. The interesting line is 90 where the length is defined in the variable ln (that is l as in lower case L, by the way) the number of options you require in op and the positioning of the top left corner of the menu in x1 and y1. Line 170 adapts the sub-menu.

You will usually want to change line 110 and 190 unless you are really satisfied with programs that merely print out "Running Program Option" of "Running Option Subroutine".

The text to be shown in the the menu is entered in the variable ch\$ () (see lines 60-90 and 130-160) and the number of menu choices required can be set by the variable ch in line 470. Now sit back and be amazed.

Locoscript Menu's Demo



Note: the above picture was produced directly from the program listing in the next column and to move from one menu to another, just hit return at "Goto Sub-Menu" or "Return to Main Menu". However, if you try to move up and down either menu using the cursor keys, the display corrupts although the program will still function. Would some kind person enlighten us? If we had spent any more time tracing the problem we would never have got this issue out on time!

```

10 esc$=CHR$(27)
20 rev$=esc$+"p" :nrm$=esc$+"q" :cls$=esc$+"E"+esc
  $+"H":hom$=esc$+"H"
30 on$=esc$+"e":off$=esc$+"f"
40 DEF FNat$(x,y,a$)=esc$+"Y"+CHR$(31+y)+CHR$(31+x
  )+a$
50 PRINT cls$;rev$;" Locoscript Menu's Demo "
60 ch$(0)=" MAIN SYSTEM MENU ":ch$(1)=" Goto Sub-
  Menu ":ch$(2)=" Program Option 2 "
70 ch$(3)=" Program Option 3 ":ch$(4)=" Program Op
  tion 4 "
80 ch$(5)=" Program Option 5 ":ch$(6)=" Program Op
  tion 6":ch$(7)=" End & Goto Basic "
90 ln=18:op=7:x1=3:y1=5 :GOSUB 250:REM Set up Menu
100 GOSUB 390 :REM Get Option Input
110 ON ch GOTO 130,210,210,210,210,210,230 :REM Go
  to Menu Option
120 '
130 ch$(0)="          PROGRAM SUB-MENU          ":ch$(1)="
  Return to Main Menu          "
140 ch$(2)="          Subroutine 1              ":ch$(3)="
  Subroutine 2                  "
150 ch$(4)="          Subroutine 3              ":ch$(5)="
  Subroutine 4                  "
160 ch$(6)="          Subroutine 5              "
170 ln=27:op=6:x1=15:y1=10 :GOSUB 250
180 GOSUB 390
190 ON ch GOTO 60,220,220,220,220,220
200 '
210 FOR i=1 TO 8:PRINT:NEXT i:PRINT"Running Progra
  m Option ":END
220 FOR i=1 TO 8:PRINT:NEXT i:PRINT"Running Option
  Subroutine ":END
230 END
240 '
250 REM 'DRAW MENU
260 REM x1:y1 top left coordinate of menu
270 REM in width of menu text
280 REM op no. of menu options
290 PRINT FNat$(x1-1,y1-1,rev$+CHR$(134)+STRING$(1
  n,CHR$(138)));
300 PRINT CHR$(140)+nrm$+CHR$(154)+CHR$(156)
310 PRINT FNat$(x1-1,y1,rev$+CHR$(133)+STRING$(1n,
  CHR$(32))+CHR$(133)+nrm$+" "+CHR$(149))
320 PRINT FNat$(x1-1,y1+1,rev$+CHR$(130)+STRING$(1
  n,CHR$(154))+CHR$(136)+nrm$+" "+CHR$(149))
330 FOR y=y1+2 TO y1+op+1
340 PRINT FNat$(x1-1,y,rev$+CHR$(133)+STRING$(1n,C
  HR$(32))+CHR$(133)+nrm$+" "+CHR$(149))
350 NEXT y
360 PRINT FNat$(x1-1,y1+op+2,rev$+CHR$(131)+STRING
  $(1n,CHR$(138))+CHR$(137)+nrm$+" "+CHR$(149))
370 PRINT FNat$(x1,y1+op+3,CHR$(147)+STRING$(1n+1,

```

```

CHR$(154))+CHR$(153))
380 RETURN
390 '
400 REM ch      no. of option required
410 PRINT off$
420 PRINT FNat$(x1,y1,rev$+ch$(0)+nrm$)
430 FOR n=1 TO op:PRINT FNat$(x1,y1+n+1,rev$+ch$(n)
)+nrm$):NEXT n
440 ch=1
450 PRINT FNat$(x1,y1+1+ch,ch$(ch))
460 in$=INKEY$:IF in$="" THEN GOTO 460
470 IF in$=CHR$(13) THEN PRINT on$;:RETURN
480 IF ASC(in$)<>31 AND ASC(in$)<>30 THEN GOTO 460
490 IF ASC(in$)=31 AND ch>1 THEN GOSUB 520:ch=ch-1
:GOTO 450
500 IF ASC(in$)=30 AND ch <op THEN GOSUB 520:ch=ch
+1:GOTO 450
510 GOTO 460
520 PRINT FNat$(x1,y1+ch,rev$+ch$(ch)+nrm$):RETURN

```

BIORHYTHMS by Robert Ainsley

Do you feel intellectually up to listing these 37 action packed lines of Basic? If the program won't run will you burst into tears? Would you be better getting out and tramping the hills? Wee you won't know the answer to these questions until you have completed this Biorhythm program.

You can consult it first thing every morning and if things look too bad you can go back to bed again. It's much more scientific than reading your horoscope every morning, isn't it?

The theory is that we all go through cycles of ups and downs. Physically the cycle takes 23 days (you should be fit after cycling for that time), emotionally it takes 28 days and intellectually, 33 days. Everyone starts at zero at birth so if this doesn't work for you it is probably because you started life on an intellectual high or something.

The program works out a score of plus or minus for each heading for any given day. Use it wisely and you can discover in advance the day when you are -100 for all three headings. On that day it might be dangerous to even touch your PCW.

```

10 PRINT CHR$(27)+"E"+CHR$(27)+"H"
20 DIM mon%(12): FOR j%=1 TO 12: READ mon%(j%): NE
XT
30 PRINT "This program will show the state of your
bio-rhythms on any day"
40 PRINT:INPUT "What year were you born (19?";y%
50 INPUT "...and the month";m%
60 INPUT "...and the day";d%
70 PRINT:INPUT "What year do you require"; yn%
80 INPUT "...and month"; mn%
90 INPUT "...and day"; dn%
100 days%=0: FOR j%=m% TO 12
110 days%=days%+mon%(j%)
120 NEXT
130 days%=days%-d%
140 IF m%<3 AND y%=4*(y%\4) THEN days%=days%+1
150 FOR j%=1 TO mn%-1
160 days%=days%+mon%(j%)
170 NEXT

```

```

180 days%=days%+dn%: IF yn%=y% THEN days%=days%-36
5
190 IF mn%>2 AND yn%=4*(yn%\4) AND NOT(yn%=y% AND
m%>2) THEN days%=days%+1
200 FOR j%=y%+1 TO yn%-1
210 days%=days%+365
220 IF j%=4*(j%\4) THEN days%=days%+1
230 NEXT
240 p%=days%-23*(days%\23)
250 s%=days%-28*(days%\28)
260 i%=days%-33*(days%\33)
270 pi2=6.283185
280 zp%=100*SIN(pi2*p%/23)
290 zs%=100*SIN(pi2*s%/28)
300 zi%=100*SIN(pi2*i%/33)
310 PRINT:PRINT "Your scores for this day on a sca
le of"
320 PRINT "+100 (top) to -100 (bottom) are:"
330 PRINT "Physical"zp%"; Emotional"zs%"; Intellec
tual" zi%
340 PRINT:PRINT "Type y for another date; any othe
r letter to stop"
350 k$="":WHILE k$="" :k$=INKEY$:WEND
360 IF UPPER$(k$)="Y" THEN 70
370 DATA 31,28,31,30,31,30,31,31,30,31,30,31

```

This program will show the state of your bio-rhythms on any day

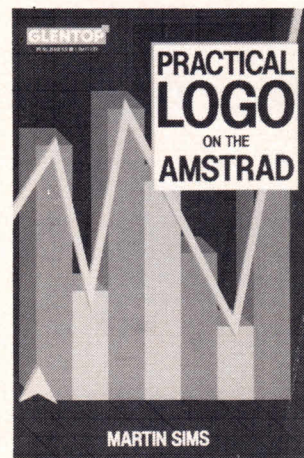
What year were you born (19?? 48
...and the month? 07
...and the day? 16

What year do you require? 87
...and month? 06
...and day? 01

Your scores for this day on a scale of
+100 (top) to -100 (bottom) are:
Physical 82 ; Emotional 62 ; Intellectual 99

Type y for another date; any other letter to stop

▲ The program should look something like this when RUN



PRACTICAL
LOGO
on the
AMSTRAD
by
Martin Sims

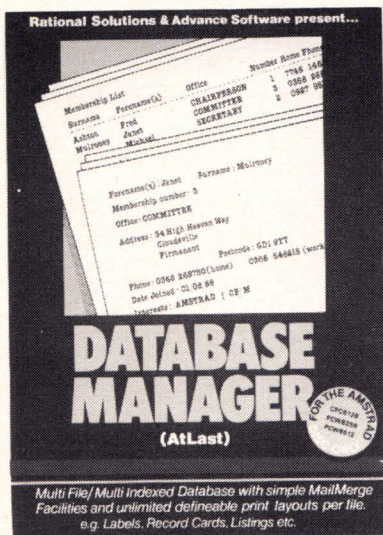
This book is about practical applications of Logo running under CP/M Plus, ie. for PCWs and 6128s. It shows how Logo can be used to write programs on serious topics such as decision making, simple investment analysis, sales forecasting and stock control.

NOW AVAILABLE THROUGH THE AMSTRAD USER (See Page 64)

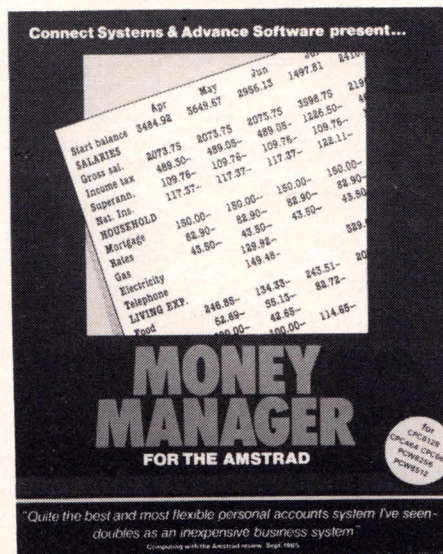
COMPETITION

for PCW owners

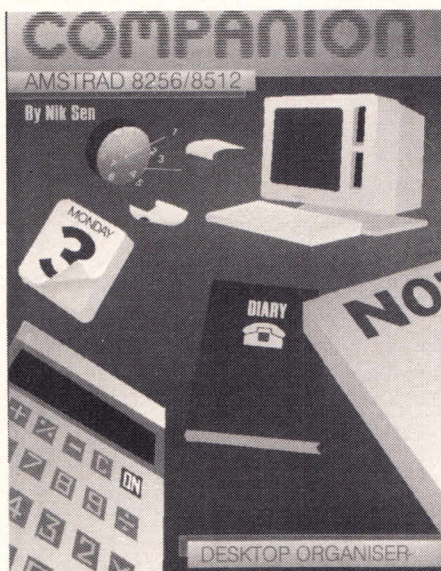
1st Prize



2nd Prize



3rd Prize



All three prizes have been provided by ISD, 34 Wadhurst Drive, Boronia, Vic 3155. Telephone: (03) 222 2288

HOW TO ENTER

Write the answers to the following questions on the back of an envelope along with your name and address - so we know where to send your prize should you win!

1. What do the initials ISD represent?
2. Apart from the three products on this page, name one other imported by ISD for the PCW range of computers.
3. What is the total recommended retail value of the three prizes on this page based on an advertisement elsewhere in this month's magazine?

Post your entry (one only will be accepted) to reach the The Amstrad User no later than 5.00 pm. on Tuesday 30th June 1987. The first correct entry drawn will win a copy of DataBase Manager. The second correct entry drawn will receive a copy of Money Manager, and the third correct entry drawn will receive a copy of Companion.

The draw will take place on 1st July and the three winners will be notified by post and published in the August issue of The Amstrad User.

All entries should be sent to:

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

GOSSIP FROM THE UK

* The view from retailers, Software publishers and Amstrad itself here in the UK is that the launch of the Spectrum Plus 3 - almost certain to take place around August - is not expected to affect either the Amstrad 464 or 6128 for the moment. In fact, although the new Spectrum has been well and truly 'Amstradified', now that Amstrad owns the Sinclair brand name, it is unlikely that any of the three machines will be discontinued for a long while yet because of the hefty overseas sales which justify both hardware and software production. In Germany and Holland the 464 is on a par with the Commodore C64 base.

* DK'tronics has added to its vast collection of Amstrad add-ons: a real-time clock is up for grabs. Maintaining the time of day in seconds, minutes and hours (as most clocks do) it gives you the option of a 12- or 24-hour display and a calendar function with day of the week, date, month and year. Incorporated into this chronological bundle is an alarm that can be set to sound-off from once a second to once a day.

The clock is battery-backed, meaning that switching off your computer's power will not affect the clock. The clock keeps ticking thanks to a rechargeable nickel-cadmium battery; recharging takes place during computer usage. Fifty bytes of unused static-ram is left inside the clock: this can be used for storing other important data.

* Following the success of "Art Studio", the Rainbird team are just about to release "Advanced Art Studio". All the features found in the original exist in the advanced version and added to that: designs can be in Mode 0, cursor coordinates on screen

at all times if necessary, 25 different sizes of greyscale, windows can be dumped to printer, animation sequences, colour priorities or stencils, multi-coloured pattern fills, 16 different pens, 8 spray cans, 15 user definable multi-coloured brushes, nine text sizes in two directions with bold and italic options, 91 definable characters in font editor, user-defined windows can be copied, moved, squashed, stretched, flipped, rotated, additions to shape section, circles filled in real-time. (What - no partridge in a pear tree? - Ed). Old versions can be upgraded for a small fee, although I don't know how this will work in Australia. Oh yes, I nearly forgot - the frustrating Lenslok system is being scrapped.

* If you are a fan of JRR Tolkien's books or an addict for adventure games than Melbourne House's follow-up to Lord of the Rings, Shadows of Mordor,, will be right up your street. The adventure incorporates refinements to previous Melbourne House games such as Thé Hobbit and, of course, Lord of the Rings.

Features promised include complex problems, a close story-line to Tolkien's second volume, The Two Towers, extensive location descriptions, 800-word vocabulary with 128-character English input. It should be available over here around June.

* A PCW8256 using WordStar and coupled to a photo-setter is to be used by the National Bible Society of Scotland for a spelling revision of the Bible in Gaelic. Since the original translation was completed in 1801, this will be the first revision of its kind to be undertaken.

* A nifty gadget for LocoScript users

is quickly gaining popularity in this country. It's called Menu Mate and is essentially a template that fits over the keyboard. Printed on the template are lists of special key combinations, examples of type-styles and sizes, and copy, cut and paste combinations. You also get a free LocoScript guide thrown in. Its a useful tool if you don't want to keep referring to the manuals.

* Amstrad has won about 80% of an order from the Open University which plans to purchase 4,500 computers over the next two years. The first order to Amstrad is for 2,500 twin drive PC1512's with a DMP3000 for each.

* The Electric Studio has just released "Imprint" - an 'image printout utility' for the PC1512. It allows you to get 16 shades of grey on your printouts from pictures created with GEM Paint. And while on the subject of the PC1512, Domark have just announced the release of Trivial Pursuit. The game is played with the mouse (no keyboard gameplay) and, of course, TP is still the Master of Ceremonies.

* NewStar, the UK company which has been distributing the NewWord word processing package is due to release NewStar4. This new version is 'all their own work'. The reason behind this is due to the fact that NewStar Inc (in the US) was bought out by WordStar who thought that their product was under threat from the cheaper NewStar Inc products. Confusing isn't it?

THE THINGI - the simple things are often the best.

Judging by industry interest shown at a UK computer show recently, this new innovation is set to repeat it's popularity in Australia.

Designed and patented by a former Merseyside policeman, the Thingi has been exclusively acquired by Amsnet International Pty Ltd for Australia wide distribution.

The oddly named device is a simple method of holding documents attached to a monitor so that they can be read with a minimum strain to eyes and neck.

This specifically designed 16 inch strip attaches to the monitor by Velcro which means it is easily fixed and removed and can be used in different applications. The clip holds single and multiple sheets of paper and even magazines. A keyboard operator can read the material being processed at eye level which can significantly increase speed and reduce errors.

In fact, it could well be considered that Thingi is the answer to every keyboard operator's dream.

Thingi is available from the exclusive Australian distributor, Amsnet International Pty Ltd, PO Box 1319, Southport at \$25 each (including postage and packing) or by phone on (075) 325 464.

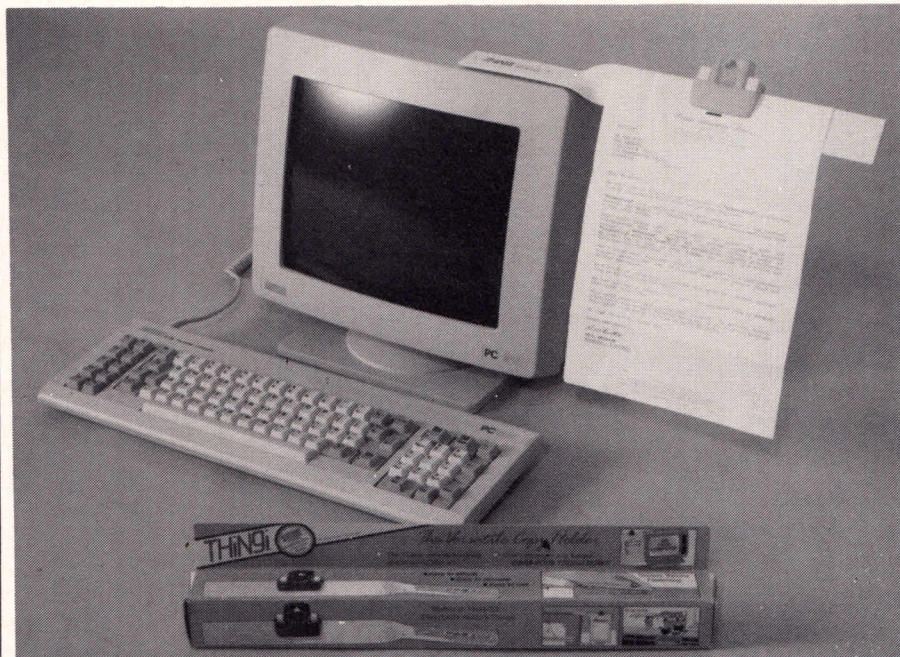
WORK STATION FOR YOUR AMSTRAD

An Australian made home computer work station has been released by Top Disks for Oasis Furniture. Up to now, Oasis have concentrated their production efforts on professional work stations and printer acoustic hoods for the commercial market.

The new unit is of a rigid and robust construction with fully adjustable



and/or removable shelves which have the advantage of suiting any model in the Amstrad range. The shelves are also locked into position using a



unique cam system providing rigidity.

If you need to move it, the solid swivel castors will facilitate this, so no one can complain about the dust down the back!

The whole unit has a well finished furniture appearance and can house your computer, disc drive, modem, floppy discs, printer paper and manuals efficiently and economically with a minimum of floor space.

Sounds like a good birthday present for an untidy 'hacker' at \$199 plus freight and packing.

All enquiries to Top Disks, 57 Blackbutt Circle, Mt. Riverview, NSW 2774 on (047) 396540.

SOFTWARE RELEASE SCHEDULES

The latest schedules (dated April) to hit the offices of The Amstrad User contain the following information:

Silver Budget titles Thrust II, Gunstar and Pneumatic Ham should be available in May. (OK, this is the June mag, but you know how far ahead we have to produce it!).

Gremlin reckon they will release Auf Wiedersehen Monty and Samurai Trilogy at the end of April, Thing Bounces Back and Convoy Raider in May, and The Final Matrix and Bounder II in June.

From the Rainbird list we have these: Knight Orc for both the CPCs and PCWs should be released in June. Guld of thieves, for the 6128 and PCW should already be available.

FROM THE PRESS RELEASES

The Final Matrix - Gremlin

Nimrod is a member of a friendly race called Bioptions, a mechanical people who are very friendly and fond of socialising and space outings.

It was during one such outing that the hostile Cratons abducted a party of Bioptions and scattered them across the galaxy on their matrix network of space prisons. The bereft Bioptions have delegated the rescue of their countrymen to Nimrod.

The Final Matrix provides a stimulating space challenge for the gamer who likes variety. It incorporates lots of exploration and pits you against a security system getting steadily stronger the more you play.

MASK - Gremlin

MASK 1 is the first computer software game ever to be based upon the adventures of Matt Trakker and co. The location, characters and every other minute detail is accurately portrayed and has been taken directly from the cartoon animation. It is devilishly addictive and features a life-like multi-directional inertial scroll. Fans of MASK either in print or on the screen will marvel at this new MASK dimension, and newcomers to the MASK phenomena will be instantly enthralled. Due July.

COMMUNICATIONS and your COMPUTER

by Michael Toussaint

Modems, networks, baud rates, Viatel. What does it all mean. Here is a brief outline of the revolution that is taking place in the computer world regarding "information technology" or communication by electronic means.

Communication is a part of life, that's a fact. Way back in the dim dark ages, communication was restricted to those in the immediate vicinity. As man progressed through into the technical age, the world grew much smaller. Our communicating abilities can now reach into the furthest part of the globe.

We are now in the age of computers. These machines are a great invention and vastly improve our skills in all aspects from recreational use, through to highly sophisticated business professional and technical usage.

But the use of the computer is severely restricted if information cannot be transferred easily from one point to be used at another. Sure, information stored on tape or disc can be transported physically from machine to machine, but this is totally inefficient.

This requirement lead to the development of electronic communication between computers. Computers hold information as a series of electrical pulses. It is possible to transmit these pulses via the telephone system from one computer to another. All that is needed is the

telephone system and a computer at each end, complete with modem.

Lets take a look at the basic rules necessary to obtain reliable and efficient transfer of information, along with the various technical terms which invariably come with them.

What is needed

The basic requirements are:

1. A computer. That is, one at each end of the line. They can be virtually any kind, providing there is some way of connecting it to a modem.

2. The connection. The most common type is an RS 232 interface. This simply is the name of a standard interface for connecting "data communications equipment" (modem) to a "data terminal" (computer).

The RS 232 is a serial interface, which means that each bit of every byte of information sent or received is transmitted one behind the other.

For interest, the other interface commonly found on computers is the parallel interface. As its name suggests, information sent or received by this connection is transported along a number of wires at the same time.

It is the serial interface that is used in conjunction with a modem to transfer data from computer to computer.

Most business micros have an RS 232 interface built in, such as the Amstrad PC 1512. On others, the interface is available as an extra, as on the Amstrad CPC and PCW range.

3. A modem. This is the peripheral which converts the data from the RS 232 into a form that can be reliably transmitted over the telephone system.

To do this, it takes the high and low voltage levels that represents the

binary 1's and 0's, and converts them into a series of tones. In other words, it takes the computers digital signal from the RS 232 and converts it to an analogue signal. This signal is more suitable for long range transmission.

This process is called MOdulation, and the reverse process at the other end is called DEModulation. Hence the name MODEM.

This technique can effectively send a stream of data along a telephone line and provides a reasonable signal for interpretation at the receiving end.

These three pieces of equipment then are essential at either end of the phone line before any communication can take place. It doesn't have to be the same brand of modem, but must be of the same type, for example, the standard known as V21 must be available at each end for it to work. More of standards later.

It is important to keep in mind that modems and other equipment used in conjunction with the telephone system must carry a Telecom approved number. The majority of modems are, but keep a lookout for equipment using "Telecom approved components". A small but important issue.

What to look for in a modem

Basically there are two types of modem on the market: acoustically coupled and direct connect.

The acoustic coupler is used mainly where the telephone is wired directly to a junction box, as in the case of wall phones. The modem is fitted with a pair of rubber cups which fit over the telephone handset. With this type, the modem actually picks up sound waves from the phone mouthpiece and "listens" to the noise coming in from the earpiece. One problem with this

type of modem is that loud noises from outside can affect the transmission, but is not generally a problem.

The direct connect modem is, as the name implies, connected directly to the telephone network by means of a Telecom plug and socket. In most cases you unplug the phone and fit a double adapter which will accept the phone and the modem.

"Auto dial" means that the modem is capable of accepting a phone number from the computer and will dial it for you, rather than you actually dialling the handset.

"Auto answer" allows the computer to answer any incoming calls automatically. This of course is very useful when accessing bulletin boards, as you don't have to be on the spot when the call comes in.

BAUD RATES

Before any communication takes place, there must be agreement on the rate at which data will be transferred. When a message is sent to another computer, that machine has to receive the data at the expected speed.

Baud rate is the measure of the speed of a line and is the maximum number of changes per second that can occur in that line. This is the term bits per second or baud. One bit per second is one baud and this must not be confused with the term characters per second.

The most common speed is 300/300 bits per second (bps). The slash separates the receive speed from the transmit speed. This speed is the most widely used for bulletin board transmission.

The other most common speed is 1200/75, and is used with Viatel. This speed is used where the amount of data travelling from the other end is much greater than that coming from the other way. The faster side of the connection ie. 1200, is used for the busy direction and has the effect of reducing the transmission time.

There are higher speeds coming into use at the moment. They are 1200/1200 and 2400/2400. Because of their higher speeds, these modems are relatively more expensive. However, it seems possible in the near future that these costs will reduce, as demand and production steps up.

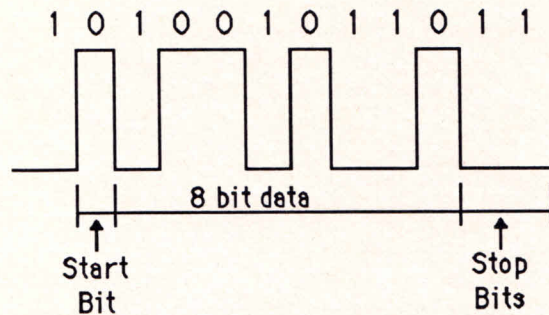


Figure 1 - Each byte of data is a complete message in itself. The single zero represents the start of data (start bit). The data follows (7 or 8 bits), with one or two bits following. If parity is used, (not shown), this bit follows the data bits and before the stop bit(s).

These rates have been standardised by an international body known as CCITT, (Consultative Committee on International Telegraphy and Telephony), and are known as follows:

- 300/300 bps is V21
- 1200/1200 and 2400/2400 is V22
- 1200/75 is V23

In North America the Bell Standard exists and so V21 is equivalent to 103/113/108 and V23 to 202.

Another couple of terms to get familiar with:

Half duplex - Data travels in both directions, but only one way at a time, ie. A may send to B and B may send to A, but both cannot send at the same time.

Full duplex - Data can be transmitted in both directions simultaneously. Full duplex is the most common method of communication.

Protocols

The next step in understanding communication with computers is that of the format of the characters.

Each character is transmitted in a series of binary digits (bits) and takes the form of a high or low pulse of electricity. Typically the high is from +3v to +12v (one), while the low is -3v to -12v (zero).

However, it's not as simple as that. In order to indicate to the receiver that a character is on its way, a start bit has to

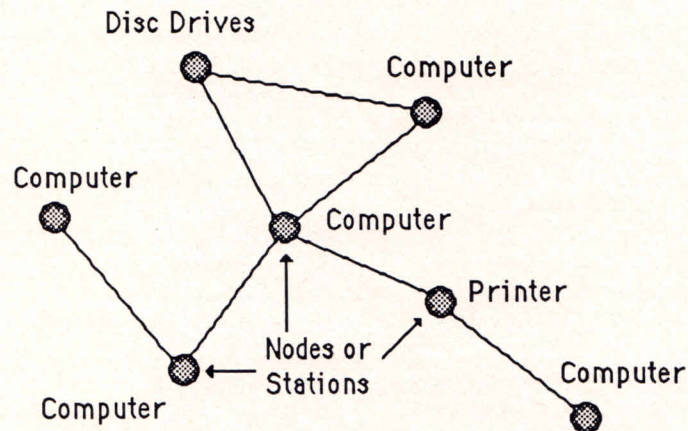


Figure 2 - This represents a computer network. Note that the data lines could be as close as a couple of metres or as great as from Brisbane to Perth or overseas.

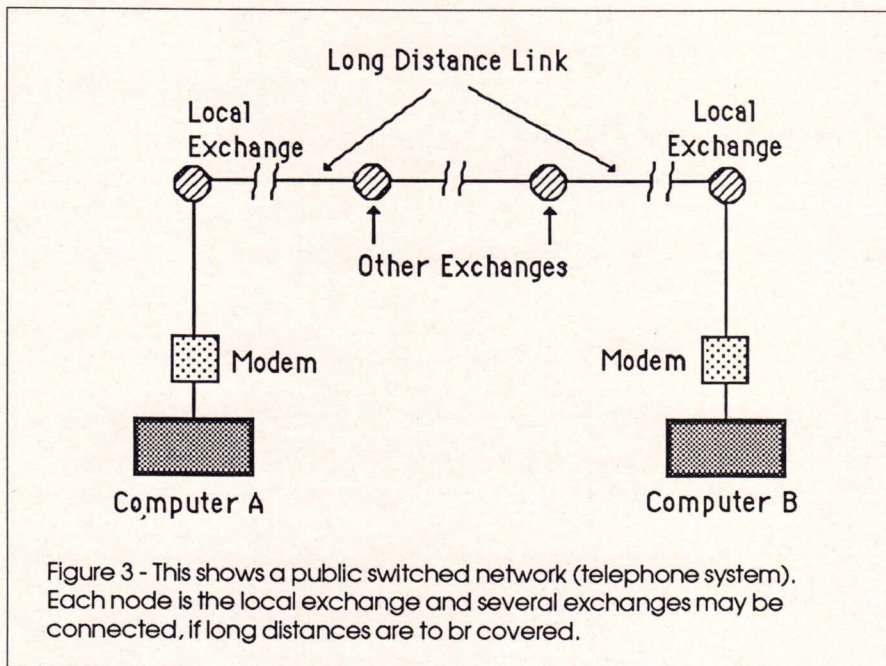


Figure 3 - This shows a public switched network (telephone system). Each node is the local exchange and several exchanges may be connected, if long distances are to be covered.

be sent first.

In the same way a stop bit has to be added to the end of each character to confirm to the receiver that the whole character has been received.

A complication with this is that because there are only two signal levels, the 'idle' line must be either high or low.

If it is low for instance, then the start bit must be high, so the receiver could 'see' the change at the beginning of a character.

Similarly, the stop bit must also be the opposite to the last character bit, so the receiver can recognise when the whole character has been received.

Every character consisting of the full range of upper and lower case letters, numerals and punctuation can be represented by seven bits, each having a code number. The code is called ASCII (American Standard Code for Information Interchange). As characters are transmitted as eight bits, this eighth bit can be used as a simple error checking device, called a parity bit. (See Fig. 1.)

By adding up all the remaining bits in a byte, the result will be an odd or even number. This last bit is set by the transmitting device to either 1 or 0 to make the total of eight bits an even number. This is called even parity. Odd parity of course means that the eight bits are made into an odd

number.

Another term used extensively is called "handshaking".

When a computer is transmitting information to a slower operating computer, the receiver sends a message to indicate when enough information has been transferred for the moment, so it can be processed. For example, if the receiver is saving information on a disc file, or printing out on a printer. When it is ready for more information, it sends a message back to indicate it is able to receive more.

These two messages are often Xon and Xoff characters (control-S and control-Q respectively). This is Xon/Xoff handshaking.

Networks

Most people can understand the basic idea of a network. But what does it mean in the computer world? Well, a network in computer language, is an arrangement of intersecting data lines and connected to these lines are computer devices, whether they be computers, printers or disc/tape drives.

The purpose of this is to allow several computers to communicate with each other and to allow common disc/tape storage and printers etc. The points where the data lines intersect are called stations or nodes. It is at these

nodes that the various devices are connected. These nodes could be quite close, eg. at every desk in an office, or much further apart, eg. Brisbane, Sydney, Perth etc. (See Fig. 2 and 3.)

The network allows a node (computer device) to talk to many different computers, not necessarily at the same time. The most common example of a network is of course the telephone system. One computer can connect to many different computers by simply dialing up the required node.

Telecom is responsible for landline communications within Australia. They offer a number of data transfer and communications facilities.

Viatel is the service most commonly known. It is not strictly a network as such, but allows registered users with the correct modem (1200/75 V.23) and terminal (computer) to access the Viatel computer.

The user has a large range of information to access such as weather, stock exchange information, banking, etc. Viatel can be dialled on the phone from anywhere in Australia and the charge is that of a local call, and dependent also on the time of day.

Viatel is essentially a huge electronic magazine, with a number of organisations called service providers or SP's, having pages in the magazine. You are charged sometimes to look at the SP pages, but it's usually no more than a few cents. Another use of the facility is that you can send an "electronic" letter to any registered user, anywhere in Australia. Rates are distance related.

Every Viatel user has a special number called the Viatel number, which is similar to a users address. If a message has to be sent, the number of the receiver has to be known. Viatel provides an alphabetical list of registered users so that numbers could be looked up. While Viatel is quite simple to operate, it does have large amounts of information, and is increasing all the time. With Australia wide coverage this makes it quite powerful.

Another common network is called LAN, and stands for Local Area Network. LAN's are used to connect computers separated by only a short distance, for example, in the same building. They usually operate at very

high speed, up to 10 million bits per second, and data is transferred by coaxial cable or optical fibres. Because of this, more complex operations are possible.

Software

It is not quite a simple matter of just hooking one computer to another to get communications. The simplest programs just emulate a dumb terminal. That is, when you press a key, the appropriate character is sent along the communications port and arrives through the phone straight to the screen of the receiver. "Dumb" means that the terminal takes no action other than moving characters between keyboard, screen and serial port.

The "smart" terminal has some advanced features which make communications easier to use, at a price of course.

We already discussed auto-dial and auto-answer, and this means that the modem has sufficient intelligence to act on the special commands sent by the computer. The most common type of these commands is called the Hayes AT command set, and most upmarket

modems are termed Hayes compatible.

Uploading and downloading are words often heard in communications jargon. When you wish to copy a file or document from your computer to another at the other end of the phone line, this process is called uploading. Receiving information from another machine is called of course downloading. Very simple.

Conclusion

We've covered quite a lot of ground in a short time, and yet only touched a few of the major points.

Communications is a very complex subject and pages could be spent on its complexities.

Hopefully, this article has helped throw some light on the subject.

If you are in the market for a modem system, look carefully at all alternatives, particularly what is coming up in the future. It will not give you much joy to have purchased a modem, only to find a bit later on that you cannot use it, for instance when faster baud rates are common. Many newer modems have expansion busses

and connections available that will accommodate any additions.

There are also many books and articles on the subject. It would pay to read up and inquire with existing owners before you part with your hard earned cash.

Trends

Future trends indicate that there will be a lot more networking between all kinds of computers. In the future you may be accessing a disc drive that is across the other side of the globe, and has the same performance as your built in model.

The trends are to all digital transmission, optical fibre technology and satellite transmission. In the future this could lead to access of a greater number of things. Just imagine being able to access all recorded information in existence, simply by turning them into 1's and 0's. This is a frightening concept and its accessibility must be carefully considered.

We need to be masters of this technology, not its victims.

Michael Toussaint

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MEMORIES . . .

by Ian Barnes

What is memory? Where do I find it and what do I do with it? Why should I PEEK and POKE around my computer and if I need to use a machine code routine, who should I CALL? These and other questions are to be answered in this month's article on getting the most from BASIC.

The article will be looking at two different topics, accessing memory from BASIC, and the way in which BASIC stores its integer variables. Each will help to demonstrate the other. Firstly I will explain the way PEEK and POKE operate, and then after a short examination of the memory map of the AMSTRAD we will look at the effects that can be achieved using these commands. Before I begin I'll just say a few words about RAM and ROM. ROM is Read Only Memory, and the values stored in this are set at the time of manufacture and cannot be altered. RAM (or Random Access Memory) in comparison forgets what values it contained whenever the power is turned off, but the present values can be changed as many times as you like. POKE, PEEK and CALL all operate on RAM.

BASIC really has only a few commands that are useful when dealing directly with memory, PEEK and POKE are the first two of these. Most other BASIC commands will effect the contents of one or more memory locations, but the computer keeps track of locations and proper values automatically, and the user does not have to worry about the contents of specific memory locations. The POKE command enables the programmer to alter the value of any location in RAM. There are no restrictions placed on this command except that the location must be in the range of 0..65535 and the data to be placed must be in the range 0..255 so that it can be stored in a single byte. Note that if the data value is too large it will be MOD with 256 to get it within range. PEEK will take a look into RAM and tell you the value currently stored at that value.

When the AMSTRAD is reset, there is a slight pause after the starting message is printed before the cursor appears. During this time certain areas of RAM are set aside by the computer, and various values the computer needs to remember are placed in these areas. For this reason, if you were to indiscriminately POKE values everywhere, you could easily confuse the computer, causing it to do a number of interesting things which usually end up with the computer resetting itself which causes your program to disappear as though it had never existed. Therefore always save any programs which are going to POKE values into memory BEFORE you run them. The following is a brief overview of the RAM memory layout, feel free to PEEK

everywhere, but you POKE areas that are already used at your own risk. (Note that you should not be able to harm the computer by POKEing about, but you may hang it up or reset it.)

The AMSTRAD has 64k of RAM, giving 65536 bytes of memory. (Numbered 0..65535). Of these the top 16k (locations 49152..65535) are used to store the screen. The short program below will poke values into screen memory, and you will see that as the location is increased, the top line of each character is filled, then the second line of each and so on. This layout has something to do with the way the video signal chip works, and explains why those loader pictures at the start of games seem to appear one line at a time. Since the computer alters the contents of some of the screen memory every time a character is printed, there is no guarantee that when you PEEK a screen memory location that you previously POKEd, the same value will be there.

```
10 MODE 2
20 FOR location%=49152 TO 65535
30 POKE location%,170
40 NEXT
```

Under the screen memory is an area called the JUMPBLOCK which goes from 45312 to 49151. This jumpblock is the same in every AMSTRAD CPC and is copied from ROM during start-up. The jumpblock is designed so that no matter where a Firmware routine is actually placed in the Firmware ROM, it can always be used by calling at a location in RAM. This means that a machine code program which calls the Firmware routines through this area of RAM will work on any of the AMSTRAD CPC's; unless someone has been POKEing into this area. Since BASIC always CALLs these locations, POKEs into this section of memory tend to be fatal for your program.

Under the jumpblock there is an area set aside for redefinable characters, expansion strings for the keyboard, disc controller workspace and various other things. These are located from HIMEM to 45311, and should not really be POKEd to. Under this is the memory pool which extends from 368 to HIMEM-1. This area of memory is free for use by BASIC, and so long as the programmer is carefully not to POKE over his program, this area of memory is OK to POKE into. Below 368 is an area like the jumpblock in which the computer always expects various values to reside. If some values are altered, the computer will probably crash right away.

The best way of reserving memory is by using the MEMORY command which alters the value of HIMEM. Since a BASIC program will not extend beyond HIMEM, setting (for example) MEMORY 36863 will free all of memory from 36864 up to the original value of HIMEM so that you may POKE and PEEK it to your hearts content without having to worry about wrecking anything. This example command would reduce the area of memory available to BASIC to 35k bytes, which is enough space for most programs.

Unfortunately the AMSTRAD's POKE function is just too slow to make printing characters on the screen by POKEing them any faster than normal. Neither is POKEing values and then PEEKing them any faster than using an array in BASIC. The most common use of POKEing is to load a

program from disc or tape and POKEing certain values into various locations before running it to give extra lives or abilities. (See Cheat Mode for some practical examples of this.) The other use is to enter a machine code program or short routine which will be executed from BASIC. To run a machine code routine that has been put into memory, simply CALL it.

The CALL command enters a machine code routine at a specified address. The address can be followed by a set of parameters, each an integer value, which will be passed to the routine. On entry to the routine register A will contain the number of parameters passed, and the IX register will point to the low byte of the last parameter, with the parameters stored in reverse order. This is useful when you want a machine code routine to perform various actions dependent on a value found in a BASIC variable.

The BASIC variable format that can most easily be understood is integer variables. These are stored as two bytes, and can most easily be understood when treated as hexadecimal numbers. Integers can hold values from -32768 to 32767 which in hexadecimal can be represented by the digits &0000..&FFFF. Since each byte of memory can hold a two digit hexadecimal number, the complete four digits must be stored in two bytes. i.e. &65A4 is stored as &65 and &A4. Due to a computing convention, the low byte is stored first, then the high byte. Hence if &65A4 was to be stored at 36900 by BASIC, the actual memory contents would be;

Address	Data
36900	&A4
36901	&65

The following is a program fragment which creates a small machine code program by POKEing, which can be run by CALLING the first byte that was POKEd. The @ symbol will be explained later on. This short routine is set up by GOSUB 2000, and is executed whenever you GOSUB 1000. The routine is a COPYASC(a%) command which returns the ASCII value of the character under the cursor (in a%). The short example program just prints a character and the its ASCII value which was found using the machine code routine.

```

10 GOSUB 2000
20 MODE 1
30 x=5:y=5
40 FOR loop=32 TO 255:LOCATE x,y:PRINT CHR$(loop);:GOSUB
1000:LOCATE 1,1:PRINT a;:NEXT
50 END
1000 '
1010 'This subroutine puts the ASCII of the character at
x,y into A
1020 '
1030 a=0
1040 LOCATE x,y
1050 CALL h:RETURN
2000 '
2010 'Gosub to this section first or the program will cra
sh.
2020

```

```

2030 DEFINT a-z
2040 h=UNT(HIMEM-7)
2050 a=0
2060 MEMORY h-1
2070 POKE h,&CD:POKE h+1,&60
2080 POKE h+2,&BB:POKE h+3,&32
2090 POKE h+4,&a MOD 256:POKE h+5,&a\256
2100 POKE h+6,&C9
2110 RETURN

```

The @ symbol is used to indicate the location of a variable rather than the actual data stored in this variable. Hence PRINT @a% will print the location of the low byte of the integer providing of course that the integer a% has been used somewhere in the program before. As an example, the program below will set a% to zero, and then alter the value by POKEing into the low byte of the variable.

```

10 MODE 1
20 a%=0
30 FOR loop%=0 TO &2000
40 POKE @a%,(loop% MOD 256)
50 PRINT "&"+HEX$(a%),a%;REM print in hex and decimal
60 WHILE INKEY$="":WEND
70 NEXT

```

If you run this program you will notice that a% gets to 255, then goes to zero. This is because we are POKEing a single byte; alter line 40 to POKE @a%+1,(loop% MOD 256) and a% will increment by steps of 256. Notice how when the Hexidecimal value is larger than &8000, the decimal value is negative. This is due to the fact that BASIC stores integers in 2's complement notation which enables it to hold positive and negative values in two bytes. To convert from 2's comp. to true value, simply add 65536 to any negative value. (For most cases, this Just Doesn't Matter.) To POKE a new value into the complete variable we need to know that (loop% MOD 256) will give the low byte of loop%., with (loop%\256) giving the high byte. The complete program to demonstrate POKEs, PEEKs and integer storage is given below.

```

10 MODE 2
20 a%=0
30 PRINT"    loop%          low          high
a%"
40 WINDOW#0,1,70,2,24
50 ZONE 8
60 FOR loop=0 TO 65535 STEP 20
70 POKE @a%,(loop MOD 256)
80 POKE @a%+1,(loop\256)
90 low%=PEEK(@a%)
100 high%=PEEK(@a%+1)
110 PRINT loop,"&"+HEX$(loop),low%,"&"+HEX$(low%),high%,"
&"+HEX$(high%),a%,"&"+HEX$(a%)
120 WHILE INKEY$="":WEND
130 NEXT

```

Boxes, Borders & Large Characters

by Peter Doutch

A couple of months ago, Ian Barnes presented two short routines that would produce shadowed and highlighted text, for use in menus or title pages.

I have developed three routines that will add a bit more life to those menus. The three routines are; a box, a border and large characters. They were originally one liners, but have been expanded to make them easier to read.

BOX

This routine simply needs the length, width, x and y co-ordinates and the colour of the box.

The pen colour is set, the starting location is also set (Line 1100), then the top line of the box is then drawn, including the top right and left corners. The cursor is set to the bottom row and then the bottom line is draw, again including the corners.

The last step in the construction of the box is to draw the two sides this is done by going through a loop (Lines 1130 to 1170).

```

1000 MODE 1
1010 PRINT CHR$(22)+CHR$(1);
1020 c=1:x=10:y=10:l=8:w=5:GOSUB 1100
1030 c=2:x=20:y=3 :l=7:w=9:GOSUB 1100
1040 c=3:x=4: y=4 :l=20:w=15:GOSUB 1100
1050 c=1:x=1:y=1:l=40:w=25:GOSUB 1100
1060 PRINT CHR$(22)+CHR$(0);
1070 IF f=1 THEN FOR d=1 TO 900:NEXT:MODE 1:f=0:GOTO 1010
ELSE FOR d=1 TO 900:NEXT:MODE 2:f=1:GOTO 1010
1080 '
1090 '
1100 l1=1-2:w1=w-2:PEN c:LOCATE x,y
1110 PRINT CHR$(150);STRING$(11,154);CHR$(156);
1120 LOCATE x,y+w1+1:PRINT CHR$(147);STRING$(11,154);CHR$(153);
1130 FOR k=1 TO w1
1140 LOCATE x,y+k:PRINT CHR$(149);
1150 LOCATE x+11+1,y+k:PRINT CHR$(149);
1160 NEXT:RETURN
1170 GOTO 1170
    
```

BORDER

The routine which I use all the time is the border routine, I never write a data base without having a border around every screen. This routine is designed to work in any of the three modes by simply passing the amount of columns into the variable 'xl' and changing into the required mode before passing to the routine. Although the box and border routines are different, the box routine can be used to draw a border, however is much slower in doing so.

```

1000 c=1:x1=40:MODE 1:GOSUB 1060
1010 FOR d=1 TO 2000:NEXT:x1=80:MODE 2:GOSUB 1060
1020 FOR d=1 TO 2000:NEXT:x1=20:MODE 0:GOSUB 1060
1030 FOR d=1 TO 2000:NEXT:GOTO 1000
1040 GOTO 1040
1050 '
1060 SYMBOL AFTER 32:GOSUB 1160
1070 x2=x1-2:PEN c:LOCATE 1,1
1080 PRINT CHR$(149);STRING$(x2,150);CHR$(151);
1090 FOR y=2 TO 24
1100 LOCATE 1,y: PRINT CHR$(152);
1110 LOCATE x1,y:PRINT CHR$(153);
1120 NEXT y
1130 PRINT CHR$(154);STRING$(x2,156);CHR$(155);
1140 SYMBOL AFTER 32:RETURN
1150 '
1160 SYMBOL 149,15,63,112,224,192,192,192,192
1170 SYMBOL 150,255,255
1180 SYMBOL 151,240,252,14,7,3,3,3,3
1190 SYMBOL 152,192,192,192,192,192,192,192,192
1200 SYMBOL 153,3,3,3,3,3,3,3
1210 SYMBOL 154,192,192,192,192,224,112,63,15
1220 SYMBOL 155,3,3,3,3,7,14,252,240
1230 SYMBOL 156,0,0,0,0,0,0,255,255
1240 RETURN
    
```

LARGE CHARACTERS (Listing 3)

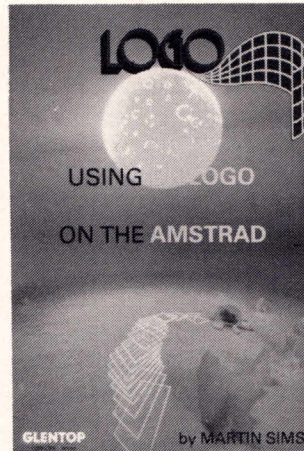
How many times have you seen a double height characters routine? Well personally I have seen three others than this one and all are entirely different. This routine is probably a little difficult to explain, and if you could understand an explanation, you probably wouldn't need one. But take my word for it, it does work. Again you must pass the colour and the x and y co-ordinates and the message to be printed. The message must be held in the variable 'titles'. The routine starts from line 1140.

```

1000 INK 0,26:BORDER 26:INK 2,0:INK 1,0:INK 3,0
1010 title$="SPELLBOUND PRODUCTIONS PRESENTS."
1020 x=5:y=1:c=1:MODE 1:GOSUB 1140
1030 title$=CHR$(167)+"A"
1040 x=18:y=10:c=2:GOSUB 1140
1050 title$="Double Size Characters Demo."
1060 x=6:y=20:c=2:GOSUB 1140
1070 title$=CHR$(164)+" 1987, SPELLBOUND PRODUCTIONS"
1080 c=3:x=5:y=24:GOSUB 1140:INK 3,6
1090 FOR ink1=0 TO 26:INK 2,ink1:FOR d=1 TO 150:NEXT:NEXT
    
```

CPCs - PROGRAMMING TIPS

```
1100 FOR ink1=26 TO 0 STEP -1:FOR d=1 TO 150:NEXT:NEXT
1110 PEN 1:GOTO 1090
1120 '
1130 '
1140 address=&9FFC:up$=CHR$(11):back$=CHR$(8):down$=CHR$(
10)
1150 SYMBOL AFTER 32:titlelength=LEN(title$)
1160 PEN c:LOCATE x,y
1170 FOR l=1 TO titlelength
1180 FOR g=0 TO 7
1190 bit(g)=PEEK(address+(ASC(MID$(title$,l,1))-32)*8+g
)
1200 NEXT g
1210 SYMBOL 254,bit(0),bit(0),bit(1),bit(1),bit(2),bit(2
),bit(3),bit(3)
1220 SYMBOL 255,bit(4),bit(4),bit(5),bit(5),bit(6),bit(6
),bit(7),bit(7)
1230 PRINT CHR$(254);down$;back$;CHR$(255);up$;
1240 NEXT:RETURN
```



USING DR LOGO on the AMSTRAD by Martin Sims

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ADVENTURER'S ATTIC

A review of *After Shock* by Philip Riley

This month I have a long overdue review of the new adventure from Interceptor called *AFTER SHOCK*.

The scenario - you have just survived an earthquake, the city around you is devastated and, as the game write-up puts it, danger lurks on every street corner.

Your task - to make your way to a nuclear reactor that has been badly damaged. Why don't you run in the other direction? Why go to the reactor that is about to meltdown? Well, for one, all the repair crews have decided upon the first of the above two options and, secondly, you helped to design the thing so obviously you will know how to repair it. And, of course, you are a true adventurer who thrives on these kinds of thrills and can hardly wait to get in to where the action is.

The product itself is presented well in a pretty standard packaging. I was given the tape version for review, but the disc packaging is the same. The game loads in one continuous block, at first presenting a Mode 1 (4 colour) loading screen. When the screen has been drawn, the number "99" is displayed in the top left corner of the screen. It looks at first like an error, but as the number then changes to "98" you realise the program has a count-down for you as it is loading. (Tells you how long you have left to make the coffee).

As soon as the program has successfully loaded, the screen clears and you are presented with a picture of your office. What, didn't I tell you that *Aftershock* was a graphic/text adventure? Well it is, although it's mainly text with the occasional picture thrown in for good measure. The pictures themselves are drawn quickly in Mode 1 and in some cases they have a little animation achieved by colour rotation.

Anyway, back to your office, and very clean it looks considering that it has just been shaken about by an earthquake. Hit the spacebar, the screen clears and the text scrolls up into view. This is the basic format for the rest of the game.

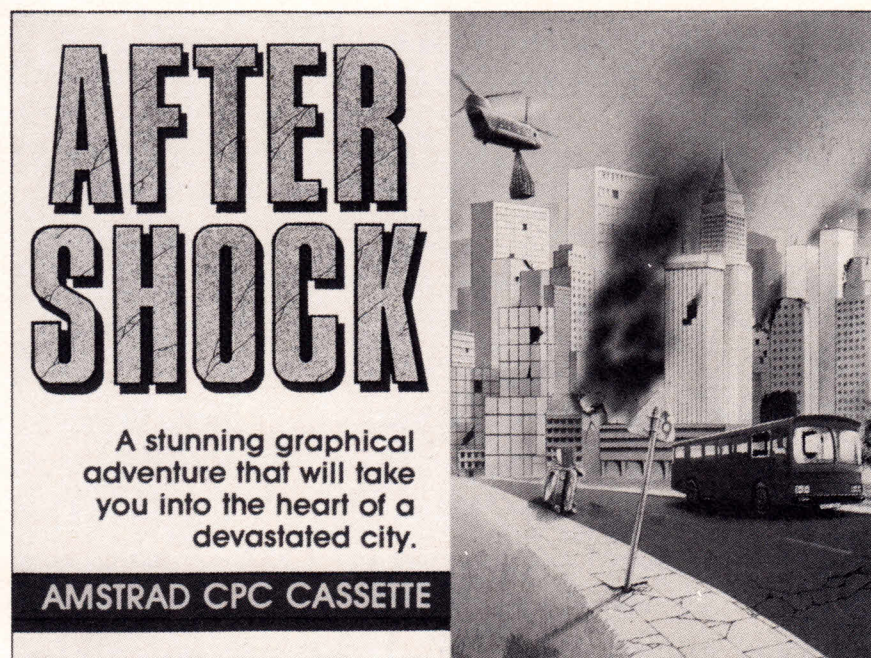
As with all games there are good and bad points. In *Aftershock*, I found the parser good although it is not as complex as some others currently on the market. In many respects this makes the program a little easier to use - you don't need an instruction book to find out how to talk to the program. There are, however, some frustrations in that the program will recognise or understand certain words, but then fails to do so with other words of similar meaning. True, one cannot include all the possible variations, but when it comes to understanding simple words like GET as well as TAKE, you would have thought the developers should have included

them. The responses to your successful answers are short - just "OK". Obviously this is saving memory, but I think that if the pretty pictures had been left out, the available memory could have been used for more meaningful responses. Apart from this the gameplay is good and enjoyable.

After solving the first problem of how to escape from your burning office block, you have a considerable number of locations to explore featuring such things as a zoo whose frightened inhabitants, including an alligator, seem to want feeding, a truck leaking oil (hmmm . . . what to do with the oil?), a flooded underground station, and a jewellery shop. There are a lot of things to keep you thinking and plenty of opportunities to lose and get yourself killed - but don't worry - there is a 'save-game' option. There is also a score provided that you can check as you progress through the game.

For any adventurer out there who is looking for a new game to play, this one is well worth looking at and should keep you amused for quite some time.

AFTER SHOCK is available through *The Amstrad User* for the CPCs on tape at \$39.95 or disc at \$57.50 and for the PCWs on disc at \$57.50.



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- UKM7* - a communications program adapted from MODEM7 for the Amstrad.
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The above programs and document files have been supplied by Fred Robertson-Mudie from the Canberra Amstrad User's Group.

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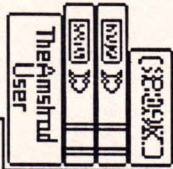
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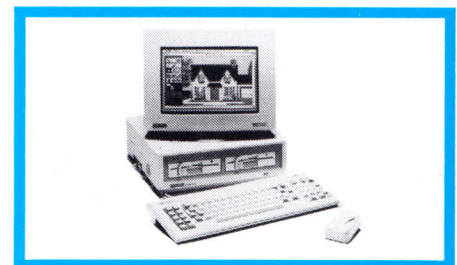
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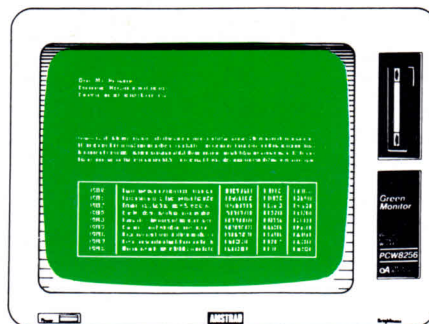
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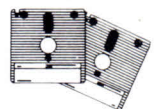
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