THE AMSTRAD USER

POLICE PUBLIC CALL BOX

DOCTOR WHO AND THE MINES OF TERROR

AMSTRAD DISK

MICROPOWER
IN ASSOCIATION WITH THE BRITISH BROADCASTING CORPORATION

Nexus Dome
Code Masters

SILVER 199 RANGE   AMSTRAD 464 664 6128
BOOTY
FIREBIRD

TERRA COGNITA
By Stephen Curtis
Code Masters

SILVER 199 RANGE   AMSTRAD 464 664 6128
BOMBSCARE
FIREBIRD

- **Reviews on Software and the AMX Mouse for CPCs + five pages of "cheats" + Lighthouse Adventure Part 2**
- **Introduction to GSX Graphics + LocoScript Layouts + Printing tricks with CP/M + five pages of tips**
- **Type-ins for CPCs + Mail Order Software (Page 61)**

FOR THE NOVICE & EXPERIENCED USER

THE AMSTRAD USER

Issue No. 25
February 1987

For Tape subscribers, the programs can be found at the following approximate positions:
Side 1: **AMCUP464 - 14, KEYEXPND - 57, SNOW - 72, STAINGLS - 82, HYPNOTIC - 93
PYRAMID - 105, ADVBASE - 115**

THE AMSTRAD USER

G'day,

Once again I find it difficult to get "into the swing of things" after I have had a holiday. This year was no exception - made more difficult by the enormous amount of post that had accumulated during the break. It must be a record as it has taken ages to sort through it all. We'll get to your's, so please be patient!

If you are reading this magazine for the first time, welcome. If you have been with us since Issue 1, thanks. There have been a few changes during the first two years, and we enter our third year with the good news (especially to those readers living outside city areas) that, as it's our Birthday, we are now offering Software for the CPC's and PCW's on mail order. At the moment the list is short, but as things progress we intend to add to it. It is likely that we will keep to the Games, Educational and Utilities area and leave the Business area to others (although we are making Mini Office II available for the CPCs).

Also available is Year Disc 4, with a heap of Public Domain software provided free. Our thanks to Fred Robertson-Mudie of the Canberra User Group for keeping us updated. Details of all of the software can be found starting at Page 61.

A final point, with nearly 700 tape subscribers, there are bound to be a few tapes that either don't get copied (our fault!) or that have read errors (machine fault!). We do check every tenth tape off the line, but clearly we cannot check them all. Quite often errors result from dirty heads, so clean them first and try again. We have an article planned for tape reader owners which may help. But if you do have a read error a or b occurring that won't go away, just send it back with a note plus your name and address and it will be replaced.

See you next month,

Ed

Letters
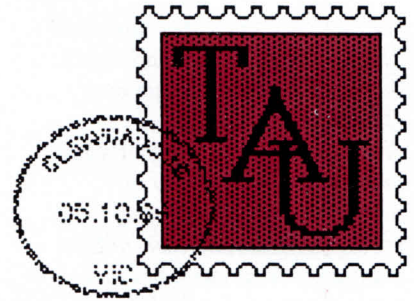
Happy Birthday TAU,
Congratulations, you're TWO.
We are liking what you give us,
Happy Birthday TAU.

The Cox Family, Bendigo, Vic

Many thanks, we're glad you're happy.
Yes - we're two and out of nappy.
Celebrate and have some fun
Just turn the page to sixty one!

About 12 months ago I bought a PCW 8256 and have been extremely satisfied with its performance in the primary role of a word processor. While I agree that it can be slow with large files, the ease with which it provides sub/superscripts, underlining, italics, greek characters etc. more than compensates. Its performance, can however, be further improved.

To enhance my system, I recently increased the RAM disc size from 112 to 368k with one of the cheap kits (£26) advertised in Britain. It was composed simply of 8 identical chips + very simple instructions on how to insert them. You can tell whether a PCW can take them by removing the back and seeing if there are 8 empty slots in a row at the bottom of the main printed circuit board. The larger RAM disc is invaluable for 1) editing large LocoScript files, 2) speeding up software packages which involve exchange of different programs or 'help' files and will not fit on the 112k disc

(eg. Supercalc), 3) keeping the operating system commands in easy reach and 4) reducing wear on disc and mechanical disc drives.

Glare induced headaches can be avoided with a fine mesh screen filter from Tandy (around A$30) and a piece of sticky tape. This will transform the background from shimmering grey to matt black with little loss of screen brightness. The Prospell program in an excellent complement to LocoScript and simple to use. I've been told that ribbons may be recharged once or twice by spraying them with WD-40 and leaving for an hour for the ink to redistribute. I've yet to try it but then there's not much to lose.

Finally two queries. Why are local prices so high compared to Britain. DbaseII and Prospell retail here at $395 and $95 whereas the English discount prices are £89 and £27. With an exchange rate of about 2.2 it doesn't make sense unless its like importing books. Secondly, where do I find out how to use GSX?

David Roser, Richmond, NSW

Software, like most other imported goods, is subject to various parameters outside the control of importers. For a start, the UK software houses are not known to give preferential discounts to Australian importers (may be something to do with the amount of piracy that goes on over here). Add to this the cost of freighting the products by air (the most expensive), then Mr.

Keating's slice in import duty and a hefty 20% sales tax. Add, again, the promotional costs (not many UK companies advertise in Australian magazines, so it's left to the importer to spread the news) and also consider the postage/distribution costs within Australia. We understand that products will be available from AMSNET (through the NIX system) at a cost of about 2.7 of the UK price, which can only mean good news for the serious software buyer.

Where can you find out about GSX? Turn to page 26!

I bought the January issue of the magazine yesterday and was somewhat bemused by the CP/M Revisited, Part Three bit.

It only took a few minutes and a blank formatted disc to prove the nature of the disc directory with the program below. Your readers might like to try this to assure themselves that they need not fear the void . . .

One need only key in the program, slip a disc in, and run it to see what happens.

```
10 REM Program to test
   directory
11 'J.L. Elkhorne 3/1/87
20 MODE 1:CLS:PRINT
   "Creating files :":
   PRINT
30 ON ERROR GOTO 200
99 :
100 FOR j=1 to 65
110 PRINT j
120 OPENOUT STR$(j)+"-
    FILE"
130 WRITE #9, "This is
    file ";j
140 CLOSEOUT
150 NEXT j
160 :
200 For k=1 to 900:NEXT k
210 CAT
299 :
300 END
```
          J. L. Elkhorne, E. Malvern, Vic

After reading your January '87 edition I was very pleased with part two of "Wired for Sound". I also typed in the Intelligent Menu program written by Chris Collins, but it does not work on a 464.

I believe the problem lies in the delete routine - line 320.

There are two errors, the first being that there are two WHILE and WEND statements, and when erasing a disc file on the 464 you are required to have an "@" before the string name. Line 320 should read:

```
320 IF INKEY(61)=0 THEN
    LOCATE 50,23:PRINT
    "Confirm Delete Y/N";
    CHR$(7):WHILE INKEY$=
    "";WEND:IF INKEY(43)=0
    THEN |ERA,@a$:RUN
```

Another point, which does not effect the operation of the program but makes it look more attractive, concerns the little pointer arrow which currently can move down to the 19th line of the window and erase one letter of the text line. My solution to avoid this is to search the screen and find the position at which the last line of characters appear. The modifications below are for the 464 only.

Change:
```
130 PRINT CHR$(22)
    CHR$(1):GOSUB 420
210 IF down<4 THEN down=
    ymax ELSE IF down>ymax
    THEN down=4
220 IF across<1 THEN
    across=61 ELSE IF
    across>61 THEN
    across=1
```

Add:
```
420 char=0:xpos1=1:
    ypos1=4
430 FOR offset=0 to 19:
    LOCATE xpos1,ypos1
    +offset:CALL address,
    @char
440 IF char<64 THEN ymax=
    (ypos1+offset)-1:
    RETURN
```

```
450 NEXT:RETURN
```

Finally, the way Mr. Collins' routine to move the arrow around the screen deserves a compliment.
          Peter Doutch, Rowville, Vic

I am writing to you following the article which appeared in the Aussie Made section of the December issue of The Amstrad User concerning the magazine on 3" disc known as The Gambler. As the article on Page 13 and the advertisement on Page 54 said, the disc is intended for the PCW range only. A number of people who have other machines have written to me asking if the disc will run on their machines.

Normally a PCW formatted disc will not run on a 6128. However, I believe it is possible for 6128 users to copy the files from my disc to a 6128 format using the PIP utility. I don't have access to a 6128, so I cannot experiment with this. It should be possible to download the disc as HEX, but that would be an expensive phone call.

Interest in The Gambler Magazine has been considerable, as expected. I am looking for people with more knowledge and more hardware who can copy the magazine for use on other systems. I am proposing a licence agreement under which a master copy and a mailing list would be sold for a price that would leave a healthy margin of profit.

If any one out there would like to take it on, they should contact me at the address below.

The Gambler Magazine is also available as a monthly newsletter and will be appearing on Viatel, when we get the comms problems sorted out.
Barry Tucker, The Gambler Magazine, 3 Greenknowe Avenue, Potts Point, NSW
Phone: (02) 358 3221

Firstly, I would like to suggest a change to the Word Sleuth program, by Keith Saw, on page 49 of the November TAU. Delete lines 360 through 610 inclusive and insert the following equal code:

```
360 FOR A% = 1 TO 26
370 A$(A%) = CHR$(ASC("A")
    + A%-1)
380 NEXT A%
```

This code performs the same function and would result in only a negligible increase in execution time.

Secondly, I have a Digital Research Pascal/MT+ compiler (version 5.6.1). When I compile very large programs (of up to 1000 lines), I often get confronted with the error message:

The line with the "error"
↑ Illegal Symbol

where the illegal symbol is character #87 (hex), one of the graphics symbols.

The file I use is a "simple text file" from the Locoscript "Make ASCII file" function in the MODES menu (f7). Whenever I type or print this file, no such character exists anywhere in it. The error is usually a "subtle" error. Can any of your readers help with any solutions to this problem?

Adrian Booth, Orelia, WA

I have the disc version of Amsoft's "Macrocosmica" for the CPC6128. I was wondering if any ingenious person could invent a cheat mode or suggest "tips, pokes and game busting ploys" to increase the amount of time you have to play the game.

It's a bit disappointing hyper-driving to different galaxies making a fortune for 2 or so hours to, all of a sudden, be told "Your 1000 days are up".

Also, cheat mode for Firebird's ELITE (December '86) is great to say the least, although I have one problem. I haven't been able to master a way of escaping the sun that is "going nova". Any suggestions? Keep up the good work, it's a great user magazine to read.

S. Myers, Dernancourt, SA

NATIONWIDE USER GROUPS

Joining us in our Birthday celebrations this month are SIX new groups. From Queensland we extend a welcome to the **Caboolture Amstrad Users Group**, the **Toowoomba Amstrad Users Group** and the **Hervey Bay - Maryborough Amstrad Computer User Group**. From Victoria we welcome the **Mountain District Amstrad User Group** and the **Wendouree Amstrad User Group**, and from NSW the **Lismore Amstrad User Group** (with thanks to Jim Owen for the information). It is certainly encouraging to see groups emerging from outside city areas.

WESTERN AUSTRALIA

ALBANY AMSTRAD USER GROUP
President: Gerry Barr   (098 41 6884)
Secretary: Steven Hands   (098 41 5183)
Treasurer: Gavern Grose
Venue: Priess Street Centre, 14 Priess Street, Albany on the first and third Mondays of each month at 7.00 pm.

AMSWEST (Perth)
President: Tony Clitheroe   (09 275 1257)
Vice Pres: Steve Cushnahan   (09 445 2062)
Secretary: Mrs. P.T. Ardron   (09 361 8975)
Treasurer: John Firth
Venue: Shenton Park on the first and third Tuesdays of each month starting at 7.30p.m.

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

ROCKINGHAM-KWINANA AMSTRAD USER GROUP
President: Bob Harwood
Vice-Pres: Keith Gaisford
Treasurer: Rob Macilroy
Secretary: Keith Saw   (095 27 6519)
Venue: Cooloongup Primary School, Westerly Way, Cooloongup (Rockingham), every second Wednesday at 7.30 pm.
Mail: 29 Milgrove Avenue, Cooloongup, WA 6168

SOUTHSIDE AMSTRAD USER CLUB
President: John Marshall   (09 390 7335)
Secretary: Pauline Waghorn   (09 459 8702)
Treasurer: Eric Tytherleigh   (09 390 8865)
Librarian: Tom Bird   (09 457 5614)
Junior Rep: Gary Mottabhoy   (09 457 8086)
Venue: Gosnells Scout Hall on the corner of Verna and Corfield Streets, Gosnells every 2nd and 4th Wednesday of each month from 7.00 pm.
Mail: The Secretary, Southside Amstrad Users Club, PO Box 324, Gosnells, WA 6110.

SOUTHSIDE AMSTRAD USERS CLUB - North West Branch (Tom Price)
President: Peter Hoffman   (091 89 1608)
Secretary: Colin Smith
Treasurer: Mark Hedley-Smith
Venue: Primary School every 2nd Wednesday night. Contact the above for more details.

SOUTH AUSTRALIA

AMSOUTH AMSTRAD USERS GROUP
President: Geoff Martin
Treasurer: Bob Bleachmore   (085 56 2048)
Secretary: Ross Kennewell   (08 386 2737)
Venue: Christies Beach High School, Western Section, Beach Road, Christies Downs (adjacent to Staff Car Park) every 2nd Wednesday at 7.30 pm.

AMSTRAD COMPUTER CLUB INC. (SA)
President: Chris Sowden   (08 295 5923)
Vice Pres: Frank Matzka   (08 382 2101)
Treasurer: Les Jamieson   (08 356 9612)
Venue: The Church Hall, 15 Clayton Avenue, Plympton between 6.30 p.m. and 9.00 p.m. each Tuesday.
Mail: PO Box 210, Parkholme, SA 5043.

NORTHERN COMPUTING SOCIETY INC.
President: Reg Pye   (08 265 5272)
Treasurer: M. van der Hoeven   (08 258 1722)
Secretary: Mike Taylor   (08 264 5715)
Venue: The Scout Hall, Bagster Road, Salisbury North every Wednesday from 7.00p.m.

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

PORT PIRIE AMSTRAD USER GROUP
President: Doug Gowers   (086 36 5206)
Treasurer: Dave Green   (086 32 6834)
Secretary: Tim Eckert
Youth Rep: Mark Fusco   (086 36 2452)
Venue: Education 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.

NORTHERN TERRITORY

NORTHERN TERRITORY AMSTRAD USER GROUP
President: Kevin Bateman   (089 32 1463)
Treasurer: Greg Heron   (089 27 8814)
Secretary: Colin Gorton   (089 84 4655)
Venue: Casuarina Library, Darwin at 8.00 p.m. every 2nd and 4th Monday.

VICTORIA

CENTRAL AMSTRAD USER SOCIETY
President: Fred Gillen   (03 580 9839)
Vice-Pres: Dennis Whelan   (03 367 6614)
Treasurer: David King   (03 546 3992)
Secretary: John Holmes   (03 434 1607)
Venue: Hall at the corner of Church and Somerset Streets, Richmond on the first Sunday of each month commencing at 1.00 p.m. and generally twelve days later on a Friday evening starting at 7.00 p.m.

EASTERN AMSTRAD USER GROUP
President: Tony Blakemore   (03 878 6212)
Secretary: Barry Fredrickson   (03 846 1340)
Treasurer: Ron Dunn   (03 277 7868)
Venue: St. Ninian's Church Hall, cnr. McCracken Avenue and Orchard Grove, South Blackburn on the 1st Sunday of each month from 2.00pm.
Mail: PO Box 279, Heidelberg, Vic 3084.

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

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

LATROBE VALLEY AMSTRAD USER GROUP
Contacts: M. G. Donaldson   (051 34 5711)
              F. Baxter   (051 92 4246)
Venue: Contact above for details.

MACEDON RANGES AMSTRAD USER GROUP
Contacts: Wayne Urmston   (03 744 2719)
              Ken McMaster   (054 22 2620)
Venue: Admin. Building of Flexdrive Industries on the 2nd Wednesday of each month from 7.30 p.m.

MARYBOROUGH AMSTRAD USER CLUB
President: Chad Banfield   (054 68 1351)
Treasurer: Brendan Severino   (054 61 3191)
Secretary: Paul Clark   (054 61 2135)
Venue: Maryborough CCC each week on Friday from 12.10 p.m.

MOUNTAIN DISTRICT AMSTRAD USER GROUP
President: Ian Poli   (03 758 5282)
Treasurer: Lindsay Bell   (03 758 9921)
Secretary: Wayne Darvell   (03 221 2182)
Venue: Country Womens Association Hall, 4 Sundew Avenue, Boronia from 7.00 pm. every second Monday of the month.

NORTHERN AMSTRAD USER GROUP
Contact: Brian Ellis   (03 469 4425)
Venue: Preston every second Sunday. Contact above for more details.

SALE AMSTRAD GROUP
Venue: Sale Neighbourhood House in Leslie Street each Thursday night from 7.00 pm.

SOUTHERN AMSTRAD USER GROUP INC.
President: Peter Bradley   (03 786 3953)
Secretary: Bob Patterson
Treasurer: Vickie Finlayson   (059 98 8328)
Venue: Senior Campus at John Paul College, Frankston every third Tuesday from 7.30 to 10.30p.m.
Mail: The Secretary, PO Box 100, Seaford, Vic 3198.

WENDOUREE AMSTRAD USER GROUP
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: Large Lecture Theatre, Canberra TAFE College, Constitution Avenue, Ried on the first Wednesday of each month from 7.30 pm.
Mail: Secretary, Box 1789, Canberra , ACT 2601.

NEW SOUTH WALES

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

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

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

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

FAIRFIELD MICRO USER GROUP
Contact: Arthur Pittard (02 72 2881)
Venue: Room 65, Canley Vale High School, Prospect Road, Canley Vale every third Wednesday from 7.00 pm.

ILLAWARRA AMSTRAD USERS CLUB
President: Paul Simpson (042 27 1574)
Secretary: Ken Waegele (042 56 6105)
Publicity Off: Steve Parsons (042 96 3658)
Venue: AGA Gremania Club, Berkeley at 2.00 pm. evey third Saturday.

LISMORE AMSTRAD USERS GROUP
Contact: Kris Rosloen (066 216 810)
Max Muller (066 337 113)
Venue: Contact the above for more details.

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.

NEWCASTLE AMSTRAD USER GROUP
President: John Harwood (049 48 5337)
Treasurer: Erica Harwood
Secretary: Chris Hollander (049 67 5864)
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.

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

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 ParkState 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).

BUNDABERG 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.

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

HERVEY BAY - MARYBOROUGH AMSTRAD COMPUTER USER GROUP
President: Ian Jardine (071 28 3688)
Vice-Pres: Gerhard Schulze
Sec/Treas: Les Patford (071 28 0737)
Venue: Sports Club, Tavistock Street, Torquay on the first Thursday of each month at 7.00 pm.

MACKAY AMSTRAD USER GROUP
Contact: Des Mulrealiey (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: Tony Reynolds (07 841 4823)
Venue: Loganlea State High School (in the Communications Room) every third Saturday of the month starting at 2.00 p.m. A BASIC programming instruction 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 fourth 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 2607)
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: Adrian Christensen
Secretary: John Wode (076 61 5176)
Treasurer: Neville Christensen
Venue: Warwick Education Centre on the first and third 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: Western District Office Supplies, 500 Seventeen Mile Rocks Road, Jindalee at 9.30 a.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 93 1687)
Treasurer: Russell Lockett
Secretary: Andrew Blazely (003 93 1687)
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 27 (April 1987) is 27th February 1987

MAKING "THE AMSTRAD CUP" WORK ON A CPC464

Modifications from Roy Lunquest

In the December issue of The Amstrad User a game called The Amstrad Cup written by Roy Lundquest was featured. Because the program was written on a CPC6128, full use was made of its extra graphics commands such as MOVE x,y,pen, FILL p and GRAPHICS PEN p. These commands are not available to the 464 and hence the program just will not run. We are all grateful to Roy for providing the following modifications which will make the program work on a 464 without reducing the enjoyment of the game. All you will miss out on is the filled in colour of the land and the water. A short machine code routine to give a FILL command to 464's was published in the March '85 English Amstrad User and keen programmers might like to incorporate that to improve the graphics.

The alterations listed below look like a lot of work because I have reproduced the entire line which requires change in each case. Actually, the modifications are small and can be easily made by EDITING each line in turn and making sure it matches the version listed here.

Some of the changes are designed to make viewing a little easier (lines 30, 50 and 530). Line 1060 should be changed by 6128 and 464 owners because this will remove a 'bug' which left the old boats sitting on the course at the start of a new race. 6128 owners cold change lines 830 and 860 to give improved collision detection but leave t<>1 unchanged. All of the others have to do with the incompatible graphics commands.

The amended program was run on a 464 and worked fine.

HOW TO FIX IT

If you are typing in the program for the first time . . .
Use the corrected lines shown below to replace the original lines as you go. Save a copy to tape or disc before trying anything.

If you are loading from the December TAU tape . . .
DO NOT RUN THE PROGRAM YET!!! JUST LOAD IT IN.

You will not be able to list some lines. A syntax error will be reported if you try to list an old line, 450 for example. Re-type all such lines using the modified version below.

Now EDIT the remaining lines to be changed so that they are exactly the same as those listed below. When you are finished, save it!

If you are re-loading a version you typed in and saved
EDIT all of the lines listed below so that they match exactly.

IN ALL CASES. . .
Try running the program. You will probably have some minor errors to sort out but nothing disastrous should happen. (Murphy's law: There is always one more bug). Check the program for typos and edit where necessary. When you have it running error-free, make sure you save it again.

GOOD SAILING!!!

THE LINES TO BE MODIFIED

```
30   YACHT1=26:YACHT2=0
50   SAND=16:WATER=1
180  READ x,y:MOVE x,y
200  DRAW x,y,1:GOTO 190
440  MOVE 30,180:DRAW 30,270:DRAW 20,260:MOVE
     30,270:DRAW 40,260
450  MOVE 25,300:TAG:PRINT "N";
500  MOVE 300,360
510  MOVE 340,320: DRAW 340,380,1
530  WINDOW#1,15,30,8,16:PAPER#1,0:CLS#1
600  x2=345:y2=340+(start-1)*20:grpen= turn+1
620  CLS#1:PEN#1,turn+1:PRINT#1, yt$(turn) :
     grpen=turn+1
830  t=TEST(xx+hstep*3,yy+vstep*3) : IF t<>0 and
     t<>turn+1 THEN 860
840  PLOT ROUND (xx),ROUND(yy),grpen:
     x(turn)=xx:y(turn)=yy
860  r= ROUND (xx+hstep*3):IF (r=340 OR r=
     341) AND yy<370 AND yy>330 THEN 950
990  GOSUB 1070:SOUND 1,1000,100,15:SOUND
```

```
     1,1,30,1:SOUND 1,1000,100,15:MOVE 340,330:
     DRAW 340,370,turn+1 '****** sound foghorn
     and redraw finish line ****
1060 IF k$="y" THEN RESTORE: GOTO 140
1100 grpen=0
1110 FOR x=x1-1 TO x1+1:FOR y=y1-1 TO y1+1:
     PLOT x,y,grpen:NEXT y,x
1120 FOR w=-1 TO 1:FOR z=-1 TO 1:MOVE x1+w,
     y1+z:DRAW x2+w,y2+z,grpen: NEXT z,w
1130 grpen=turn+1
1140 FOR x=x2-1 TO x2+1:FOR y=y2-1 TO y2+1:
     PLOT x,y,grpen:NEXT y,x
```

THE CHANGES

Line 30 - better colours for the yacht dots on the map

Line 50 - better background and boundary colours

Line 180 - MOVE x,y replaces MOVE x,y,1

Line 200 - DRAW x,y,1 replaces DRAW x,y

Line 440 - MOVE 30,180 replaces MOVE 30,180,1

Line 450 - delete GRAPHICS PAPER 0

Line 500 - take out the FILL 1 command

Line 510 - DRAW 340,380,1 gives a visible finish line

Line 530 make - PAPER#1,0 replaces PAPER#1,1 to make text easier to read

Line 600 PEN - grpen=start+1 replaces GRAPHICS PEN start+1

Line 620 - grpen=turn+1 replaces GRAPHICS PEN turn+1

Line 830 - t<>0 replaces t<>1 to work with new background colour
         - hstep*3 and vstep*3 give improved collision detection

Line 840 - PLOT ROUND (xx),ROUND (yy),grpen - add in the ,grpen

Line 860 - hstep*3 to match line 830

Line 990 - MOVE 340,330 replaces MOVE 340,330,turn+1
         - DRAW 340,370,turn+1 replaces DRAW 340,370

Line 1060 - replace 580 with RESTORE:GOTO 140 (remove bug)

Line 1100 - grpen=0 replaces GRAPHICS PEN 1 (that's right!)

Line 1110 - PLOT x,y,grpen replaces PLOT x,y

Line 1120 - DRAW x2+w,y2+z,grpen replaces DRAW x2+w,y2+z

Line 1130 - grpen=turn+1 replaces GRAPHICS PEN turn+1

Line 1140 - PLOT x,y,grpen replaces PLOT x,y

Tape subscribers will find the above modified version on this month's tape entitled AMCUP464.

User Group Contact List

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

NSW

Chris Craven	Canowindra	(063) 44 1150
Trevor Farrell	Coolah/Mudgee area	(063) 77 1374
T.J. Webb	Glossodia	(045) 76 5291
David Higgins	Inverell	(067) 22 1867
Paul Wilson	Moruya	(044) 74 3160
Frank Humphreys	Mummulgum	(066) 64 7290
Bob Hall	Newcastle	(049) 52 6915
Stephen Gribben	Singleton	(065) 72 2732
Ken Needs	St. Ives	(02) 449 5416
Chas Fletcher	Toongabbie	(02) 631 5037
Nick Bruin Snr.	Tweed Valley	(066) 79 3280

Vic

Stuart McLean	4/304 Albert St. Sebastopol, 3356	
Brian Russell	Ballarat	(053) 31 2058
C. van de Winckel	Ballarat	(053) 313 983
David Carbone	Burwood	(03) 29 4135
Rod Anderson	Camperdown	(055) 93 2262
Paul Walker	Heathmont	(03) 729 8657
Terry Dovey	Horsham	(053) 82 3353
Andrew Portbury	Leongatha	(056) 62 3694
Sue Kelly	Manangatang	(050) 35 1402
Angela Evans	Mt. Evelyn	(03) 736 1852
Keith McFadden	Numurkah	(058) 62 2069
Lindsay Parker	Wandin North	(059) 64 4837
Maureen Morgan	Warnambool	(055) 67 1140

QLD

Debbie Topp	Bribie Island	(075) 48 1688
Steven Doyle	Caloundra	(071) 91 3147
Mick O'Regan	Gladstone	(079) 79 2548
Kylie Telford	Goondiwindi	(076) 76 1746 (weekendsonly)
D.F. Read	Ingham	(077) 77 8576
Tim Takken	Ipswich	(07) 202 4039
Alan Laird	Maryborough	(071) 22 1982
Graeme Annabell	Rockhampton	(079) 27 4915
R.C. Watterton	Toowoomba	(076) 35 4305

SA

Lindsay Allen	Murray Bridge	(085) 32 2340
Michael Spurrier	Murray Bridge	(085) 32 6984
Mrs. S. Engler	Penola	(087) 36 6029

WA

Dave Andersen	6 Kitchener Rd Merredin, 6415	
Graeme Worth	Scarborough	(09) 341 5211
P.M. Nuyens	Waroona	(095) 33 1179

TAS

Conal McClure	Scottsdale	(003) 52 2514

If your name appears in the above list, then please drop us a line (if you haven't already done so) to let us know how things are proceeding.

GILTRONIC - a dealer with ambition and drives.

A long time ago in a small flat in Richmond, Victoria, a small group of people with newly acquired AMSTRAD computers sat and looked at each other.

The reason for this meeting was soon to become apparent, nobody knew how to work the things from the U.K. and so it was decided to form the user group later to be known as C.A.U.S. (the Central Amstrad User's Society in Victoria).

This was the first stepping stone for Fred Gillen, one of the founding members of C.A.U.S., in the establishment of the Amstrad mail order company GILTRONIC AUSTRALIA. Fred had been involved in computers for some years, in fact he had one of the first Tandys in Australia and progressed to complete

microprocessor courses at various colleges in Melbourne.

It all started when Fred realised the 5.25" drives could be interfaced to the AMSTRADs as second drives. He connected one to his machine and a lot of his fellow Amstrad users figured it was such a good idea they wanted one too. This led to the now well known GILTRONIC 5.25" drives which save people a lot of money on discs. (3" discs retail around $10.00 as opposed to 5.25" for $1.50).

So from supplying extra drives to his friends, Fred and his wife Geraldine established the mail order outlet to give other Amstrad Users access to the vast range of software and hardware available.

The reaction was so good over the last year or so that just before Christmas GILTRONIC

AUSTRALIA opened a retail outlet at Bonbeach, Victoria, (that's between Chelsea and Carrum) to cater for Amstrad users.

Fred intends to offer the full range of software and hardware but if the item you require is not in stock he will get it for you, if it is available in Australia.

At the moment Fred is negotiating with overseas companies to obtain better prices on hardware etc. so keep your ear to the ground for specials from GILTRONIC.

Being president of C.A.U.S. this year, he is also more than willing to try and help with any problems you might have with your AMSTRAD. If he can't help chances are he can put you in contact with someone who can.

GILTRONIC AUSTRALIA
Mail Order:
54 Eulinga Ave, Aspendale, Victoria 3195
Phone: 03 580 9839 (24 hrs)
Retail:
528a Nepean Highway, Bonbeach, Victoria 3196
Phone: 03 773 1244

Tuition available in Queensland

Computercraft had its birth on 4th August 1986 at Margate in the fair bayside city of Redcliffe, a few kilometres north of Brisbane. Ed Squire purchased "The Wicker basket", a thriving cane furniture and accessory retail outlet, and a decision was made to diversify. In order to make the best use of Ed's 30 years in the communication industry (Telecom) he chose the Computer sales area.

The last 18 years of his service

with Telecom was in their Technical Training Centres (Melbourne, Ballarat and Brisbane) so, what better incentive to buyers than to provide FREE with any computer purchased, a 12 hour training course. The course is also sold to others, and is quite successful in itself, as well as being a great indicator to the kind of back up offered to customers of Computercraft. Ed also provides personal tuition at competitive

rates for the Amstrad machines.

Computercraft carry the full range of Amstrad machines and a selection of software, books etc. applicable to Amstrad, and, of course, supplies of The Amstrad User.

**THE WICKER BASKET &
COMPUTERCRAFT**
289 Oxley Avenue, Margate, QLD 4019. Phone: 284 0978

All items for inclusion in this section should be addressed to:
The Editor (News Items),
The Amstrad User, Suite 1,
245 Springvale Road,
Glen Waverley, Vic 3150

20 mb Hard Disk plug-in card and Acceleration card for Amstrad PC1512

Verbatim has introduced DataLife DataBank - a 20 megabyte hard disc plug-in card for increased internal storage on personal computers; and DataLife CPU-Card for improved performance. These two new products are designed for the IBM PC, XT, AT and compatible computers including the new Amstrad PC1512.

The DataLife DataBank is one of the first 20 megabyte plug-in cards available. It occupies one full and one half expansion slot on most systems or only one slot if Slot 1 is available. Access time is 78 milliseconds (thousandth of a second) while power consumption is less than 13 watts.

The DataLife CPU-Card gives a six-fold increase to the system speed of a standard IBM PC making it 20% faster than the IBM PC/AT. The card occupies half a slot.

It replaces the IBM PC's Intel 8088 microprocessor with the more powerful and faster Intel 80286. The AT uses the same chip. Combined with a DataBank hard disk plug-in card, the DataLife CPU-Card upgrades the performance of the PC to an internal clock speed of 7.2 MHz or 20% faster than the IBM PC/AT. Together the DataBank and CPU-Card occupy two expansion slots.

DataLife DataBank operates with IBM compatibles and is also compatible with the Xenix operating system.

DataBank uses a 3.5 inch hard disk with automatic locking making it resistant to shock and more readily transportable. The unit is pre-formatted but an easy-to-use formatter is also supplied.

The new Verbatim unit allows a standard dual floppy IBM PC to be upgraded to the storage capacity of an XT without taking any desk space required by an external hard disk. The board's control logic can either replace or work alongside an XT or AT hard disk controller.

DataLife DataBank carries a replacement warranty for the first 6 months of service with an extended service warranty for an additional 6 months.

Verbatim manufactures flexible diskettes in Australia and markets them with other products through a network of resellers. It is a subsidiary of Verbatim Corporation - an operating unit of Eastman Kodak Company.

VERBATIM AUSTRALIA
49-53 Hotham Parade, Artarmon, NSW 2064
Phone: (02) 437 6477

AMSNET going on-line with NIX

Something exciting is now available for all Amstrad owners. It's called "NIX". And what is NIX?

Well, it stands for Network Information Exchange and that means that if you have a 1200/75 baud modem and Viatel software you will be able to call up the new Amstrad Bulletin Board on Viatel #6423 and log on.

What can you do? For starters, if you want to get some information about your computer, just leave an open message on the BBS and someone else who has the information will leave a message for you. Simple isn't it.

Also, you will be able to browse through the many pages of info on the latest offerings from Amsnet and others. What are this month's specials? Where can I get this and that? You will be able to look up The Amstrad User Index (currently in preparation) and see which issue carried what, the latest product for your computer and ask why a certain program doesn't run the way you expected.

NIX is destined to help you get information fast. It's an information Bulletin Board, not a chit-chat board. We are hopeful that all computer users will want to use it so they can see how best to run a program or get a fix on a bug.

Each month we want to be able to print in this magazine "The Best of Nix" in an easily read format so those without modems can see how a Bulletin Board can help them.

Anyone with the right equipment will be able to access the public section of NIX, but if you want the deep down info, then you best join the Amsnet User Club and then you will gain access to the closed user section, plus super-dooper discounts on lots of goodies for your computer, plus the ability to order virtually any product from overseas with the knowledge that your money is still safe in Australia.

If you don't have a modem yet, don't' worry because Amsnet can supply you with modems and programs for any Amstrad model. Anyone buying a modem and software will automatically be granted membership of the all new Amsnet User Club for one year .. a saving of $45.

AMSNET can be contacted on Viatel #6423 or by phone on 075 531734/321465.

Gossip from the U.K.

Our "spy" returns with some meaty rumours from Amstrad

◆ One of the main reasons for the success of the Amstrad range of computers must be attributed to the price structure - it's really good value when you compare them with others. But news has just broken, and confirmed by Amstrad themselves, that extensions to the PCW and PC range are currently under development and due for release in the UK towards the third quarter of 1987 at prices even cheaper than current models. This is apparently due to the fact that more components designed by Amstrad will be incorporated rather than expensive third party components. Rumour has it that Amstrad are also developing their own hard disc drive and controller, replacing the third party Tandon, and an enhanced graphic adaptor card for higher resolution and more colours on the PC1512. Prospective PCW owners may like to know that an improved PCW including a better quality printer is likely to be released late Summer (that's your Winter). My last bit of gossip from Amstrad is that they are planning to market a number of printers to be used on Amstrads as well as other machines. Looks like a busy 1987 for Alan Sugar and the gang!

◆ I've seen a working version of the long awaited AMX Pagemaker (by Advanced Memory Systems). It's very impressive. Although developed by the people who produced the mouse, it will still work with joystick or keyboard. It comes on disc and requires a 6128, or a 664 with 64k expansion ram or a 464 with 64k expansion ram and a disc drive. The list of features is long - you can create a complete A4 newspaper style page with powerful text, paste and graphics facilities. Text and graphics can be mixed at any point on the screen; text produced with various word processors can be loaded into Pagemaker and then formatted to your own design. Four character sets are included and a complete Art package, and you can also use a Vidi (picture digitiser). You've got to see it to believe it.

◆ Depending upon your standards you may feel that some computer games are becoming excessively violent. There now exists here in the UK, a system whereby software houses can submit their latest offerings to the film censors for a rating which, when "awarded", suggests to the retailer whether or not he can sell it to a person under the age of 15 or, at worst, whether it should be banned altogether. The first to get a rating is Dracula from CRL. I can't see the system working though - after all, hands up those people who have sneaked in to an movie they weren't supposed to see? I thought so!

INSIDE I.S.D.

ISD (International Software Distributors) was established in July 1984 by Joe Pilz and Luke Hardy who felt that there was a gap in the market for an efficient service oriented company.

Until this point there was very little choice for the retailer in terms of where and what could be bought and service from some distributors was less than adequate. It would frequently take 4 to 12 weeks to obtain products and coupled with pricing problems, the retailer was forced to sell software at almost unsaleable prices.

Due to ISD's policy to provide 24 hour delivery, their ability to obtain stock from overseas suppliers within 10 days and their very competitive pricing, ISD has grown into one of the largest suppliers of Leisure/Entertainment Software. Because of this success many 'exclusive' agreements have been obtained with UK software houses. Amongst these are Firebird, Mastertronics, Electric Studio, Database, Rainbird, Gremlin - the list goes on.

ISD maintains a staff of 16 people at Head Office in Melbourne. Victoria is administered from Head Office, while all other states (bar Northern Territory) have a minimum of 2 people to sell the products and service customers.

With the advent of the Amstrad PCW and PC machines, ISD has now set up a new Business Division. Here the emphasis is to import products at a low price but of high standard. It is also essential that the products are well documented and user friendly. A full range for these machines is planned for January 1987 covering Databases, Spreadsheets, Word Processors, Accounts and more.

And the best selling titles for 1986? Topping the list was Database's "Mini Office II" with Firebird's "Elite" coming second.

Cheat Mode

Some more Tips, Pokes and Game busting ploys to improve your scores. Don't be shy - send yours in to share with all of us.

POKE METHODS

This is the section where we explain how to input the majority of *Cheat Mode* pokes. There are two different methods - the instructions for each poke tell you which one to use. If you have a 664 or 6128, you'll have to type | tape before using either.

<u>Method 1:</u> Make sure that you've rewound the game tape to the beginning. Now type in the poke listing then type RUN and press the 'Enter' key. (Don't use the key marked 'CTRL' or 'CONTROL', that will stop the poke from working.) Press the PLAY key on the cassette deck, and hit any key on the main keyboard - the space bar will do nicely. The tape should now start to play through in the normal way.

<u>Method 2:</u> For this method, you have to skip the first bit of the game program. To do that, start by rewinding the game tape to the beginning. Now type in the listing. Then type CAT, and press the 'Enter' key. Start the tape by pressing PLAY and hitting a key, and then watch the screen.

After a little while you'll get the message "Found SOMETHING block 1". It doesn't matter what the SOMETHING actually is - this will vary from one game to another. If the instructions with the poke just tell you to skip the first block you should stop the tape here. If the instructions tell you to skip several things, stop the tape when the "Found" message comes up for the last thing you're trying to skip.

Once you've stopped the tape press the ESC key, type RUN, and press the 'Enter' key. Now press PLAY on the tape deck, and hit a key on the keyboard to start the tape running.

CONQUEST

Some quick, but very informative, tips for the Mastertronic game from a reader who didn't put his or her name on the bit of paper concerned - we tend to shuffle separate pieces of paper so put your name on every single thing.

1. The grey book teaches you to use magic wands. Use it then drop it.
2. The same applies to the book of potions.
3. The magic axe kills all slow-moving creatures.
4. The grey wand kills red creatures and the red wand kills grey creatures.
5. Both wands kill green creatures.
6. If you're touched by a green creature you're poisoned and should drink a potion.
7. Small keys open chests.
8. Large keys open doors to other sections of the castle.
9. Ornate keys open cupboards.
10. All keys must be the same colour as the object to be opened.
11. To pass through the fire-place carry the poker.
12. The sounds make sense. Going in the right direction carrying the right object causes a particular sound, as does a decrease in energy.
13. Coins can be used on the vending machines.

GREEN BERET

This poke is for the disc version of the game and gives you up to 255 lives. You just have to type it in and run it, then every time the game loads you are asked how many lives you want. Note that the poke does write to the disc, so make sure the write-protect tab is off and that you have typed the listing in very carefully.

```
1    'Green Beret
2    'Amstrad User Feb87
10   OPENOUT "Y" :MEMORY &1000
20   MODE 1 : LOAD"data1"
30   INPUT "How many lives ? ",lv
40   IF lv<0 OR lv>255 THEN 30
50   POKE &137B, lv
60   SAVE"data1",b,&1040,&3 FC0
70   RUN"BERET"
```

STARQUAKE

Nicholas Pavis brings us a Method 1 poke for the Bubble Bus game. It gives you infinite lives

```
1    'Starquake
2    'Amstrad User Feb87
10   LOAD"!tload",&A2A2
20   MODE 1 : INK 0,0:BORDER 0:INK 1,6:INK
     2,20:INK 3,26
30   FOR a=&A57F TO &A587
40   READ a$
50   POKE a,VAL("&"+a$)
60   NEXT
```

```
70    POKE &A202,&7F
80    POKE &A2D3,&A5
90    CALL &A2A2
100   DATA 21,f6,1c,36,00,cd,6b,a5,c9
```

LIGHT FORCE

Pokes for both tape and disk versions of the game here. The Method 1 tape poke comes from Mark Bennett and gives 255 lives. Save the disk poke to the game disk under any name, then run it to automatically load the game.

```
1    'Lightforce (disk)
2    'Amstrad User Feb87
10    OPENOUT"Y":MEMORY &500
20    MODE 1:LOAD"DISC"
30    FOR t=&641 to &65B
40    READ a$:POKE t,VAL("&"+a$)
50    NEXT t
60    INPUT"How many lives ? ",lv
70    IF lv=0 THEN 60
80    POKE &64E, lv
90    CALL &5D0
100   DATA 21,B8,1C,CD,83,BC,CD,7A
110   DATA BC,21,0D,76,36,FF,0E,FF
120   DATA 21,31,73,CD,16,BD,00,00
130   DATA 00,00,C9
```

```
1    'Lightforce (tape)
2    'Amstrad User Feb87
10    OPENOUT"d":MEMORY 1499
20    LOAD"lightforce"
30    FOR n=&63F TO &643:READ a$
40    POKE n,VAL("&"+a$)
50    NEXT
60    CALL 1500
70    DATA 21,0d,76,36,ff
```

APPRENTICE

Peter Featherstone has a poke that gives infinite lives, time, ammo and also speeds up the game (causing some extra flickering as well). It's entered using Method 1. The second poke comes from David German who not only does what Peter did (except for speeding the game up) but allows you to set the number of rings to collect as well and turn the title tune off.

```
1    'Apprentice 1
2    'Amstrad User Feb87
10    BORDER 0:INK 0,0:MODE 1
20    OPENOUT "d":MEMORY 4600
30    LOAD""
40    FOR f=1024 TO 2000
50    READ a:IF a=999 THEN GOTO 80
60    POKE f,a
```

```
70    NEXT
80    POKE 4704,12:POKE 4705,4
90    CALL 4608
100   DATA 67,111,112,121,32,111,102,32,
      65,65,33,255
110   DATA 175,50,158,145
120   DATA 175,50,95,139
130   DATA 175,50,123,137
140   DATA 62,118,50,25,189,62,201,50,
      26,189
150   DATA 33,0,4,17,165,136,1,12,0,
      237,176
160   DATA 195,122,158,999
```

```
1    'Apprentice 2
2    'Amstrad User Feb87
10    FOR b=&BF00 TO &BF2C:READ a$:POKE b,
      VAL("&"+a$):NEXT:DATA cd,ab,bb,21,
      0f,bf,7e,b7,c8,cd,5a,bb,23,18,f7,0f,
      02,1f,09,19,48,41,43,4b,45,44,20,42,
      59,20,44,47,20,20,2d,20,30,35,2f,30,
      39,2f,38,36,00
20    MODE 2:INPUT"Rings 1-10";a:IF a<1 OR
      a>10 THEN 20 ELSE c$="3e"+HEX$(a,2)
      +"32f89d"
30    CLS:INPUT"Infinite livesY/N": a$:a$=
      UPPER$(a$):IF a$="Y" THENc$=c$+
      "3e00329e91"ELSE CLS:INPUT"No. of
      lives 1-99":a:IFa<1 OR a>99 THEN 30
      ELSE c$=c$+"3e"+"328792"
40    CLS:INPUT"Turn off title tune Y/N",
      a$:a$=UPPER$(a$) : IF a$="Y" THEN
      c$=c$ +"3ec9323d94"
50    CLS:INPUT"Infinite lightning Y/N";
      a$:a$=UPPER$(a$) : IF a$="Y" THEN
      c$=c$ +"3e00325f8b" ELSE
      c$=c$+"3eff328c92328d92"
60    CLS:INPUT"Stop clock Y/N";a$:
      a$=UPPEr$(a$) : IF a$="Y" THEN
      c$=c$+"3e00325f8b" ELSE
      c$=c$+"3eff328c92328d92"
70    c$=c$+"c37a9e":ad=&BE00:FOR b=1 TO
      LEN(c$) STEP 2:POKE ad,VAL
      ("&"+MIDS(c$,b,2)):ad=ad+1:NEXT
80    OPENOUT "d":MEMORY &11FF:LOAD"!the
      apprentice":POKE &1251,&CD:POKE
      &1252,0:POKE &1253,&C3:POKE &125F,
      &C3:POKE &1260,0:POKE &1261,&BE:CALL
      &1200
```

GALVAN

These tips for the Imagine coin-op come from Jonathan Newcombe , who obviously didn't have much trouble with it.
One of the main things is to keep on the move. When

the game starts, immediately go right and up the first set of steps to get a power pyramid. You'll then be able to fire the arc-blaster. As you lose power your weapon is degraded to a gun and then you are down to fists, which are virtually useless, so you should search for another power pyramid immediately. You can shoot the rotating triangle, but it will paralyze you if touched. The balls that roll along and the sparkling drops all have the same effect and can all be shot.

When you reach the three-headed demon you will need an arc-blaster. The best attack is to jump up and down firing rapidly, then stand still and shoot until the hands blow off. You will probably have only a gun by now with which to kill off the two heads.

On the next level you'll find a few red power pyramids which give you the Blue Bolt Neutralizer. This is a devastating weapon and makes life a lot easier. The demon is easier to eliminate with this weapon. Once onto the next level you'll find many more robots. There are only a few variations on the levels and there is a certain path through each one. Once learnt it becomes a lot easier.

CLASSIC AXIENS

A neat little job has been done on the new Bubble Bus game. Enter the poke using Method 1, then experiment to see what each item does.

```
1    'Axiens
2    'Amstrad User Feb87
10   FOR t=&8000 TO &800B
20   READ a$ : POKE t,VAL("&"+a$)
30   NEXT t : CALL &8000 : MODE 2
40   INPUT"How many lives ? ",lv
50   IF lv<0 OR lv>200 THEN 40
60   POKE &478C,lv
70   PRINT"Strs (Y/N) ?"
80   a$=UPPER$(INKEYS):IF as="" THEN 80
90   IF a$="N" THEN POKE &4AE8,&C9:GOTO
     120
100  IF a$="Y" THEN 120
110  GOTO 80
120  PRINT"Invisible aliens "(Y/N) ?"
130  a$=UPPER$(INKEY$):IF a$="" THEN
     130
140  IF a$="Y" THEN POKE &433F,&C9 :
     GOTO 170
150  IF a$="N" THEN 170
160  GOTO 130
170  PRINT"Stop aliens flying/dropping
     bombs (Y/N) ?"
180  a$=UPPE$(INKEYS):IF a$="" THEN 180
190  IF a$="Y" THEN POKE & 2DEF,&c9 :
     GOTO 220
200  IF a$="N" THEN 220
210  GOTO 180
220  PRINT"Stop energy decreasing
     (Y/N) ?"
230  a$=UPPER$(INKEY$):IF a$=""THEN 230
240  IF a$="Y" THEN POKE & 49B0,&C9:
     GOTO 270
250  IF a$="N" THEN 270
260  GOTO 230
270  CALL &2000
280  DATA 21,00,20,11,00,53
290  DATA 3E,16,CD,A1,BC,C9
```

ELITE

Another anonymous tip, from an absentminded reader who forgot to give name and address, but an important one. When using the cheat featured in Issue 23 (December) never save your games onto the *Elite* disc, because the cheat corrupts them. Abject apologies to anyone who found out the hard way.

DAN DARE
PILOT OF THE FUTURE
This is a great little tip from Mark Baldwin. It opens up a few more screens on the Virgin game and even allows you to collect the second bridge block before the first!

All you have to do is get to the screen that is one right and one up from where Digby is. Walk to the edge of the platform and jump to the right. You'll fall onto what looks like the death screen. But as you fall towards the bottom of it, jump again to the right and you'll appear in an interesting new section. From there on you can experiment for yourself.

REVOLUTION
Tony Hoyle has been at it again and produced a Method 1 poke for the Vortex game. Ignore the screen corruption on loading and the fact that the death sequence won't occur as before. You'll find you've got infinite lives and time.

```
1    Revolution
2    'Amstrad User Feb87
10   x=&8000
20   READ a$:IF a$<>"xx" THEN POKE x,VAL
     ("&"+a$) : x=x+1 : GOTO 20
30   CLS : CALL &8000
40   DATA cd,37,bd,06,00,11,00,c0
50   DATA cd,77,bc,eb,cd,83,bc,cd
60   DATA 7a,bc,3e,f7,32,e4,39,3e
70   DATA c3,32,30,00,21,25,80,22
80   DATA 31,00,c3,af,39,f3,21,40
90   DATA 00,11,00,bb,01,f3,02,3e
100  DATA 8d,cd,67,80,21,4a,bb,11
110  DATA 4a,bb,01,a9,02,3e,a6,cd
```

```
120  DATA 67,80,21,00,a0,22,f1,bd
130  DATA 21,00,c0,22,69,bd,21,5c
140  dATA 80,11,00,a0,01,0b,00,ed
150  DATA b0,c3,7d,bd,3e,a7,32,1a
170  DATA 07,32,d8,2a,c3,9a,04,32
170  DATA 80,80,3a,80,80,ae,77,ed
180  DATA a0,3a,80,80,c6,0a,cb,ff
190  DATA 32,80,80,78,b1,20,eb,c9
200  DATA xx
```

INFILTRATOR

These tips should prove useful for anyone just starting out on the game.

Mission 1: Fly to the enemy HQ and photograph secret documents and war plans. Always try to communicate with jets before they communicate with you, because it forces them to identify themselves. Pay close attention to the identification: if the name sounds sinister it's probably the enemy, and you should take appropriate action. Never start a fight unless you have a really clear shot because jets always fight back to the death.

Always fly above 200 feet. This allows you to avoid enemy ground detection before landing and stops you from crashing too often. Flying too high - over 2,000 feet - isn't a good idea either, as it takes a long time to get to the ground from that altitude.

Use your turbo as much as possible. It allows you to stretch out the fuel supply and reduces the time to reach the destination. Watch the oil temperature: if it gets too hot the engine will fail.

The heat-seeking missiles are your best weapon, so don't waste them. Wait for the enemy jet to fly into your path and then hit the fire button. It's best not to try to force the jet into your sights.

Concentrate on keeping the helicopter flying towards its destination. Always use the automatic direction-finder in the cockpit. It's best to program it immediately on takeoff.

If you make it to the enemy base you can select various items to help you: sleeping gas, gas grenades, papers, camera, explosives etc. A general point to remember when exploring the complex is that if the room you enter is grey in colour, it's important. Search it carefully.

You should gas any guard in rooms which you want to photograph. The security car and janitor's uniform are in a building in screen two. Screen one contains the security control centre. Maps and documents to be photographed can be found in screens four, five and six.

If you finish the ground mission and set off an alarm you'll attract a maniac jet which you'll have to blow up. If you find an electronic key when searching in the chests in the buildings you can turn the alarm off.

Mission 2: To get the scientist off the base you have to make him invisible. You'll find an invisibility pill in a cabinet in the laboratory. Give it to him and he will disappear and follow you outside. To save time give him the pill before planting explosives under his desk in the laboratory.

Turn on the mine-detector before leaving or entering the area where the helicopter has landed, because you're surrounded by mines. Also remember to stay away from guards while wearing the janitor's uniform.

STAINLESS STEEL

Here's some playing tips from Neil Brown and Keith Weller .

Zone 0: The helicopters need to be hit twice, so make it count. If hit only once they fly all over the place making them difficult to hit. To shoot them just position yourself facing across the road as they approach on the scanner. When they are nearly on the screen, fire a continuous line of bullets across the screen and you should get the necessary two hits. Always use the scanner before venturing up the left side of a row of cars.

When dealing with the metal eyes, try to get them just showing at the top of the screen where they won't normally fire on you. Don't forget that to enter the car at the end of the zone you have to touch the right side of it.

Zone 1: You have to watch your fuel carefully here since the desert section has to be negotiated quite slowly. Stay around at the start for a while picking off the missiles, and keep careful watch on your scanner to see when a missile may be coming up behind you. When you reach the first barrier don't forget to shoot the square droid because you have to destroy all of the enemy to complete the zone.

You can sneak by on the right side of the first barrier and over the starfish on the right of the second barrier. Don't forget you've got to shoot everything and can't get past the wall at the end of the zone.

Zone 2: Bomb the subs until the planes arrive and then pick them off. Try to pick just one sub to keep bombing so you can hit it accurately. When you come across fuel leave it until you really need it because you'll need a lot.

Zone 3: It's much like Zone 0 so just progress through it in the same way.

SOUTHERN BELLE

Andrew Duff of Tain has some tips on the Hewson steam-locomotive game that should help you stay on time.

Firstly as an overall tip it's best to use accelerated time during each journey, as this makes the whole

journey from Victoria to Brighton last 12 to 15 minutes instead of an hour.

Starting off is easy, pressing C four times to put the cut-off full on and whistling, then putting the regulator half on (pressing R twice). After a few seconds you will pull out of the station. When your speed is higher than 4 you should press R twice gain to put the regulator full on.

Once a speed of around 30-40 is achieved you can ease down on the cut-off, pressing Control-C twice to put it at half. When going downhill very fast put the regulator on half and the cut-off on its lowest position but not off; return to previous settings for normal travel. When climbing gradients the regulator should be full on and the cut-off about half or more.

Slowing down is best done with light or medium braking, but putting on the blower and closing the regulator will also slow you down quite fast. Before entering a tunnel put the blower on and whistle a second or two before entering the tunnel.

Try to conserve as much coal and water as possible throughout the journey, although it isn't easy. As a general rule having no coal and water at 2 or above at Clayton tunnel should see you through to the end.

If you are going very fast (over 70) at Clayton or Patcham tunnels it is best to use light or medium braking, ready for going slowly into Brighton. If you hit the buffers at Brighton at a high speed you will crash. You must stop within 60 feet of the end of the platform - this is tough and you'll need practice to achieve it.

Remember to observe the speed limits and to use the blower and whistle for the tunnels.

BOMB JACK

This is a Method 1 poke from Stephen Basford which allows you to set the number of bombs that have to be collected to move on to the next screen, as well as the number of lives.

```
1    'Bombjack
2    'Amstrad User Feb87
10   MEMORY 5999:MODE 0:BORDER 0:FOR  c=0
     TO 15:READ d:INK c,d:NEXT: LOAD"
     !bjscreen.bin"",49152 :LOAD"!bjcode.
     bin",6000
20   MODE 1:INPUT "Infinite lives? y/n:
     ";e$:IF e$="y" THEN POKE 6648,0 ELSE
     INPUT "Enter no. of lives : ",a :
     POKE 6144,a
30   INPUT "Alter no. of bombs to collect?
     y/n:";e$: IF e$="y" THEN INPUT "No.
     of bombs to collect 1-24 :";n"IF n<1
     OR n>24 THEN n=24 ELSE POKE 6237,n
40   MODE 0:CALL 6000
```

```
50   DATA 1,0,26,8,24,13,11,6,15,16,5,
     2,6,3,20,10
```

STAINLESS STEEL

(Yes - another one!) Stephen Basford has also come up with this poke which lets you start on any level of the Micro-Gen shoot-em-up, and also gives infinite lives and fuel. Use Method 1.

```
1    'Stainless Steel
2    'Amstrad User Feb87
10   INPUT "Level 0-3:",a:IF a<0 OR a>3
     THEN 10
20   MEMORY &3FFF : CLS : LOCATE 7,12 :
     PRINT "Play tape from the start"
30   LOAD"!steel"
40   POKE  &400B,143 : POKE   &400C,1 :
     POKE  &4084,158 : POKE   &4085,254
50   FOR c=&415E TO &4184:READ d:POKE c,d
     :NEXT:POKE &415F,a:CALL &4000
60   DATA 62,0,50,232,191,175,50,125
70   DATA 20,50,126,20,50,127,20,50
80   DATA 128,20,50,129,20,62,195
90   DATA 50,216,6,175,50,161,8,50
100  DATA 162,8,50,163,8,195,22,1
```

MELTDOWN

Now for some interesting news from Nicholas Pavis on the Alligata game for the 6128 on disk. Take it away, Nicholas . . .

I completed Meltdown a month ago, and was presented with a certificate on which was a number. I rang this number and it turned out to be the author: Ross Goodley. He told me I was the first to finish and he presented me with a cheat mode - a game editor! This seemed to be an obvious cheat mode, for it is contained in one of the passwords.

The cheat is to type in 663605 during the game, which gives you the editor. This is how to use it. Caps Lock must be on. Type HELP and you're given a list of variables. The rest is up to you, but I'll leave you with an example:

```
SET   LIFT    1
SET   LEVEL   2
SET   OX      3
SET   SPRITE  3
GAME
```

THE AMX MOUSE

A review by Michael Toussaint

QUOTE: "If man's best friend is his dog, then the Computer Users' best friend must surely be the humble mouse! !"

The AMX mouse brings to the Amstrad a peripheral device which enhances the graphics capabilities of the machine by introducing user friendliness normally found on machines with a higher price tag.

First an explanation of the mouse environment which is not a place where those small furry rodents live, but in computer terminology is represented by the letters W I M P. This stands for Windows, Icons, Mouse and Pull-down-menus, and was created to make the computer more user friendly.

The Mouse itself is used as a pointing device, and can be used on any horizontal level surface. It's movement controls a pointer on the screen which can take any shape to represent the device being used. Menu's and Icons can be pulled-down from the screen and selection is executed by means of pressing a button the mouse. An Icon is a 2 character x 2 character pictorial representation of a function.

In this way a program can be executed simply by moving the mouse and pressing a button. It eliminates the time consuming task of typing commands and using cursor keys to move around the screen. In fact the keyboard need never be used, except for text insertion.

The AMX Mouse is produced by Advanced Memory Systems Ltd. and retails at the time of writing for $149.00

The package includes the Mouse, with connector and cable, Mouse Interface and Software consisting of AMX Control, AMX Art, ICON Designer and Pattern Designer.

The software is supplied on cassette only, with instructions for transferring to disc. This is where I had my first bug. Using these instructions to transfer the files to disc, I found that the sequential files on the tape were <u>not</u> in the same order as the files given in the instructions. As a result there was a lot of winding backwards and forwards, (providing you remembered to set the counter first) to successfully transfer the tape. On the other hand if Transmat or a similar program was used the transferred files had to be renamed before the program would run.

INSTALLATION

Connecting the mouse to the computer was fairly simple. The interface plugs into the joystick port, the mouse connector cable plugs into the interface and the power supply lead from the monitor connects into the mouse power supply lead. This lead is then connected back into the keyboard socket. The mouse is now ready to be used.

Incidentally, the mouse can be left connected when not in use, but if the joystick is required, the mouse interface is simply unplugged from the keyboard and replaced by the joystick. The power supply remains untouched, and if the mouse is required again, merely unplug the joystick and plug in the mouse interface - simple.

OPERATION

To operate the system, AMX control must first be run. This program sets up control codes ready for AMX Art, Icon Designer or Pattern Designer.

When the AMX Control program is installed, the available memory is just over 29k. This seems sufficient for the most complex work of art that can be produced, given the resolution of the screen.

AMX ART

The art screen consists of five main areas. The drawing area of course is in the middle of the screen and takes up most of the area. The top section is a pull-down menu area, the left hand has the selectable patterns and the right hand side the mode icons.

To activate any command requires the movement of the pointer to the required position.

The PULL-DOWN menu consists of four selections:

1. The File Menu - This gives you the option of loading or saving your masterpiece, output to an Epson printer, load fills produced by the Pattern Designer or call up a directory of your files.

2. The Option Menu - This menu

gives you the choice of clearing the screen, selecting the movement of the pointer in steps, switching the filing system over to tape or disc as required, a copy facility, fast, medium or slow movement of the mouse pointer, a paint mode, which gives you a choice of colours using either of two pens, and a zoom option.

3. The Text Menu - This menu gives you the various text options available.

4. The Lines Menu - This gives you the choice of black, white or invert options as well as selection of pen 2 and 3 in the paint mode for your colour output.

MODE ICONS

There are eight mode icons available, and each has its individual purpose:-

1. The Pencil Mode - This is used, as you can imagine, for drawing single lines. By the use of Move, Execute or Cancel buttons on the mouse, accurate placement of lines is possible.

2. The Spray Gun Mode - This mode has many uses and is used generally to 'spray' a pattern onto the screen. Any of 12 spray sizes can be used simply by selecting the appropriate design.

3. The Rubber Mode - This mode is used to rub out any errors made. Any of the spray sizes may be used for the purpose.

4. The Paint Roller Mode - This is similar to the spray mode in operation and pattern selection.

5. The Fill Mode - This mode is used to fill a shape with any selected pattern or colour.

6. The Frame Box, Filled Box and Circle Mode - These modes are used to create boxes, either framed or filled, or framed circles. The rubber banding effect means that the size can be enlarged or reduced to suit your requirements.

7. The Text Mode - This mode in conjunction with the text menu, gives a choice of six styles of text.

8. The Pattern Window - This Window gives access to 32 various patterns, which can be used as fills or used with the spray or paint roller option. In addition, further patterns can be created using Pattern Designer.

HANDS ON EXPERIENCE

These comments are my feelings on the use of the mouse, given the limited use I have had to the present time.

As mentioned earlier, connecting the mouse up to the computer is quite straightforward. Once the program is loaded the disc is not accessed unless you are saving or loading your own files. Free memory of just over 29k should be sufficient for the most complex artwork the Amstrad can produce on the screen.

The mouse requires a clear desk space for its movement. The surface should not be too slippery, or there would not be sufficient friction between the ball and the desktop to operate successfully. A reasonable length of connecting cable is provided to get far enough away from the screen if required.

There are three buttons on the mouse. They are not labelled and the illustration in the manual has them identified incorrectly. The buttons each have a separate function. They are Move, Execute and Cancel. When first using the mouse it is hard to remember which button does what, but with experience this becomes second nature. However, a single or two button mouse could be more user friendly.

I was disappointed with the quality of the buttons. They seem very flimsy and indeed it was the non operation of one of these buttons which caused me to get a replacement mouse. As it stands, the plastic buttons can be easily removed and the small loose metal contact inside can then be misplaced or lost. The

manufacturers should take note of this and rectify the problems in future models.

The other problem I had was transferring the files on to disc. This has been mentioned before, so I will not dwell on it again, except to say that it should be rectified in future manuals.

Operation of the mouse is very simple and straightforward. The pull down menus, and pattern and icon selection are very easy to get used to and operate.

If you are a budding artist and have a steady hand, the pencil mode shouldn't be too much trouble. For those not so experienced, drawing accurate lines can present a problem. However, this soon improves with use, and good results can be achieved after a few tries.

The spray gun and paint roller modes are very useful when covering a large area, and 12 spray sizes are available to cover any situation.

The rubber mode is also easy to use, although you have to be very careful when 'rubbing out' in the smallest of corners (see comments on fill mode).

To draw boxes or circles is easy. Simply select the icon, move pointer to the required position and press Execute. This gives the center position. The size can then be rubber banded, (enlarged or reduced) to the required dimensions and by pressing the Move button the shape is drawn on the screen.

With the circle command, the initial shape is a framed square. The circle is drawn within the box frame at the press of the move button. Very handy if you want to know exactly where the circle is going to lie.

The text mode I found was somewhat restrictive. There are two styles, plain or italic, and these are selectable in either normal, bold or very bold printings, giving six styles in all. There is no provision for enlarging or reducing

the size. A few other styles and sizes would be a great advantage, but I suppose price and memory availability have something to do with this.

There are other programs coming available which will alleviate this problem, I hope.

Once you have done the outline, it is time to fill the various areas with a pattern or colour to give your masterpiece depth and character. The fill mode is easy to operate and is fast. In some shapes the fill has to be used a few times in the same area because of the 'shadow' effect you may have made with another shape.

A note of caution. Do not leave any gaps in your artwork, particularly in the line drawing (pencil mode). If even one pixel is left open, your fill will 'leak' into the adjacent area and you are in trouble. If this happens, pressing the Cancel button before moving on will 'un-fill' and give you a chance to plug the gap.

This is where the zoom facility is handy. When the zoom option is selected, about half the screen is changed to a 14 x 14 pixel box. A zoom window appears in the normal screen area and this window is represented on a pixel by pixel basis in the zoom area. Any gaps can then be picked up and corrected by moving the pointer to that position and pressing Execute.

The copy facility is also very handy. Any shape that needs to be repeated elsewhere can be copied and this saves a lot of time and effort.

Unfortunately there is no mirror or rotate feature, and these two options would, to my mind, be fairly essential for any drawing operation.

Three other basic shapes missing, in my opinion, are the ellipse, rectangle and triangle. These are very useful shapes to have and their inclusion could be justified to make this drawing program more

versatile.

The drawing screen for AMX Art, when printed, only covers approximately half an A4 sheet. This does seem a pity. If there was a screen scrolling command, a larger picture could be drawn to utilize a full A4 sheet. However, these extra facilities would necessitate the use of more memory and a greater price. As these are important considerations when producing a useful program, something had to be excluded.

The other two programs available for the mouse are Icon Designer and Pattern Designer. Up to the time of writing I have not tried these programs, so these are just basic comments.

The Icon Designer - This program gives the designer the ability to design up to 320 different icons in memory for use within your own programs. Once designed, they can be stored on a disc or tape file and used as required.

The Pattern Designer - AMX Art is supplied with 32 different patterns to be used on the screen. There is often the case when none of these patterns are suitable for your purpose.

This is where Pattern Designer comes in. This program gives the designer the opportunity of creating a further 32 patterns at any one time. These new patterns can then be saved to disc or tape and used as required in your design or drawing.

MANUAL
The accompanying 35 page manual is quite comprehensive and explains the use of the various operations well. The discrepancies mentioned earlier regarding program transfer to disc is however a black mark against it.

Explanation of the Art program is well covered, complete with sample pictures. From this the user can launch straight into creating a design with the minimum of fuss.

Explanation of the pattern Designer and Icon Designer leave a little bit to be desired, being only 3 and 4 pages long respectively. A bit more detail and examples would not go astray here. I can see the use of these programs to be a vital part in developing the mouse environment to its fullest extent.

Perhaps when I get some time to use these programs in the future, things will fall into place.

There is an eleven page technical section and appendix which deals with commands and their related syntax, with example programs. This gives the user the ability to use AMX Control in other programs.

FUTURE
More and more programs are now being developed to make use of the mouse environment, and I suppose the time will come when every computer will be supplied with a mouse as standard.

As an example, the new Amstrad IBM Compatible has a mouse and W I M P. I believe they are selling like hot cakes over in England.

CONCLUSION
Overall, a very good package. The construction of the mouse buttons need to be more secure, and the mistakes in the manual need to be cleared up.

Installation and operation is simple, and the drawing program can bring out the artist in even the most inexperienced of users.

Michael Toussaint is the President of the Southside Amstrad User Group in Queensland.

PCW Owners will be interested to know that a review of the Electric Studio Mouse is planned for next month.

TIP-OFFS

Continuing the lowdown on LocoScript, CP/M et al.

Mathematicians' delight

If you use your PCW to type mathematical formulae, you may just have been frustrated by the lack of symbols for square and cube. Here's how to get them:

```
(+Pitch17) (+SupeR)2
(-SupeR) (-Pitch)
```

and

```
(+Pitch17) (+SupeR)3
(-SupeR) (-Pitch)
```

They are a little cumbersome but can be made simple to use by saving them as LocoScript phrases, under S and C respectively. Then they are always available as "[PASTE]S" or "[PASTE]C". Because superscripted letters are half the height but with the same width as full size letters, they should be printed in pitch 17 to prevent them looking stretched.

$$a^2 \ x \ a^3 \ = \ a^5$$

An example of squares, cubes and other powers

If you like decimal points that look like decimal points and not full stops, then use SupeRscript full stops - (+SupeR). (-SupeR). Again, if you use it a lot, save it as a phrase.

Although the PCW can print most of the simple fractions (use the number keys on the top line, together with the [ALT] key), more complex fractions can also be got at for a little more effort. Put the numerator in superscript, and the denominator in subscript, and again use Pitch 17 to give the characters the correct look:

```
(+Pitch17) (+SupeR) x (-
SupeR)/
(+SuB) y (-SuB) (-Pitch)
```

Screen contrast

Often it is easier to see the screen, particularly on a sunny day, if it is in reverse video. There is no way of doing this for LocoScript, but you can do it for CP/M programs.

When you are running CP/M and faced with the familiar "A>" prompt, put in your CP/M master disc with the file PALETTE.COM on it and type

`PALLETE 10 [RETURN]`

Similarly, typing `PALETTE 01` returns you to normal green-on-black text screen. If you know how to customise discs with a PROFILE.SUB file, you might like to make up special discs for yourself. Leave one side of the disc normal, and on the other side have exactly the same files but include a PROFILE.SUB file with the reverse video command. Mark the side of the disc "Normal" and "Reverse Video" (or "Cloudy and Sunny"), then depending on your mood or the strength of the sun your programs can be run in either screen mode.

Economical addresses

As was pointed out a few months ago, using the TAB key really takes up a lot of disc space. When writing letters that require your address to be in the top right corner you should set up a layout in the TEMPLATE.STD document so that the left margin is as far across the page as you need.

Then just revert to the base layout after you've typed the address.
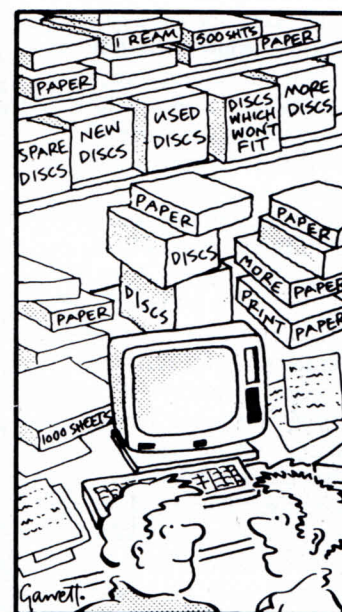
"AT LEAST NOW WE'VE GOT THE PCW WE WON'T BE SNOWED UNDER WITH ALL THAT PAPERWORK . . ."

Cracker of a tip

Here's advice that will be of interest to users of the spreadsheet program "The Cracker".

MAKING UP AN AUTOSTART DISC

As always, first find a blank formatted single density disc, suitable for use in drive A, and using PIP copy onto it J14CPM3.EMS, PIP.COM and SUBMIT.COM. Also copy from the Cracker disc the files CRACKER.OVR, CRACKER.COM and, if you need the help messages while running Cracker, CRACKER.HLP.

In order to create a file to instruct CP/M what is expected of it, put your system disc back in A and type BASIC RPED. Follow the instructions on the screen to create a file called PROFILE.SUB, and type into it the lines

```
PIP M:=A:*.OVR
CRACKER
```

Make sure you save this file on your autostart disc. Now whenever you reset the machine and insert this disc in drive A, the Cracker will start automatically.

PRINTER INSTRUCTIONS

The following instructions will allow you a much greater flexibility of form design within The Cracker. Select a text mode as normal and then use whichever of the following are best suited to your needs:-

[ALT]+0 [RETURN] - shrink print (132 columns possible)
[ALT]+R [RETURN] - return to normal number of columns
[ALT]+N [RETURN] - enlarge print
[ALT]+T [RETURN] - return to normal print size
[ALT]+P [RETURN] - snapshot of screen
[ALT]+Q [RETURN] - emphasised print

Using PIP to avoid LocoScript....

The LocoScript 'f3 Copy' and 'f4 Move' commands only handle one file at a time, so it gets a little tedious when, for example, you want to move the contents of an entire group to a new disc. However, you can use CP/M's command PIP to sort out LocoScript discs. The key point is that LocoScript and CP/M both use the same file and directory structure. CP/M has 16" user areas" which are intended to keep different people's files separate, but on single user machines like the PCW this is redundant and you normally only use area 0. Put your LocoScript disc in and type DIR - only the documents in group 0 are listed. If you type DIR [USER=ALL], you see the documents in all the groups being listed. LocoScript groups 0-7 (as they are called before you give them names) occupy user areas 0-7, whilst Limbo files are in areas 8-15 - the Limbo files for group X are in area 8 + X. So using your CP/M expertise you can transfer whole groups of LocoScript documents to a new disc using PIP. Suppose you want to move group 4 of one disc to group 1 of a new disc, because the old disc is too full. Note how the group numbers 1 and 4 are used in steps 2 and 3, so you can change them to the numbers you actually want to use.

1. Put your CP/M disc and type PIP [RETURN]
2. Put your old LocoScript disc in drive B and the new disc in drive A and type
B: [G1]=A:*.*[G4]
On single disc machines, do this in two parts via the M drive to avoid disc changes

Using A5 paper

If you want to print using A5 paper then you will have to alter the margins and page length to suit the new size. Start editing the TEMPLATE.STD that you will use, and press 'f7 Modes', select "Edit Header", and finally 'f7 Options' to get to the "Editing Header" screen. For a page done in Pitch 12 and Line Pitch 6, assuming 1 line headers and footers with a single line space between them and the document, the suggested page settings are as follows: To alter the margins, select "f1 Layout", and set the left and right margins to 22 and 77 respectively.Then press [EXIT] to get back to the previous screen, and press 'f7 Page Size'. Set the options as shown below.

Finally, before printing an A5 document out, go into the Printer Control State by pressing [PTR], and select 'f1 Options'. Move the cursor down to Form Length, and change it to 50.
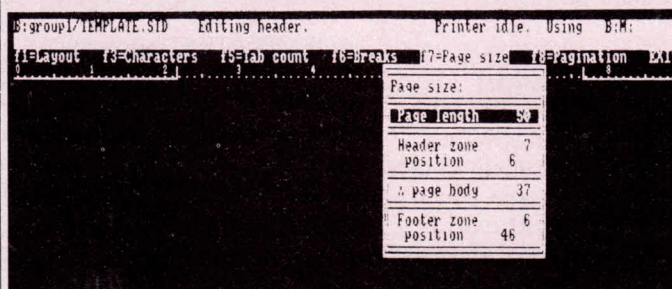
The page layout options set up for A5 paper

Margin settings

If you have ever tried setting up your own templates then you will no doubt have discovered by now that changing the pitch isn't enough - you need to change the margin settings as well.

This table shows suggested margin positions for the five pitch sizes on A4 paper. The settings give, as near as possible, a 20mm margin to left and right assuming Right Justification is on. If not, then the right hand margin can usually be a little wider.

Pitch	Left Margin	Right Margin
10	07	73
12	09	89
PS	09	89
15	11	110
17	13	127
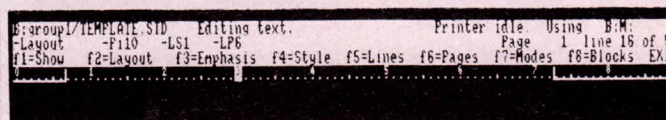
The base layout ruler for Pitch 10 text

for every file. Type [RETURN] to leave PIP.
3. If you want to delete the files from the old disc, type User 4
ERA *.*
4. If you want to keep the limbo files too, copy across group 12 on the old disc to group 9 on the new disc in the same way.

....and using Locoscript to avoid PIP

On the other hand, you may be a CP/M user who finds PIP just too horrible to contemplate. If you cannot figure out the CP/M commands to PIP files around, use LocoScript as a tool.

Do this by starting up LocoScript, then insert the disc which you wish to copy a file FROM, and press the f1 key to get the directory. Copy (f3) the documents into the M drive, then remove the disc and insert the disc to copy the files TO. Press f1 again, and then use Move (f4) to complete the procedure by transporting the copies from the M drive to the A drive again.

It might sound long winded but really it is very simple, and it has the advantage that you can see exactly what is going on and the size of the files being moved.

Jazzing up your screen

You've probably seen how LocoScript manages to underline characters on the screen, and print text in reverse video, and wondered how it is done. With a bit of trickery, you can add some spice to your boring screenfuls of text in just this way.

To underline some text, before you print it out, print the characters
CHR$(27) "r", and afterwards

Improved underlining

When it comes to underlining a heading, LocoScript leaves something to be desired. The line is squashed up against the word and looks rather untidy. All is not lost however - it is possible to obtain far more stylish underlined headings by altering the line spacing and using other characters for the line. Here is how it is done.

1. At the start of a new line set the line spacing (with [f5] to 1/2 and the line pitch to 8. You can't use proportional spacing, so if you are,

change to Pitch 12 for a similar effect.
2. Type in the required heading and press [RETURN]
3. Reset the line pitch and spacing to what you were using before.
4. Turn on full underlining (f3).
5. Turn off the codes display (f1) so that you can line up the columns accurately on the screen for the next stage.
6. Type spaces until the underline line is as long as the heading. (If you type underline characters,

although the screen looks OK they will print out as a broken line instead of continuous).
7. When you are happy, turn off underlining, press [RETURN] and carry on with your text. Remember to change back to proportional spacing if you want to.
To speed this up you could store the basic control commands in a phrase on your startup disc. Other underline effects can be obtained with the use of superscript and characters such as = or *.

CHR$ (27) "u" to turn underlining off
Similarly, for reverse video, print
CHR$ (27) "p" beforehand and
CHR$ (27) "q" afterwards.
As a final frill, the command PRINT CHR$ (7) causes the PCW to beep at you. One good idea is to put a beep command just before an INPUT statement, to remind users that they are expected to type something.

```
B:group1/HEADINGS.        Editing text.            Printer idle.  Using   B:
-Layout     -Fil2   -LS1   -LP6                            Page    1 line  1 of 37
f1=Show    f2=Layout   f3=Emphasis  f4=Style  f5=Lines  f6=Pages  f7=Modes  f8=Blocks  EXIT
   0........1.........2.........3.........4.........5.........6.........7.........8.........

      (+UL)This is the normal underlined heading(-UL)

      (+LSpace½)(+LPitch8)This is the improved underlined heading no. 1
      (+LSpace1)(+UL)_____(-UL)(-LPitch)

      (+LSpace½)This is heading no. 2
      (+LSpace1)(+SuB)===================(-SuB)

      (+LSpace½)This is heading no. 3
      (+LSpace1)(+SuB)*******************(-SuB)
```

This is the normal underlined heading

This is the improved underlined heading no. 1

This is heading no. 2
========================

This is heading no. 3
****
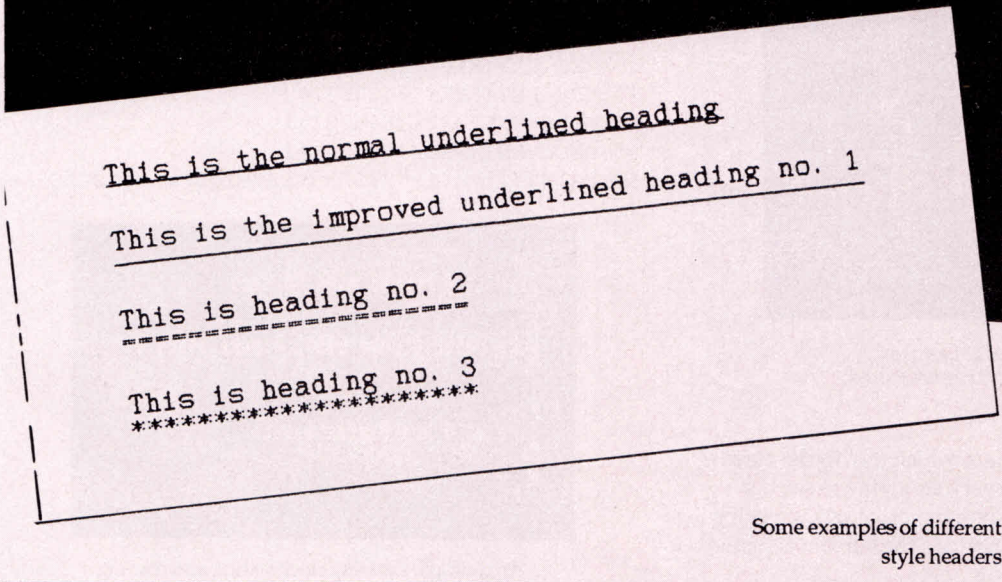
Some examples of different style headers

Garrett?

SELCET MODE
EDIT DOCMUENT
PIRNT DOCUMENT
CRAETE DCOUMENT
DIRECT PIRNTING
MAKE ASCII FLIE

PCW

" TRUST ME TO GET THE DYSLEXIC VERSION ... "

If you would like to contribute to these pages send your snippets to:

"Tip-Offs",
The Amstrad User, Suite 1,
245 Springvale Road,
Glen Waverley,
Victoria 3150.

Basic Bonanza

The Basic manual that Amstrad provides with the PCW machines is notable mainly for its total opacity. Some useful facts just aren't in there, and you chances of finding the ones that are printed are slightly less than the odds on Ronald Reagan joining the Communist Party. GEOFFREY CHILDS has written in with a hoard of invaluable tips to help programmers get the most from Mallard Basic. You will need to know the bare bones of Basic to be able to use these hints effectively....

Direct command editing

If you are writing a line in for direct execution and you make a typing mistake, then you probably curse and retype the whole thing. This gets pretty annoying if it's a long line, like a complex calculation.

However, you don't have to go back and start again. Type [ALT]+A and you have your command line back for editing with the arrow and delete keys.

Looking at your program

If you are interested to find out how Mallard Basic works behind the scenes, you can see how it stores the text of your program. Using the PRINT and PEEK commands, take a look at the area of memory around 31382, and you will see part of your program stored there. The special Basic words like PRINT are not stored letter by letter, but you'll certainly see any characters you've typed in between string quotes appearing.

If you know how to use it, you can modify your own program by the back door, using POKE to alter the lines directly. But be warned, ill-advised use of this can cause the PCW to crash.

```
list
10 a$="Zaphod Beeblebrox"
20 PRINT a$
Ok
for n=31382 to 31420:?chr$(peek(n));:next

éï"Zaphod Beeblebrox"      'é

Ok
for n=31382 to 31420:?peek(n),:next
29      0     10     0     3     0
0     225    236    34    90    97
112    104    111   100    32    66
101    101     98   108   101    98
114    111    120    34     0    10
0      20      0    179     3     0
0      225     0
Ok
```

Two simple lines of Basic text,
and look at the way they are stored.

Cursory commands

If you have written a Basic program which moves the cursor around the screen a lot, it can be very annoying to see the wretched cursor bobbing up all over the place and wrecking your beautiful tidy screen. You can turn the cursor off by the command PRINT CHR$(27)"f".

When the program ends, you will need to turn the cursor back on again (have you ever tried editing without a cursor?), which you do by PRINT CHR$(27)"e".

Altering the TAB command

When you use the TAB command in Basic, the cursor moves to the column you specify and pads the previous columns with blanks. It would be nice to be able to use some character other than blank as the filler.

There is a way to do this in Mallard. Try typing
POKE 24348,42
PRINT TAB(50)
and you will see the effect. For the more technically minded, 42 is the ASCII code for "*".

Probably the most useful filler character is the full stop, for which the ASCII code is 46, so type that instead of 42 in the example. You can use any character you like, and the codes are listed on pages 113 to 118 of the PCW CP/M manual.

Sending text to the printer

Have you ever written a program that normally prints to the screen, but that might need hard copy on occasions? The simplest way to achieve this is by changing PRINT to LPRINT. This could mean some hard work editing if you have a lot of lines. Instead you can do it by typing
POKE 18527,90
and from then on all PRINTs will appear on the printer not the screen.

You can reset this to normal by
POKE 18527,100

Telling the time

The PCW has a clock inside, although it counts the seconds in a rather eccentric way. The simplest way to explain how it can be used is to show a simple Basic program which reads the clock.

As you will see the essential information is stored in three bytes, numbered 64502, 64503 and 64504. Not only can you read these, but you can also set them by POKE-ing them with 0 so you can "zero" your clock.

```
10  DEF FNT(X)+X-INT(X/16)*6
20  HRS=FNT(PEEK(64502!))
30  MINS=FNT(PEEK(64503!))
40  SECS=FNT(PEEK(64504!))
50  PRINT"Time is"HRS"hours"MINS"mins"SECS"secs"
```

```
run
Time is 0 hrs 32 mins 56 secs
Ok

poke 64502,0:poke 64503,0:poke 64504,0
Ok

run
Time is 0 hrs 0 mins 5 secs
Ok
```

An example showing clock setting and reading

GRAPHICS ON THE PCW

How to add Graphics to the Mallard Basic on your PCW

by Arnold Goldman

Yes, it is possible to produce excellent graphics on the PCW computers. How else could the commercial software houses produce such packages as DR DRAW or DR GRAPH? The beauty of it is that you do not need to buy anything to obtain the kind of results shown in Figs. 1 and 2. Figure 2 is part of a program that I have developed from the rather crude "SUPER" program in the November Amstrad User. To achieve this conversion to graphics capability requires a little preparation, so in this first session I shall take you through these preparatory steps, and provide a couple of demonstrations to whet your appetite. The main program to produce a rather "commercial" looking package will be in a later issue.

The source of my information on how to introduce GSX graphics to the PCW is "The Amstrad Computer User". A series of 3 articles appeared in issues Nos. 18, 19, and 20 which are still available from Strategy Publications (see page 64). Because these articles covered the subject in some depth, if not clarity, I shall only introduce those parts that I have used in this demonstration program and the subsequent "commercial looking" SUPER program, and a few instructions that are only used in printing hardcopy on the printer. This latter ability may be the topic of a later article. I believe there is a book, on the AMSTRAD and CP/M, which covers all that you could wish to know about GSX graphics, but references to it are not very clear so we shall have to wait until the editor acquires one for review.

Right, let's get started.

First prepare a blank disc and load the following files onto it from whatever discs you have them stored away on:-

BASIC.COM, GSX,SYS, GENGRAF.COM, ASSIGN.SYS, DDFXHRS,PRL, DDSCREEN.PRL, RPED.BAS, RPED.SUB, SUBMIT.COM

Now, because I wish to show how you can prepare your program to be user friendly, we will set out to prepare a SUBMIT file which will enable you to load GSX, BASIC, and your program in one step. As you are now in CP/M with the A> prompt, enter SUBMIT RPED to call up the file editor. Follow the on screen instructions and name the new file SUPER.SUB, and enter the following statement:-

    BASIC GSXPREP

Exit from RPED, and the file SUPER.SUB will be stored on your disc. The reason for doing it at this stage may seem obscure, but I found it impossible to load RPED after I had

carried out the graphics conversion of the BASIC.COM file. You now need to check and/or edit the ASSIGN.SYS file using RPED in the way described above. The ASSIGN.SYS file carries the names of the device driver files you will be using later on. The two lines in ASSIGN.SYS should be:-

    21 @:DDFXHRS
    01 @:DDSCREEN

You may later add other drivers as you become more adventurous and obtain a digital plotter or other device. The ASSIGN.SYS file that is supplied with the PCW8256 has four lines in it. Delete the unwanted lines at this stage. The original file will still be there on your master disc if needed in the future.

Well, now the two files have been edited and stored on disc, we can get on with the graphics conversion steps.

Type GENGRAF BASIC and press RETURN. If all the files listed above are available on your disc, the computer will run for a few seconds and display some messages before returning to the CP/M prompt. The version of basic on your disc has now been converted to GSX BASIC and if you now enter BASIC, in the usual way, you will see two copyright messages instead of the usual one. At this stage you may like to save a copy of the GSX BASIC on another disc to avoid this procedure, just in case anything causes this disc to become unserviceable. The next step is to type in the program titled GSXPREP.BAS . This is the name used by Locomotive Software who supplied it to the author of the articles mentioned above. I read in another magazine that GSXPREP.BAS may be on the system disc supplied with some PCW computers or with Mallard BASIC if purchased separately. The listing for this is presented below. This must be saved and

must be loaded and run at the start of each session when you wish to use your graphics programs. The function of GSXPREP is to POKE some machine code into memory at the address where the GSX BASIC can find it. Don't ask me what each line means or does. It is increasingly common these days to accept that you

don't need to know how it works, as long as you know how to work it. Run your newly typed GSXPREP program which should end up by taking you back to CP/M. I have deliberately made GSXPREP return to CP/M. You could replace the last line with NEW or, when there is another program to follow, RUN "program". Now, after loading BASIC again, you can start to write your first graphics program.

The main program, that should be presented next month,

Which quadrant do you want star drawn in? Enter 1,2,3,or 4

Drive is A:
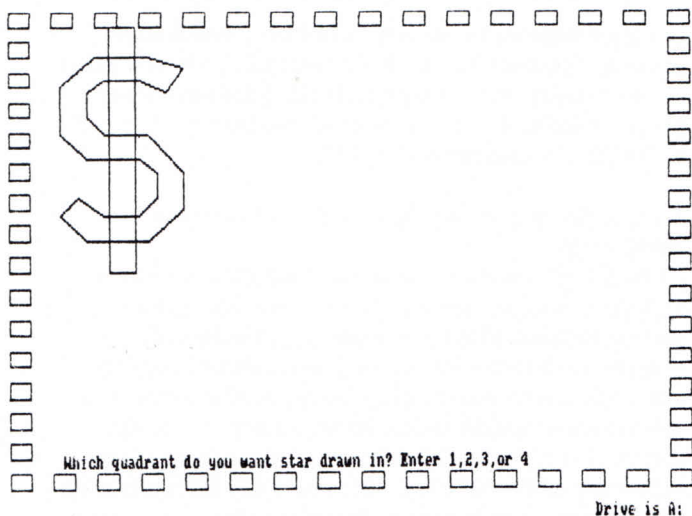
FIGURE 1

is rather long, but uses the subroutines listed in this short demonstration program. So use the same line numbers as shown, and next month's effort will be somewhat reduced. I should explain a little about GSX, and what is required to make use of it. I suspect that there may be more to it than was explained in the ACU magazine, but, as I will not be using a tenth of the capabilities or functions mentioned, I shall not even contemplate what lies beyond my limited knowledge. The inputs and outputs associated with GSX are in the form of five arrays:-

contrl, ptsin, ptsout, intin, intout. (all integers)

The contrl array has 6 variables, hence the DIM contrl(6), and are used to tell GSX what to expect. Because much use is made of these six control parameters I shall explain something about them.

contrl(1) is the variable that tells GSX what type of action is to take place, and there are 25 actions available with the device drivers supplied. I have included 8 of them in the demonstration listing but only 5 of them are used. The other 3 may be used in a later article on outputting your pictures to the printer. First things first through, and you need to

FIGURE 2

Drive is A:

draw the pictures before worrying about how to print them. The June 1986 ACU magazine lists all the actions.

contrl(2) tells GSX the number of points to look for in the ptsin array.

contrl(4) is the length of any text to be printed

contrl(5) has the information back from the device about the length of the intout array.

contrl(6) is an identifier generally used with a particular contrl(1) code to carry out a whole list of operations, mainly related to the cursor.

Now some brief explanations of the other arrays in GSX.

ptsin contains the information telling GSX how many points are coming, and you need to work this out or have the program calculate it for you. I have limited the ptsin array to 80 in the DIM statement.

ptsout contains information from the device related to co-ordinates of points. I have not made use of this yet so you can ignore it for now.

intin contains a list of instructions on such things as which

FIGURE 3

device to send the information to, type of line, type of fill, etc, and has 10 parameters.

intout is an array containing 45 parameters about the device being questioned. As I have not used this facility in this article I shall say no more at this time.

Before you start typing in the demonstration program, which is really part of a program I have called SUPER and which will be listed in next month's offering, make sure you have typed in the GSXPREP listing, SAVEd it, and RUN it without error. Now you can type in the section of the SUPER program listed below and try it out.

All this may seem rather excessive to draw a few lines, but, once you have the basis of the program entered, you can use it as the basis of any other graphics program you may wish to write. Now I had better explain how the program uses GSX to produce graphics.

Line 110 is part of the next stage of the program which I have made use of to print an instruction later on in this

program.

Lines 230 to 260 are some typing saving definitions to enable simple instructions later on to clear screen, restore the cursor, and locate the cursor. These are not part of GSX graphics and can be used in other programs.

Lines 280 to 300 set up all the variables as integers (DEFINT a-z), set the dimensions of the array variables, and tell the program where GSXPREP has stored gsx.

Lines 310 and 320 include the first GSX call to open the workstation for graphics, and the RESTOREation of the data pointer to the first data point. The subroutine 3010 includes the intin array providing the parameters mentioned earlier. These are provided in a DATA statement but could just as well be listed separately for more flexibility.

You may choose to type in at this stage all the lines from 3000 to 3510 and SAVE them under some general title of GRAPHICS, as these lines plus 110 to 320 can form the basis for many of your graphics programs. Now onto the fiddly bit of producing a picture on the screen.

GSX regards the screen rather as a piece of graph paper with a grid of 32000 by 32000 squares. This is all right if you have a high resolution plotter, but with the AMSTRAD PCW monitor you are restricted to a grid of 720 by 248 pixels, so there is little point in using the very small squares to define your picture. I have used a grid of 320 by 320 to make things a little easier on the eyes and fingers. The first exercise in the demonstration is to draw a large $, Line 410 has all the points on the S except the start point. The start point is on line 350. A better way of defining pictures is possible but this way does what I require in this program. One can go on for ever improving programs. It is sometimes difficult to know when to stop. In line 390 I have converted the data from line 410 into numbers in the range 0 to 32000 by multiplying by 100. I have also added 3000 onto try. This is to move the $ up the screen. Try changing this number, or removing it. To move the whole S across the screen, add numbers to trx in the same way. However, if you do this you will need to modify line 350, so perhaps for now you should not fiddle too much. The subroutine at line 3320 does the line drawing. You will note that contrl(1)=6, which is the opcode in GSX for drawing a line.

Lines 420 and 43 are all that is required to draw a box, once you have the subroutines in place. Variables 11x and 11y are the lower left x and y co-ordinates and trx and try are the top right x and y co-ordinates. Simple isn't it? The subroutine at 3360 is similar to the line drawing routine, but now contrl(1)=11.

Well this is so easy, let's draw boxes all round the screen. Lines 500 to 620 contain four FOR - NEXT loops which draw small boxes around the border of the screen. This gives some idea of the speed of the graphics, which isn't terribly fast, but speed isn't everything and the quality is good.

If you type in lines 2800 to 2840, which are there to end the program in a gentle manner, you can run the program at each of the above stages to check that you are going along the right path, and to provide some encouragement if you

are. If for some reason you crash, and the cursor block is missing, type PRINT cursor$ and press RETURN, and it will be restored to you, but only if lines 230 to 250 have been programmed in. Otherwise, you will need to type in PRINT CHR$(27) +"e" and press RETURN.

Well, so far so good, perhaps, so let's get into some tricky stuff.

One thing I complained about with DR DRAW was the inability to rotate a picture, or at least an element of a picture. In lines 630 to 850n I have a small section of program to draw a star in one of four quadrants using the centre of the screen as the axis of rotation. Also included in this section is the GSX facility for positioning text on the screen. This is in lines 630 and 640 and subsequently in the subroutine at line 3080. You will note, in this subroutine, the use of the program to provide the value to be assigned to contrl(4). For text the intin array requires each character to be assigned to a separate variable in the array. Hence the FOR - NEXT loop from 3110 to 3130.

Back to the rotation instructions again, and you will see, in lines 700 to 730, the different values assigned to xaxis and yaxis. These values are used in line 740 to establish the first point location, and the lower left values of x and y co-ordinates should be used here to replace the 20000 in both trx and try expressions if you try another picture instead of the star.

Lines 760 to 800 read in the data for the star and convert it to the quadrant selected. This is a fairly simple procedure and assumes that all mirror images are about axes through the centre of the screen. To select another rotation axis, change the values in lines 700 to 730, but be careful, you could reflect your image off the screen.

Lines 81 to 850 contain the data for the star, and some lines to clear screen and print a statement at co-ordinates x=2500, y=28000 .

Lines 1020 to 1410 are used in next month's program, but are included here to give you a start on next month, and to show how easy it is to produce the chart shown in Fig.3. The listing to produce the contents of the chart will be next month's offering. In the meantime, this should provide sufficient introduction for those wishing to write their own graphics programs. For those with a sense of adventure, who would like to try putting the picture onto the printer, the change to make is in the DATA in line 3040. The first number should be changed from 1 to 21 and your picture will be directed to the printer instead of the screen. A word of warning is appropriate here. Make sure that all interaction with the program is completed before the call to GSX is made.

```
100 'GSXPREP.BAS
110 '
120 'Courtesy of Locomotive Software
130 '
140 gsx%=&H30
150 POKE gsx%+0,&H50  'ld d,b          ;copy BC to DE
160 POKE gsx%+1,&H59  'ld e,c
170 POKE gsx%+2,&HE   'ld c,115         ;GSX  function call
180 POKE gsx%+3,115
190 POKE gsx%+4,&HC3  'jp &h0005        ;Jump to the BDOS
200 POKE gsx%+5,&H5
210 POKE gsx%+6,&H0
220 SYSTEM
```

```
10 REM * * SUPER.BAS :- A graphic progra
m for the PCW by A.Goldman Dec.1986 * *
110 H7$="$" + SPACE$(25) + "Press space
bar to continue." + SPACE$(25) + "$"
230 esc$ = CHR$(27)
240 cls$=esc$ + "E"
250 cursor$ = esc$ + "e"
260 comment$ = esc$ + "Y"
280 DEFINT a-z
290 DIM contrl(6), ptsin(80), ptsout(12)
, intin(80), intout(45)
300 gsx=&H30
310 GOSUB 3010 'initialise GSX and open
workstation
320 RESTORE
330 paid!=0
340 REM * * * * Draw $ * * * *
350 trx=2400: try=18600
360 FOR sline=1 TO 24
370 llx=trx: lly=try
380 READ tx,ty
390 trx=tx*100: try=ty*100+3000: GOSUB 3
320  'Draw a line
400 NEXT sline
410 DATA 36,140,64,140,80,160,80,184,64,
208,44,208,36,220,36,236,44,244,60,244,7
2,236,80,252,64,260,40,260,24,240,24,208
,36,192,60,192,68,184,68,168,60,156,44,1
56,32,168,24,156
420 llx=4600:lly=15000:trx=5800:try=3100
0
430 GOSUB 3360  '  Draw a box
500 REM * * * Draw boxes * * * *
510 FOR b=1000 TO 29000 STEP 2000
520 llx=0:lly =b: trx=1000: try=b+1000:
GOSUB 3360
530 NEXT b
540 FOR c=0 TO 30000 STEP 2000
550 llx=c: lly =31000: trx=c+1000: try=3
2000: GOSUB 3360
560 NEXT c
570 FOR d=30000 TO 2000 STEP -2000
580 llx=30000:lly =d-1000: trx=31000: tr
y=d: GOSUB 3360
590 NEXT d
600 FOR e=31000 TO 1000 STEP -2000
610 llx=e-1000:lly=1000: trx=e: try=2000
: GOSUB 3360
620 NEXT e
630 title$="Which quadrant do you want s
tar drawn in? Enter 1,2,3, or 4"
640 x=2500: y=2500: GOSUB 3080
650 quadrant$=INKEY$
660 IF quadrant$="" GOTO 650
670 q=VAL(quadrant$)
680 IF q>4 GOTO 830
690 ON q GOTO 700,710,720,730
700 xaxis=0:yaxis=0:GOTO 740
710 xaxis=160:yaxis=0:GOTO 740
720 xaxis=160:yaxis=160:GOTO 740
730 xaxis=0:yaxis=160:GOTO 740
740 trx=ABS(xaxis*100 + (xaxis*100-20000
)): try=ABS(yaxis*100 + (yaxis*100 - 200
00))
750 RESTORE 840
760 FOR star =1 TO 5
770 READ tx,ty
780 tx=ABS(xaxis + (xaxis-tx)): ty=ABS(y
axis +(yaxis-ty))
790 llx=trx:lly=try:trx=tx*100:try=ty*10
0: GOSUB 3310
800 NEXT star
810 title$="Press space bar to clear scr
een"
```

```
820 x=2500: y=28000: GOSUB 3080
830 WHILE INKEY$="": WEND
840 DATA 240,240,200,240,240,200,220,260
,200,200
850 PRINT cls$
1020 PRINT comment$;CHR$(32+26);CHR$(32+
5);H7$
1050 WHILE INKEY$="": WEND
1060 PRINT cls$
1350 FOR box= 1 TO 11
1360 READ llx,lly,trx,try
1370 DATA 1000,28000,7000,31000,7000,280
00,13000,31000,13000,28000,19000,31000,1
9000,28000,25000,31000,25000,28000,31000
,31000
1380 DATA 1000,25000,7000,28000,7000,250
00,15000,28000,15000,25000,24000,28000,2
4000,25000,31000,28000
1390 DATA 1000,5000,31000,25000,1000,100
0,31000,5000
1400 GOSUB 3360
1410 NEXT box
2800 title$="Press SPACE BAR to clear sc
reen": x=2000: y=2000
2810 GOSUB 3090
2820 WHILE INKEY$="": WEND
2830 PRINT cls$: GOSUB 3280
2840 END
3000 REM * * * Open workstation subrou
tine * * * *
3010 contrl(1)=1: contrl(2)=0: contrl(4)
=10
3020 RESTORE 3040: FOR i=1 TO 10: READ i
ntin(i): NEXT
3030 GOTO 3060
3040 DATA 1,1,1,1,1,1,1,0,0,1
3050 REM * * * * GSX call subroutine * *
* *
3060 CALL gsx(gsx,gsx,contrl(1),intin(1)
,ptsin(1),intout(1),ptsout(1))
3070 RETURN
3080 REM * * * * Print text at a locatio
n subroutine * * * *
3090 contrl(1)=8: contrl(2)=1: contrl(4)
=LEN(title$)
3100 ptsin(1)=x: ptsin(2)=y
3110 FOR a=1 TO LEN(title$)
3120 intin(a) = ASC(MID$(title$,a,1))
3130 NEXT a
3140 GOSUB 3060
3150 RETURN
3160 REM * * * * Preparing for comment s
ubroutine * * * *
3170 PRINT cursor$+comment$;CHR$(32+27);
CHR$(32+5);
3180 PRINT esc$+"K";
3190 RETURN
3200 REM * * * Preparing for input sub
routine * * * *
3210 PRINT cursor$+comment$;CHR$(32+28);
CHR$(32+5);
3220 PRINT esc$+"K";
3230 RETURN
3280 REM * * * Close workstation subro
utine * * * *
3290 contrl(1)=2: contrl(2)=0: contrl(4)
=0
3300 GOTO 3060
3310 REM * * * Draw line subroutine *
* * *
3320 contrl(1)=6: contrl(2)=2: contrl(6)
=1
3330 ptsin(1)=llx: ptsin(2)=lly: ptsin(3
)=trx: ptsin(4)=try
3340 GOSUB 3060: RETURN
3350 REM * * * Drawing box subroutine
* * * *
3360 contrl(1)=11: contrl(2)=2: contrl(6
)=1
3370 ptsin(1)=llx: ptsin(2)=lly: ptsin(3
)=trx: ptsin(4)=try
3380 GOSUB 3060
3390 RETURN
3400 REM * * * * Set fill pattern subrou
tine * * * *
3410 contrl(1)=24: intin(1)= fill
3420 GOSUB 3430: RETURN
3430 REM * * * * Call GSX with one param
eter only * * * *
3440 contrl(2)=0: contrl(4)=1: GOSUB 306
0
3450 RETURN
3460 REM * * * * Set text height subrout
ine * * * *
3470 contrl(1)=12: contrl(2)=1: ptsin(1)
=0: ptsin(2)=height
3480 GOSUB 3060: RETURN
3490 REM * * * * Set text direction subr
outine * * * *
3500 contrl(1)=13: intin(1)=degree*10
3510 GOSUB 3430: RETURN
```

LOCOSCRIPT'S LAYOUTS

In which Philip Last explains how to keep tabs on LocoScript's various layout features.

When preparing any document, from a simple letter to the manuscript for a book, knowing how to lay out the page in a way that will catch the reader's eye is an essential skill. The art of making someone want to read a paragraph by its look can mean the difference between the Booker prize and a rejection slip.

LocoScript has a surprisingly large variety of commands to help you lay out your documents in different ways. This month we take a look at how to get the measure of rulers, tabs and the dreaded layouts - why, when, where and how to use them.

USING LAYOUTS

The basic elements of laying out pages are tab stops, as used on simple typewriters. To set and alter these, you need to be able to create and edit LAYOUTS. Other features that layouts give you control over are the positions of the left and right margins, and whether or not the text is "justified" - each line expanded so that it is aligned to the right hand margin.

First of all, here's a whistle-stop tour of the kind of things you can achieve with different layouts, and tabs in particular.

LocoScript offers 4 different types of Tab Stop: Tab, Right Tab, Centre Tab and Decimal Tab. Each has a different effect upon the text. With **Tabs**, text will be left justified to the tab position; a **Right Tab** will right justify text to the tab position; a **Centre Tab** will centre text about the tab position; with **Decimal Tabs**, the first full stop in text or decimal point in a column of figures is positioned at the tab.

To position text at a Tab Stop use the [TAB] key. The cursor will move to the first Tab Stop. Any text then entered will start from that position. If you want to move to the next Tab Stop, simply press [TAB] again, just like on a typewriter.

The effect different Tab Stops have on columns of figures.
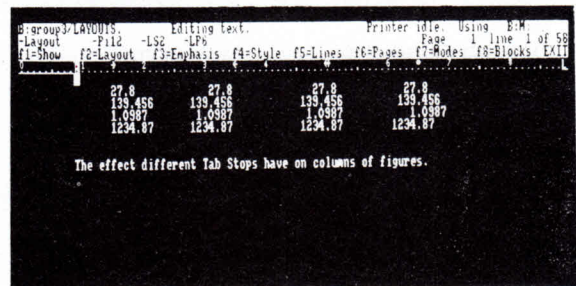
The positioning of text at a Tab Stop lasts only until the end of the line. If the text continues past the line end, the new line will start at the left margin. To allow a whole paragraph to be positioned at a Tab Stop, LocoScript has another type of Tab, the Indent Tab.

To get this press [ALT] and [TAB] - ie. hold down [ALT] and then press [TAB] at the same time. In effect, this moves the left margin to the Tab Stop until the next time you press the [RETURN] key, when it reverts it to its old position.
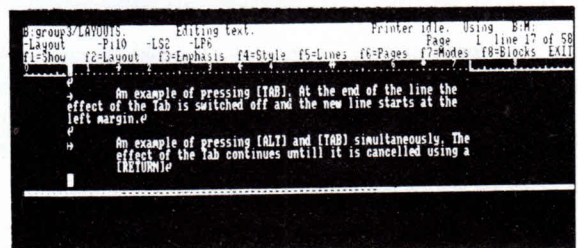
One fine point about using Indent Tabs is that you can't use the more complex Tab Stops (Right Tab, Centre Tab and Decimal Tab) while an Indent Tab is in force. If you try to, the effect will be as though you had used an ordinary Tab instead.

Using an Indent Tab is a useful way of highlighting a section of text. Another way is to alter the margin settings. Pulling in the left and right margins will centre the text and make it stand out from the rest of the document. Changing the Pitch as well as turning Italics or justification on or off can all make text stand out.

Example of using different layouts in a letter

A NEW LAYOUT

Here's a step by step look at how to actually go about creating a new layout. Before starting, try to decide exactly what you want to achieve. If you want to insert Tab Stops to lay out columns of figures then count how many characters are likely to be in each column and how far apart they will be spaced. If there are a lot of columns, can you get them all in? You may need to increase the character Pitch (ie. use smaller text). Do you want to highlight areas of text by bringing the margins in or just by indenting the paragraph?

1. Step 1 is to press [f2] and up will pop the *Document layout* menu. The menu is divided into two parts, the top section, labelled Insert Layout. The 'brand New layout' option will be highlighted and this is the one to select by pressing [ENTER]

2. The top three lines of the screen (the information lines) will change. The lines that concern us are the middle line and the ruler line below it. The middle line displays the current settings for Pitch, Line Space, Line Pitch, Italics and Justification. Pitch is highlighted and can be changed by using the [+] and [-] keys. When the Pitch is set, simply move along to the next option using the cursor right key.

LocoScript assigns each new layout a number, which it is known by from then on. This number is shown on

the top line of the *Editing layout* screen - for instance, it's '3' in the example.

3. All the options on the middle line can be changed using the [+] or [-] keys. When you have set Line Space, move to the Line Pitch, Italics and Justification until all the options are set. If you want to change any of them, go back using the cursor left key. When you've finished move down to the ruler line with the cursor down key.

4. The cursor highlights the position of the left margin. If you want to change this use the cursor left and right keys until the cursor is positioned where you want it. Press [f] and the left margin will move to the cursor position. Do the same with the right margin but press [f2] to position it. If you attempt to put the left margin the wrong side of the right margin the PCW will beep in frustration.

5. Tab Stops are inserted by moving the cursor to the position you want them and by pressing [f3] (Tab), [f4] (Right Tab), [f5] (Centre Tab) or [f6] (Decimal Tab) depending on what type of Tab Stop you want. If you put a Tab in the wrong position, centre the cursor over it and press the [-] key. Unless you've altered the base layout (see later), you won't be able to insert more than 10 Tab Stops.

6. When you've finished making all the changes, press [EXIT] to return to the Editing text screen. The new layout, with a carriage return, will be inserted in the text. The information lines at the top of the screen will display the layout number and Pitch, Line Space and Line Pitch settings. The ruler line will change to that set up under the new layout.

If you want another layout, repeat the procedure. You can't get more than 5 layouts without altering the base layout.

You can return at any time to the base layout by highlighting that option on the Layouts menu and pressing [ENTER]. Similarly, once you've created a layout you can reuse it later on by highlighting the 'layout??' option on the Layout menu, typing the number of the layout in question and pressing [ENTER].

EDITING AN EXISTING LAYOUT

If you create a layout and then realise later on that you have perhaps put the Tabs in the wrong places, all is not lost. Another option on the 'f2 Document layout' menus is 'Edit layout' - if you're currently using the base layout then the menu will have only one option, Layout??.. If you already have a layout in place then a further option, Current layout, will be offered. Highlight the one you want. If it's the current layout, press [ENTER], if not then first enter the number of the layout you want to change before pressing [ENTER].

Once in the layout editing mode, changes can be made in exactly the same way as described in 'A New Layout'. The main difference is that the layout won't be inserted when you exit back to the Editing text screen. To do that you must select the option, Layout??, from the top half of the layouts menu. Be
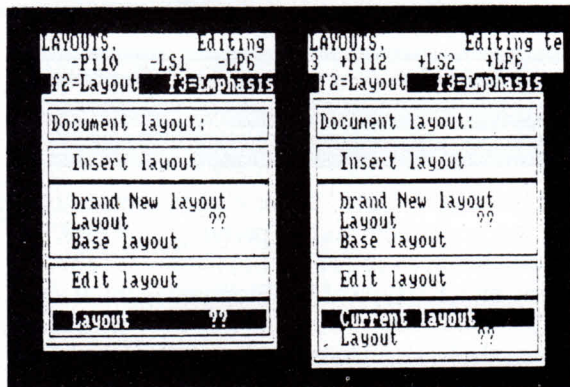
careful when editing a layout that you have already used in your text. Any changes to the layout will take place throughout the document where that layout has been used.

BASE LAYOUTS

So far we've seen how to use ordinary layouts to do simple things like defining tabs across the page. However, there is a special kind of layout called the Base Layout which has an important role in LocoScript.

When you first create a new document (using the C key from the disc management menu) and you start typing text, a particular Layout is being used by default without you having specifically set one up. This is known as the Base Layout, and is defined in the TEMPLATE.STD file that is in the current group.

The base Layout has certain special effects. Firstly, it determines the width of the lines on the printed page. The distance between the left and right margins gives the number of characters that will be printed on the line, using the character size (the "pitch") which is defined in the Base Layout itself.

For example, looking at the screen picture below, the left margin is set at 10 and the right margin at 88. This means that there are 78 characters per line, and the text is being printed in 12 pitch - ie. 12 characters per inch, so each character takes up 1/12". Therefore, the line length is 6".

Now this doesn't sound very surprising, but the importance of the settings in the Base Layout becomes apparent when you change print size. LocoScript will always keep the line length to 6" from now on, with these margin settings, no matter what the pitch used is. Consider changing the pitch to double spaced 10 pitch (using the 'f4 Style' option): this allows you to use five characters per inch.
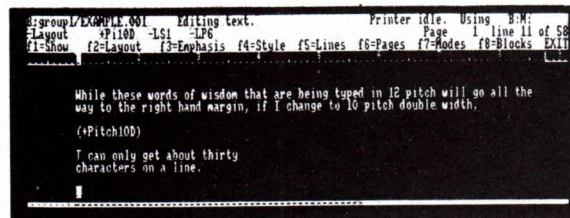
Therefore, on the 6" line you will get 30 characters. This is eminently sensible since most pieces of paper are the same width all the way down the sheet, but it is worth understanding how LocoScript judges these line lengths otherwise you will be surprised and puzzled when your line on the screen appears to end after 30 characters even though the right margin apparently allows 88.

The other important effect the header has is to establish the style that headers and footers will appear in, if you are using them. You will probably have noticed that if you are printing in bold text or some other effect and your text runs across a page break, the header at the top of the next page is not in bold. Instead, the options defined in the Base Layout are used.

EDITING THE BASE LAYOUT

It only usually makes sense to edit the Base Layout when you are creating a new TEMPLATE.STD file. In this case, the changes you make will also be used in all files created from that template; otherwise it is a lot faster just to insert a whole new layout.

To get to the Base Layout, press [f7] 'Modes' while editing a file, and select 'Edit Header'. Press [f7] again, then [f] on the new screen, and you are now

editing the base layout. The screen you see is exactly the same as for editing any ordinary layout.

When you have finished editing the Base Layout, keep pressing [EXIT], and [ENTER] whenever a menu pops up asking you to confirm that you really mean it, until you end up back in the editing text screen.

GETTING MORE LAYOUTS

As we have seen, LocoScript normally restricts you to a maximum of 10 tab stops and 5 layouts. You can increase the number available to you if need be: press [f7] and select Edit Header, then pressing [f7] again will take you into Editing Header mode.
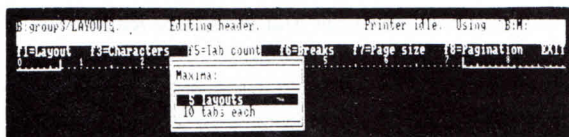
Select 'f5 Tab Count' and you will be presented with a menu containing both Tab Counts and Layouts. Highlight the option you want and type a number. Press [ENTER] to register the change. Both can be set to a maximum of 99 although doing this will add 10k to the length of the document.

To return to the Editing Text screen press [EXIT], [ENTER],[EXIT] and [ENTER] in that order.

More on Indent Tabs
You can use the Indent Tab even if you have no Tab stops set up. If you insert an Indent Tab in the text, LocoScript will start the next line at the tabs position and continue doing so until you press [RETURN].

Short Cuts
You may find some layouts to be so useful you would like to have them available all the time. If you set up the layout in Template.Std then every time you create a document in that group, the layout will be there ready for you to use. Once set up, layouts can be inserted without using the layouts menu. Press [+]LT followed by the layout number you want then press [ENTER] & [RETURN]. If you want to return to the base layout, press [-]LT.

GETTING PERSONAL

A review of QMAIL

A mailmerger is a program to produce bulk mailshots from an address list and a form letter, in true Readers' Digest style.

Qmail is a newcomer to the scene, aimed specifically at LocoScript users who have a complex mailing list that needs sorting and selecting before use. This would be useful, for example, where you have a list of suppliers of different products and want to write only to those who make stuffed parrots.

Setting up your mailing list

Qmail's real strength is that the database it uses for addresses is specially designed for mailmerge operation. It is set up in advance with the correct slots for names and addresses, and doesn't get carried away with features you don't need.

Aside from the name and address, there is room for up to 5 "user defined" slots per name. These might contain the balance outstanding on a customer's account, or the phone number, or just general notes.

Finally, and most importantly, you can define "attributes" for a person. Each name can be tagged with up to 15 or so labels from a range of 260 (A0 to Z9), which can stand for anything you like. Suppose you are trying to manage an advertising agency, and you want to categorise companies by what they produce. You might number stuffed parrots as "P0", and stuffed gerbils "G0". Then you can address letters to manufacturers of either one specifically, or you could do a general stuffed animal mailshot and produce a print run covering both parrot and gerbil stuffers.

One nice touch is that as you enter names into the mailing list they are automatically sorted into alphabetical order. Qmail seems to know how names are written, so it will correctly sort by surname entries like "Mr. A. Aardvark" and "Len Zapalowski".

Writing the form letter

Qmail only reads letters prepared with LocoScript, although inevitably it doesn't actually run from within LocoScript. You have to start up CP/M, run Qmail, and restart LocoScript if you need to make any corrections.

Almost all LocoScript print styles can be used when Qmail processes a document, and also the centring and justification commands work. Qmail has what is called "automatic rejustification", which means that if it inserts special text into a letter that varies in length from person to person, then it can manage to reformat the paragraph so there are no untidy gaps or short lines.

Each item stored in the database has a name associated with it, like "Address" or "Amount due". To insert the relevant words into the letter, you just type its name into the LocoScript document in "reVerse Video" (+RV).

Running off the mailshot

To produce a print run, you first prepare a letter using LocoScript, and set up the mailing list using Qmail. There are now several ways forward. You can pick one of your mailing list databases within Qmail and select the addresses you want to mail - for example all those who are tagged with a certain attribute (like P0, our parrot stuffers). Attributes can be combined to produce complex selections like parrot stuffers who also manufacture feather dusters.

You can opt not to use a mailing list, but run the mailmerger directly. In this case, as the document is processed Qmail pauses to ask you what each database field should be as you come across it.

The verdict

Qmail is a worthy challenger to LocoMail. The address database is simple and well designed for mailmerging, and overall, it's ideal for mailmerging if you have a complicated address list.

The only real drawbacks are that it can't read files from word processors other than LocoScript, and that it can't do arithmetic to customise invoices. The manual is a bit too dense for comfort, and the novice reader will find it a struggle. Some example letters are on the disc to show how it is done.

QMAIL VS. LOCOMAIL

LocoMail, produced by the authors of LocoScript, sets a high standard, so what can Qmail offer to better it?

Locomail can't easily be used to select a subset of a mailing list for specialised mailshots, since it has no equivalent of Qmail's database. On the other hand, it can do numeric calculations in documents (to insert totals in invoices, for example) which Qmail can't.

On balance, for mailmerging that is just a straight run-off from an address list, or one that needs numeric calculations, LocoMail is a clear winner. If you need to pick and choose from a complex address list, Qmail shines through.

PLUSES • MINUSES

+ Reads LocoScript files
+ Prints all LocoScript commands properly
+ Well-designed database is ideal for mailmerging
+ Database "attributes" provide advanced selection capability
- Manual is lacking in examples
- No numeric calculation capability
- Doesn't read non-LocoScript files.

QMAIL is available in Australia from AMSNET International on (075 - 531734) and is currently priced at $99.00 retail or $89.40 members price.

THE PASCAL / MT + PROGRAM DEVELOPMENT SYSTEM

A User's view - by Adrian Booth

The Digital Research Pascal/MT+ compiler is a very good and extremely flexible compiler for the pascal language. I would never have experienced it, however, because when I went to my local dealer the (very new and inexperienced) salesman I spoke to quoted me $100 for *Turbo Pascal.* I had had previous experience with Turbo Pascal, and so thought that I would obtain that package. The dealer, while an honest fellow, was appalled to find that he would have to give me a $249 package for the $100 I paid. We agreed in the end that the DR package would be supplied to me as a substitute. Do I regret my loss? Read on and decide for yourself.

The compiler arrived in a shrink-wrapped box about the size of a small, thick encyclopedia. This, to me, was a good point: I had only had the computer (a PCW 8256) for a week or two and really wanted an impressive desktop display of serious computing power, just like I had seem in magazines. On the bottom of the box was a label that presented the details of the software: the program, the target machine, the version (mine was 5.6.1), and the serial number. Also on the label was paragraph of license restrictions (which I still haven't read.

Immediately upon opening the box upside down, a mass of paper fell onto the floor. The disc came in a plastic folder with a "Digital Research Software Protection Seal" holding it closed, with the legend **Caution:** read your license and software product description before breaking this seal". Before I could do this, however, I had to find them. Searching through the mass of documentation, I found:

* A Digital Research "Software Performance Report" form
* An application form for technical

support (form an England-based firm: very helpful)
* A 'Thank you for buying this compiler' letter (2 pages)
* A booklet entitled "European End-User License Agreements"
* A hefty "Programmer's Guide" (of about 200 pages)
* A slightly more hefty "Language Reference Manual"

After reading through most of these, I finally realized that the "thank you for buying..." letter was the product description. I thought, quite frankly, "stuff this" and, taking a deep breath, broke the seal and started reading through the Programmer's Guide. The first section says "the Pascal/MT+ system is supplied on three separate discs". I quickly turned to the software bag and checked it very carefully, but no, there were not two other discs hiding in any corners. Then I finally got around to the reading of the Product Description, which said "in an effort to copy the Pascal/MT+ system onto 1 disc ..." Whew!

The next four and a half pages of the manual were taken up with two large tables; "System Filetypes" and "Contents of Distribution discs". I was really quite amazed at the number of files on 1 disc, until I saw that perhaps 1/4 of the files weren't on my disc, because they use the AMD9511 math chip, which is not on the PCW. Then comes the part "Installing Pascal/MT+". OK. I formatted, copied PIPped and mucked about for a good 20 minutes. Not all the files can be PIPped onto your worker, however, (there not being enough room because the files on the original are so tightly packed). Hence, I put all the .SRC files (program source files) onto a different disc.

The next part said "Put a text editor

on the compiler disc". I blush to admit that I was just about to call my dealer, "Hey, got any text editors?" when, with a blinding flash of inspiration, I realised that, yes indeed, LocoScript was a text editor. I had used it, of course, for essays and the like, but I always considered it and programming to be totally different entities. ("What about RPED?" I hear you cry. RPED was, at least, free: it isn't worth any more than that. If you want to lose half your file every time you delete a character, use RPED. If you want a nicely laid out program, use LocoScript).

Then came the part "Compiling and Linking a Simple program". I worked through this and, to may amazement, the program worked ! The last sentence of the section said "If you want to write other simple programs, follow the same steps, but use your new program's filename instead of TEST1"

It was very shortly after this that I discovered what was, to me a major shortcoming in the documentation. What I wanted next was a section "Getting more complicated"; i.e: what to do with more complex programs. My problem, if you can call it that, was that I had never used a compiler that needed to have the linker invoked separately. (If you don't know what these terms mean, see the Glossary at the end of the article). I had used the pascal compiler on a PDP/11-44 (a very good minicomputer), and Turbo Pascal on a number of micros. Both of these handled linking automatically. But, as yet, I saw no major problems. I typed in a program that used **real** numbers;\and compiled it perfectly. The I turned over the disc and started the Linker with the same command as

I used before; "LINKMT M:PROG1,PASLIB/S". The disc was merrily spinning when up came the dreaded Undefined symbols @XOP, @RRL, @WRL - and the linking stopped. The first thought that went through my head was "I've corrupted my disc!". (I tend to panic in such situations; disc corruption is something very close to my heart). However, fighting off waves of panic, I re-compiled and linked the previous simple program. It ran flawlessly. Suddenly, the keen edge of a superbly analytical mind said "ah ha ! It must be because the program has got real numbers in it!"

Take out the manual, read, read, read, Section 2; Compiling and Linking. Wade through 10 pages about the compiler, with such simple and practical sections (for the beginner) like *Entry Point Record Generation* and *Strict Type and Portability Checking*. Now, I consider myself to be fairly intelligent, I can tie my own shoelaces, and I have learned Pascal. But these headings meant nothing to me. Again, I wish there was a "Getting more Complicated" section before the nitty-gritty started. Anyway, I eventually found the part "Using the Linker". I thought "right, where is the section 'using real numbers' ?". The first thing I saw was this line:

LINKMT <new filespec>=<Main module>(,<module>)(,<library>)

I found this part of the manual very undescriptive and indeed cryptic in some cases. While it seems simple to me now, I, as a first-time user of this system, was floundering for quite some time. The first section in this part was "Linker Options" (which are specified at command time) like X:nnnn *Overlay static variable starting address when used with overlays, or amount of overlay data area when used with root modules.* Finally I found the section "Required Relocatable Files" which lists the files that can be linked with your program. Trying again, I also linked FPREALS, and the program worked. Despite this, it took a lot of work just to get an 11-line program to calculate and display the square root of a number.

I have not yet had the need (or, I

admit, the courage) to tackle the next parts of the manual. Sure, I read them, but I don't have any need or desire to use the features. Just how difficult the manual was for the beginner to use didn't hit me until I read, in the Copyright section the sentence "....This manual is, however, tutorial in nature. "I turned at once to the contents page, but I could not find any section titled "A tutorial in Pascal/MT+". I was honestly shocked to discover that the manual was supposed to be a tutorial!

The major emphasis of the documentation seems to be towards the programmer who has had a fair degree of experience with compilers, and wants to know "How does *this* compiler do it?", and not so much "What do I do?"
Despite that, I realise that anyone who is competent in the use of this type of compiler wouldn't want to wade through pages of a "holding hands" nature. Perhaps, though the manual would be improved with another appendix, "A Beginner's Guide to Pascal/MT+".

The Language Reference Manual is a significantly easier-to-use text than the Programmer's Guide, yet still makes assumptions about the programmer's experience with non-standard Pascal.

So, how does the program compare with, say, Turbo Pascal? The MT+ system takes considerably longer to compile. Using this system, with both the source file and the token file being read from/written to drive M:, a 39K "simple text file" from LocoScript (of 963 lines of 20 procedures) took 6 minutes and 37 seconds. I can tell you that spending six minutes waiting for the program to compile, wondering if the 950th line will work or not, can be a very tormenting practice, leading quickly to wife-bashing, cat-kicking, and mental disorders. The time taken to compile, and the documentation, are perhaps the features that could use improvement. And, of course, the "standard" status of Turbo has obvious advantages. However, despite these criticisms, I feel that the program lives up to it's claim "...designed to meet the high performance needs of the software development professional or the advanced student of Pascal".

Unfortunately, we students are encouraged to only use ISO-standard features of a compiler. So, until I eventually write professional programs in Pascal, the additional features will be unnecessary. So, if you are a student, or have only a casual interest in Pascal, the MT+ system is more than adequate for your needs. Perhaps, However, if you wish to write programs for sale,
the additional features of Turbo Pascal, coupled with it's widespread acceptance, could make it work the extra money.

In conclusion, I would say that the Pascal/MT+ program development system is a very good buy for the price (which I believe is around $150). However, if this system is your first experience with a Pascal compiler, you would be very well advised to firstly, read the manual very carefully, two, read the manual again, and third, find someone who has it and has experience with it. If you have major troubles with the compiler, I would be happy to hear from you about your comments, and will try to send you a solution if possible. My address is:

13 Crawford Road, Orelia W.A. 6167
Phone: (09) 419 4047.

If you contact me by mail, I would appreciate the inclusion of a stamped, self-addressed envelope.

GLOSSARY
Compiler: a (very large) program that converts (translates) programs written in a particular source language to machine code.
Linker: a program that links together the machine code from the compiler with pre-written routines to perform operations like mathematics, input/output, and so on.
Source file: the file on the disc that contains the program itself in ASCII format.
Token file: the file that the compiler generates that holds the program in a "tokenised" form, which is eventually manipulated by the Linker to produce the executable program.

Printing with confidence under CP/M

The standard PCW printer is capable of outputting a wide variety of different text styles. LocoScript users are accustomed to being able to freely mix italic, bold superscript and underlined text in sizes ranging from 17 to 10 characters per inch.

However, when using CP/M to print files, the options seem to shrink. Pressing the [PTR] key means you can control whether you use draft quality or high quality print, but other than that you seem to be forced to use 10 characters per inch standard text all the time.

But it isn't that bad really; with a little trickery, and knowing the black art of how to read the Amstrad manual, the printer can be made to use its full range of styles even from CP/M.

The great escape

Consider for a moment what happens when you ask the printer to print a document. The PCW sends the characters down the connecting cable in a long stream, and the printer faithfully puts them on the paper. Now and again, the PCW sends a special character which doesn't produce any print but for example tells the printer to move to a new line.

It's these special characters that we are interested in. One character, known as "escape" or "ESC" for short, is very commonly used. When ESC is sent to the printer it means, "don't print the next few characters because they are an instruction to change print style". Exactly what the change is depends on the characters that immediately follow the ESC. For example, they might mean "print all text from now on in italics." In order to make the printer do what you want, you first have to find out what the correct command is that you have to send, and then you have to work out how to send it. The second part of this is easiest done from BASIC, which has a special command called "LPRINT" to send characters to the printer.

Stealing the manual's secrets

Appendix II of the PCW CP/M manual gives all the information that you need to control the printer, although doesn't tell you what to do with it. Pages 126 to 137 list the functions that the printer does, and with each one is the code needed to activate that function.

For example, look at page 132: the top heading is "Italic text". Under that it says that to print italic characters you send ESC 4 to the printer, and to revert to normal you send ESC 5. This means that after the ESC 4, all text printed appears in italics until the ESC 5 is printed, after which it's back to the usual typeface.

Most of the special codes are in the form ESC followed by 1 or 2 letters or digits. These following characters can mean one of two things depending where they are, and unfortunately the PCW manual doesn't often distinguish between them.

The character immediately following the "ESC" is an ordinary printable character. However, if there is a second following character, usually 1 or 0, then that refers to a non-printable character whose number is 1 or 0 respectively. For example:

ESC is non-printable character 27   The printable character "4"

ESC 4   (to print in italics)

ESC - 1   (to print underlined text)

The printable character "-"   The non-printable character numbered 1
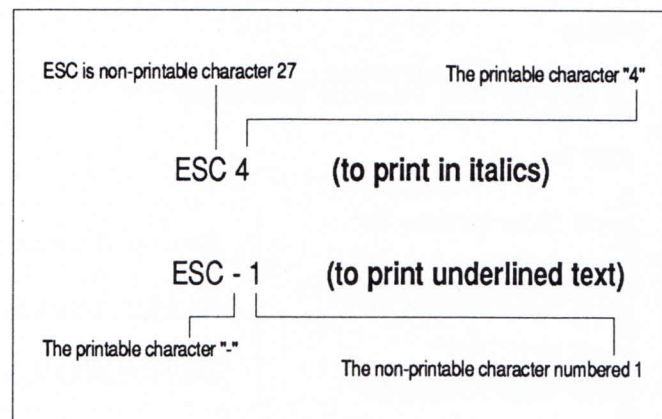
See the box on "What characters are" for an explanation of printable/non-printable characters, and all will become clearer with some examples.

Doing the hard work

Armed with the information from the manual on what codes control which printer functions, you now have to get them from your head to the printer. The easiest way to do this is from BASIC. Run BASIC from your CP/M master disc, and it will give you its "OK" prompt.

LPRINT is the command to send characters to the printer. Try typing

```
LPRINT "Happy Birthday TAU" [RETURN]
```

and the message appears in draft quality normal print on the printer. Now let's make it come out underlined. Looking at page 133 of the manual, underlining is done by ESC - 1. The hyphen is a simple printable character, and the 1 is a non-printable code. ESC is non-printable code 27, so type

```
LPRINT CHR$(27)+"-"+CHR$(1) [RETURN]
```

Now try the "Happy..." message again, and it comes out underlined.

Effects can be combined, so you can print in italics at the same time as underlining. Again looking at the manual page 132 the required code for italic text is ESC 4. Type

```
LPRINT CHR$(27)+"4" [RETURN]
```

and then try the happy message again to see what happens.

You can reset the printer to normal with the [PTR] key (see the "In an emergency" box), so now try a few other effects from the manual like proportional spaced text, or superscripts.

The settings that you do this way using BASIC will stay in effect until you reset the printer, even if you leave BASIC. For example, if you set up italic text and then enter your CP/M word processor or spreadsheet, files printed from there will appear in italic text.

Unfortunately, many CP/M programs set the printer up the way they want for printing. For example, no matter what text size you start off in, NewWord will normally print in 10 pitch. Also, SuperCalc resets the printer before it starts, so you always get draft quality text out of it (unless you read 'The Ins and Outs of printing Supercalc reports by Rod Webster which follows this article).

Saving your changes

As experienced users of the PCW printer well know, the paper is prone to jam as it goes through the roller or some other more human error means you want to reset the printer and start all over again.

Unfortunately, when you do reset the printer (from the [PTR] command line in CP/M) the settings you have made will all be lost, and it will revert to the standard draft quality, 10 characters per inch text that you normally get. It's very awkward to go into BASIC and redo things.

The solution to this is to send the printer the command ESC d, which freezes the current state of the printer as the one to be used after a reset is done. So, after you have made all the changes you want to the normal print settings, just before you leave BASIC type LPRINT CHR$(27)+"d"

Make sure you type a lower case "d", or the command will be ignored. Now you can reset with impunity, without losing your hard work.

The exception to the rule

Most of the printer codes in the manual are in the form "ESC p 1", and we've covered use of these in some detail. But some, like that on page 131 for Condensed text (17 pitch) just says "SI", Just to the right of SI is the number 14 in brackets - this is Amstrad's way of telling you that SI is a non-printable character whose code number is 14.

So to change to 17 pitch text, just send the single special character SI to the printer. Do this from BASIC

```
CP/M Plus  Amstrad Consumer Electronics plc

v 1.4, 61K TPA, 2 disc drives, 368K drive M:

A>basic

Mallard-80  BASIC with Jetsam   Version 1.29
(c) Copyright 1984  Locomotive Software Ltd
All rights reserved

31597 free bytes

Ok
lprint "Happy Birthday TAU"
Ok
lprint chr$(27)+"-"+chr$(1)
Ok
lprint "Happy Birthday TAU"
Ok
lprint chr$(27)+"4"
Ok
lprint "Happy Birthday TAU"
Ok
system

A>
```

```
Happy Birthday TAU

Happy Birthday TAU

Happy Birthday TAU
```

The printer commands being used and the effects they produce

by typing LPRINT CHR$(14) [RETURN]. There's no need to send ESC or any other characters.

To sum up then, the rule for reading the printer commands from the manual is this: single characters like "p" or "I" are to be sent to the printer as they stand, using LPRINT from BASIC as described earlier. Words like "SO" and "DC4" stand for special non-printable characters whose number is printed alongside them when they are first referred to in the manual. Don't try to send the characters "S" and "O" to the printer, but send SO's number, 14, instead, using CHR$(14) in BASIC's LPRINT command.

Automating the Printer changes

Typing all these commands from basic works fine, but is very laborious. There is a CP/M utility called SETLST which does it faster, but is harder to set up.

It works in a similar way to the SETKEYS program which will be covered next month. Set up a simple text file containing the characters to be sent to the printer, and SETLST then sends this file to the printer, as will be revealed.

The only problem is how to type non-printable characters into this text file. The up-arrow key ([EXTRA]+; on the keyboard) introduces a non-printable code, which is typed between single quotes, so non-printable character number 1 is typed as ↑'1'. Since ESC is used so often, this can be typed by its name, again between single quotes after an up-arrow: ↑'ESC'.

For example, suppose you always want to work in high quality, proportional spaced text from CP/M. Set up a text file called, say, HQPS.PTR, containing the lines

↑'ESC'p↑'1'

↑'ESC'm↑'1'

↑'ESC'd

What characters are

Boffins out there will all know that characters are really the dreaded "bytes" that computer magazines always go on about. All this means is that computers only understand numbers, so each printable character is assigned a number between 0 and 255.

Not all the numbers between 0 and 255 correspond to actual printable symbols - after all, there are only 10 digits, 52 alphabet letters and a few punctuation marks. These are assigned numbers ranging upwards from 32. The numbers below 32 are assigned to non-printable or "control" characters. In particular, the character that everyone refers to as ESC is character number 27 to the PCW.

Since we're using BASIC as the way to handle characters in this article, it's as well to know how it copes with characters when printing. To send a printable character like "M" to the printer, the BASIC command is

LPRINT "M"

However, ESC as we have seen is not printable but is known as character number 27, and the command to send that is

LPRINT CHR$(27)

This means, "send character 27 to the printer" - CHR$ is BASICese for "character number".

The first line sends ESC p 1, to set proportional spaced print, and the second line sends ESC m 1 for high quality text.

Now put a disc in the current drive with the file SETLST.COM on it and type
SETLST HQPS.PTR [RETURN].

From now on, text going to the printer from CP/M (eg. when you print a file by saying PIPLST:=filename) will appear in high quality proportional spaced print.

The virtue of the last line of the HQPS file, sending ESC d, is that it saves the high quality, proportional spaced setting as the default. If you have to do a printer reset subsequently, after paper jam for example, then the printer will revert to this state rather than its usual draft mode 10 pitch text.

If you save HQPS.PTR on your startup disc, with SETLST.COM, you can use the PROFILE.SUB autostart method to set your PCW printer up automatically whenever you start CP/M.

In an emergency

All this changing print styles can make you end up with a confused printer that can't just print normally. To get back to the usual setup, press the [PTR] key and you will see the printer status line at the bottom of the screen. Use the cursor-right key to highlight the RESET option, and press +. This resets the printer, and [EXIT] gets you back to CP/M.

The Ins and Outs of printing SUPERCALC² reports

Supercalc² is probably the best and most versatile spreadsheet program available for CP/M & IBM computers and is widely used by PCW owners. How to get this program to print in letter quality on the Amstrad PcW is not as easy as the manual would have us believe.

Rob Webster explains how to overcome the problem.

Many people must quickly become frustrated when they want to print SuperCalc² reports in a format other than draft quality, 17 pitch (condensed mode). The SuperCalc² manual outlines how to install SC2.COM for other printer formats in Appendix D. It also explains how you can setup the printer using escape codes using **/Output, Display, Setup**. However, first attempts at changing any of these settings draws a blank. The setup routine never works, and INSTALL.COM cannot alter a read only file. This article outlines how to overcome these seemingly insurmountable problems with a little thought and ingenuity.

I will outline all of the methods available to get your reports down on paper. These include outputting a SuperCalc² inserting into a LocoScript document, correctly installing SuperCalc², and getting the setup option to do what you want to. As always in computing there is more than one way to achieve the same end result (although some solutions are more elegant than others). One enterprising soul I know went as far as writing a basic program to read a SuperCalc² .PRN file from disc, set up his printer to the required format and print out the file!

But first, let's look at the reasons why the setup option doesn't work and why install won't do as it should. When a report is sent to the printer, SuperCalc² first sends a printer initialisation string which sets up the printer to 132 characters wide and 66 lines to the page. Appendix II of Manual 1 outlines the various escape codes which can be used to alter the printer output and is useful for budding programmers who want to use the printed word. The information is comprehensive but you may find it difficult to understand. However, it is dealing with a complex subject and the style of presentation is common to many computer manuals.

Unfortunately, when SuperCalc² was transferred over to the Amstrad, Amsoft & Sorcim included a ESC @ (EXIT @ on the PCW) code in this initialisation string which resets the computer whenever you print a report. This means that when you try to use a setup string, the effect of the code

is lost when SuperCalc² resets the computer. One way of avoiding this, is to end each setup string with the ESC d code by pressing <EXIT> <d> which will set the printer defaults to whatever you have set them to. For example, from the setup option in SuperCalc² , (/Output, Display, All, Setup), keying in the following keystrokes will set your reports to 12 pitch (Elite), letter quality print:
<EXIT> <M> (12 pitch) <EXIT> <m> <1> (letter quality) <EXIT> <d> (set printer defaults) <RETURN>
(Make sure you observe the correct case as upper and lower case letters have different functions).

You would also have to change the width of your report to 96 characters using the Width option. Having done this, select *Print* and you will print out a letter quality report.

Another way to solve the problem is to output a disc file (/Output, Display, All, Disc), boot up LocoScript and insert the .PRN file generated by SuperCalc² into an existing document using f7 Insert Text. Refer to my article in the October, 1986 edition for full details on how to insert ASCII files into LocoScript documents. The worksheet can then be laid out in any typestyle you require using the facilities of the word processor. I have found this useful when preparing reports which use SuperCalc² worksheets.

However, I feel that the most elegant solution is to install a copy of SuperCalc² on a separate disc for

use when a letter quality report is required. The program SC2.COM supplied with SuperCalc[2] is set to read-only which means that you cannot alter the contents of the program using INSTALL.COM. Those of you who have tried to alter settings using this facility will have noticed that this causes the INSTALL program to abort when it tries to save the changes you have made. The following process is involved but is well worth the effort if you often want to output letter quality reports.

You will need a pen and paper, a formatted disc, your SuperCalc[2] manual, and your computer manuals. First we must decide what type of report you want to be able to print out, so make a list of what features you want. For example; 70 lines per page (A4), Elite or 12 pitch, and letter quality print.

Next, refer to Appendix II and write down the escape codes required to achieve these features. Now refer, to Appendix I.4 (The complete character set) and beside your list of escape codes write down the equivalent Hex values (ignore the #). You should now have a list looking something like the one shown in the box at the bottom of this page. Note that you are restricted to a maximum of eight hex values by the install program.

Now that we have established the codes required for the printer initialisation string, we can turn on our computer and boot the CP/M system disc (flip side of your LocoScript disc). Now type in the following commands:

```
A>setdef m:,*
A>pip
*m:=set.com
*m:=pip.com
```

Next, insert your SuperCalc[2] disc and type:

```
*m:=sc2.*
```

When you are faced with the '*' prompt used by pip, press <RETURN> and the A> system prompt will return. You now have a copy of the SuperCalc[2] programs and the utilities SET.COM and PIP.COM on drive M: We have used the SETDEF command to define the order the computer looks for programs (first on drive M: and then on the default drive). Now we will use SET.COM to change these files to read/write format to allow INSTALL.COM to alter the file SC2.COM. Type in the following command:

```
A>set m:sc2.*[rw]
```

We are now ready to run the INSTALL program to alter the default settings of the copy of SC2.COM held on drive m:. Turn over your SuperCalc[2] disc and replace it in the drive. At the prompt, type in:

```
A>install
```

You will now be running the installation program which I found quite friendly and informative

with a great deal of on screen help. Answer "Y" when asked if you want to proceed, and then when asked for the name of the program you want to alter type "m:sc2". In keeping with the philosophy of SuperCalc[2], you can press "?" at any time to receive helpful information. Selecting option Z from the terminals screen will enable us to modify the printer settings. Choose 3. **Printer page length (lines)** and enter 70 for A4 paper, and also alter the page width (option 4) to 96. Now select option 8 to change the printer initialisation string. Enter the number of values you wish to input (8, in our case) and then type in each of the values we have previously determined. You receive plenty of opportunities to alter anything that you enter incorrectly. When you are satisfied that all is well, select "X" to exit the modifications screen. Press "A" to save your changes when prompted and then "X" to exit the program. You now have a modified version of SuperCalc[2] on drive m:. All we have to do now, is to copy this onto a new formatted disc. Insert your new disc into the disc drive and type the following:

```
A>pip a:=m: sc2.*
```

Incidentally, SuperCalc[2] runs much faster if it is resident in the memory drive, and if you like, you can create the following file with the name PROFILE.SUB using RPED or LocoScript and include it on your disc auto start operation:

```
pip m:=sc2. *[row]
m:
sc2
```

Note that PIP.COM and SUBMIT.COM must be resident on your disc, along with the operating system file J14CPM3.EMS. These can be transferred using PIP as I outlined above.

Feature	Escape code	Hex value
70 lines per page	ESC C (ASCII) 70	1B, 43, 46
Elite Text (12 pitch)	ESC M	1B, 4D
Letter quality	ESC m 1	1B, 6D, 31

Looking for Business Software for your PCW 8256/8512 ?

Keep reading if you want the best, user friendly, low priced, professional packages.
ISD have put together a whole product range for the PCW business user.

WORD PROCESSORS		
Arnor	Protext	279.95
Arnor	Prospell	94.95

DATABASES		
Advance	At Last/Database Manager (due soon)	99.95
First S'ware	D-Base II	399.00
Caxton	Cardbox	189.00
Caxton	Condor 1	307.00

SPREADSHEETS		
Caxton	Scratch Pad Plus	189.00

MISCELLANEOUS		
Digital Rch	DR Draw	169.95
Digital Rch	DR Graph	169.95

Gemini	Font Gem	64.95
Mirrorsoft	Fleet Street Editor	due soon
Advance	Money manager	99.95
Caxton	Touch 'n' Go	84.95
Caxton	Brainstorm	166.00
CP	Graphics, the universe and everything on the PCW 8256/8512	69.95
Database	Plan it	84.95
Digital Int.	Companion	69.95

ACCOUNTING		
Map	Accnts (Integrated)	499.00
	Individual Modules	174.95

UTILITIES		
Digital Rch	C-basic Compiler	169.95

Siren S'ware	Disc mate	94.95
Mirrorsoft	Graphic Operating System	due soon
Digital Rch	Pascal MT+	169.95

GAMES		
CP	3D Clock Chess	79.95
CP	Bridge Player	79.95
Interceptor	Aftershock	57.50
Audiogenic	Graeme Gooch Test Cricket	94.95
Interceptor	Heroes of Kahn	69.96
Global	Monsters of Murdac	69.96
Rainbird	The Pawn	89.95
Mirrorsoft	Strike Force	69.95
Digital Int.	Tomahawk	57.50
Gremlin	Bounder	49.95

✱ **NEW PC1512 Software available** ✱ **More products are arriving every day**
✱ **Send for our Price List now** ✱ **Order from your local dealer**

To: International Software Distributors
34-36 Wadhurst Drive,
Boronia, Vic. 3155
Telephone: (03) 222 2288

Please send your catalogue: PCW ☐ PC ☐

Name: _____
Address: _____
_____
_____ Post Code _____
Telephone: _____

DEALER ENQUIRIES WELCOME

NEW From Electric Studio

Create superb graphics on your PCW with:

8256 Light Pen	$259.95
Mouse	$429.95
Video Digitiser	$349.95

PC1512 Light Pens due in soon.

Distributed by

ISD ®

GALLIMAUFRY

A selection of short programs

To save you rushing to your dictionary, the title of this article means "hotchpotch" or in our sense a mixture of programs which will demonstrate some of the clever graphics capabilities of the CPCs. But before we get on to the pretty pictures, we present a program from Steven Miles which expands the capacity of the function keys from 100 characters to untold limits - well almost!

KEY EXPANDER: Steven Miles
This routine is a modification of one which appeared in the Popular Computer News a couple of years ago.

It is self explanatory (most of the program consists of printed instructions). When typing in, the "X" looking characters in line 95 are achieved with CTRL and X which will produce inverse characters. The routine is meant to be incorporated into your own programs.

```
10 MODE 2:INK 0,1:INK 1,26:BORDER 1
20 PAPER 0:PEN 1
30 LOCATE 1,1:PRINT"      The Amstrad's 1
00-character limit on function key expan
sions can be changed to a much greater v
alue by allocating a new buffer using th
e firmware entry    KM_EXP_BUFFER. "
40 LOCATE 1,5:PRINT"The following progra
m sets up a 1000-character buffer - the
1000 figure could be changed to any othe
r value in the range 12 to 32000 or more
. "
50 LOCATE 1,8:PRINT" Since the patch to
invoke KM_EXP_BUFFER is overwritten by t
he buffer itself you can only run this c
ode once. "
60 LOCATE 1,11:PRINT"  The function key
s are reset to their default state, but
it is now possible to store up to 1000 c
haracters on them, though you will find
each expansion token is limited to 255 c
haracters, not the default state of 32 c
haracters. "
70 LOCATE 1,15:PRINT"The program is for
incorporation into an existing program a
nd does not generally affect the behavio
ur of commercial programs loaded into th
e CPC464/664/6128. "
80 LOCATE 1,18:PRINT"    The loading pro
cess resets the machine into an initial
state which discards patches such as the
```

```
ones given above. "
90 LOCATE 1,21:PRINT" Since the program
alters HIMEM, care must be taken to alte
r SYMBOL AFTER first if it is necessary.
"
95 LOCATE 30,23:PRINT"X Locomotive Softw
are Ltd, Dorking, Surrey. X"
100 LOCATE 6,25:PRINT"Press [ SPACE ] to
Run. "
110 a$=INKEY$:IF a$="" THEN 110
120 IF a$<>" " THEN 110 ELSE 130
130 length=1000+32                       ,
length allows for red tape
140 MEMORY HIMEM-length                   ,
allocate space for buffer                 -
150 POKE HIMEM+1,&21                       ,
LD HL, length
160 POKE HIMEM+2,&FF AND length
170 POKE HIMEM+3,INT(length/256)
180 POKE HIMEM+4,&11                       ,
LD DE, HIMEM+1
190 POKE HIMEM+5,&FF AND UNT(HIMEM+1)
200 POKE HIMEM+6,INT((HIMEM+1)/256)
210 POKE HIMEM+7,&C3                       ,
JP KM_EXP_BUFFER
220 POKE HIMEM+8,&15
230 POKE HIMEM+9,&BB
240 CALL HIMEM+1
250 CLS:NEW
```

SNOW STORM: Shaun Garrad
Unless you live in Tasmania, it seems, you are unlikely to experience a White Christmas. To make up for this here is a program which should be run with the air conditioning at maxi-cool for greatest effect.

```
1 'Snowstorm
2 'Shaun Garrad
3 'The Amstrad User Feb87
10 INK 0,0:BORDER 0:INK 1,26:MODE 0
20 FOR a=1 TO 640 STEP 15
30 c=2+INT(RND*14)
40 FOR b=400 TO 1 STEP -4:PLOT a,b,c
50 PLOT a,b-2,c:c=c+RND*2
60 IF c>15 THEN c=2
70 NEXT b:NEXT a:FOR b=0 TO 400 STEP 2
80 FOR x=1 TO 2:FOR a=2 TO 15:INK a,26
90 CALL &BD19:INK a,0:NEXT a:NEXT x
100 PLOT 0,b,1:DRAW 640,b,1:NEXT b
110 WHILE INKEY$="":WEND
```

STAINED GLASS: Alistair Scott

This fine offering shows of the powerful FILL command on version 1.1 of Locomotive Basic (for 664 and 6128 owners only).

The program itself takes several minutes drawing everything up; the wait is well worth it though!

```
1 'STAINED GLASS - 664/6128 only
2 'Alistair Scott
3 'The Amstrad User Feb 87
4 '
10 DEFINT a-z:DEG:RANDOMIZE TIME
20 MODE 0:BORDER 0:INK 0,0
30 ORIGIN 320,200
40 FOR a=0 TO 360 STEP 20
50 MOVE 0,0
60 FOR b=0 TO 360 STEP 20
70 DRAWR 35*SIN(a+b),35*COS(a+b),1
80 NEXT b,a
90 FOR a=0 TO 360 STEP 12
100 FOR b=0 TO 170 STEP 12
110 MOVE b*SIN(a),b*COS(a)
120 FILL INT(RND*14)+2
130 NEXT b,a
140 CLEAR INPUT:WHILE INKEY$<>CHR$(13)
150 INK INT(RND*14)+2,INT(RND*26)+1
160 WEND:MODE 1: CALL &BC02:END
```

HYPNOTIC: Simon Tully

Now you can go for a spin while remaining in your chair! The resulting display of this program is nothing short of hypnotic. We accept no responsibility for any ill effects from misuse of this program.

```
1 'hypnotic
2 'Simon Tully
3 'The Amstrad User Feb87
10 ENT -1,40,-1,3,40,1,3
20 ENV 1,10,-1,100,10,1,100,10,-1,100,10
,1,100
30 ON BREAK GOSUB 250
40 DEFINT a,b:MODE 0:ORIGIN 320,200
50 FOR a=a TO 15: INK a,26:NEXT
60 c=0:INK 0,0:BORDER 0
70 WINDOW #1,1,1,1,25
80 WINDOW #2,40,40,1,25
90 PRINT#1,"Watch closely and you"
100 PRINT#2,"will soon be in my grasp"
110 FOR k=-4 TO 2 STEP 0.5:c=c+1
120 FOR f=0 TO 4*PI STEP PI/50
130 x=20*f*COS(f-k):y=20*f*SIN(f-k)
140 IF f=0 THEN MOVE x,y
150 DRAW x,y,c
160 NEXT f,k:FOR a=0 TO c:INK a,0:NEXT
170 CLS #1:CLS #2:ON SQ(1) GOSUB 230
180 WHILE 1:FOR a=c TO 1 STEP -1
190 IF a=c THEN INK 1,0 ELSE INK a+1,0
200 CALL &BD19:IF a=c THEN INK 1,0
210 INK a+1,0:INK a,26
220 FOR b=1 TO 35:NEXT b,a:WEND
230 SOUND 1,500,4000,15,1,1
240 ON SQ(1) GOSUB 230:RETURN
250 INK 1,26:PEN 1:MODE 1
```

PYRAMID: Adrian Still

This was originally a one-liner, but has been split up to make it more legible. It is an interesting routine, as it shows what is capable with the minimum of commands.

```
10 'pyramid
20 'Adrian Still
30 'The Amstrad User
40 MODE 2:LOCATE 38,3
50 PRINT "PYRAMID":INK 1,6,24
60 SPEED INK 4,4
70 FOR i=1 TO 640 STEP 3
80 PLOT 320,350:DRAW 639-i,0
90 DRAWR 0,399:PLOT 320,100
100 NEXT i
```

SOFTWARE REVIEWS

Games reviewed by Darren Robinson
Utilities reviewed by Chris Collins

·ACTIVATOR - Cascade/ISD
$37.50 cass; $49.95 disc·

Space port Antari has been drifting lifeless for many years. Your task here is to reactivate the vessel be collecting 7 different fuel-rods and return each to the Reactor Room. To make life difficult, the port consists of a large scale maze - to map this is essential if you expect to progress anywhere, and also a hoard of resident aliens which are hell bent on draining the Remote Activator Pod's energy supply.

In this fast moving 2D maze game you are given a real-time limit of 30 minutes and 9 lives to complete the mission. Using either keyboard or joystick, the Pod may carry up to 3 objects at once, is highly manoeverable and has ultra smooth movement in all directions.

Once a bullet is located and picked up most aliens can be shot fairly easily. This is the fun part · because they don't shoot back, although they can still drain energy until they've stopped dying and completely disappeared. I didn't have the heart to shoot some of the stationary ones 'cos they looked so cute! When your power level decreases to nil a life is lost. The enemy comes in many forms including ghosts, robots, hairy blobs with big eyes and electricity bolts.

To gain access to the outer sections of the space port you need to be holding certain lettered keys which unlock a corresponding doorway. Once a door is open, it only stays that way for the time you possess the key, so when travelling to a particular room think a bit and and be carrying the correct objects.

The bottom of the screen shows information such as the score, time remaining, number of lives remaining, power left in current life, objects carried and current room number. The use of colour and graphics is quite good; all sprites are of a good size and well designed whereas sound is limited to firing, explosions and the odd blip.

Other features are demonstration mode, game pause music - 'Don't give up your day job'.

Activator is a very playable maze game in the same genre as Sabrewulf and Survivor. If your not into mapping large games Activator is an essential purchase.

Originality	2
Documentation	2
Entertainment Value	4
Graphics	4
Ability to hold interest	5
Ease of use	6
Speed	6
TAU Index	52%
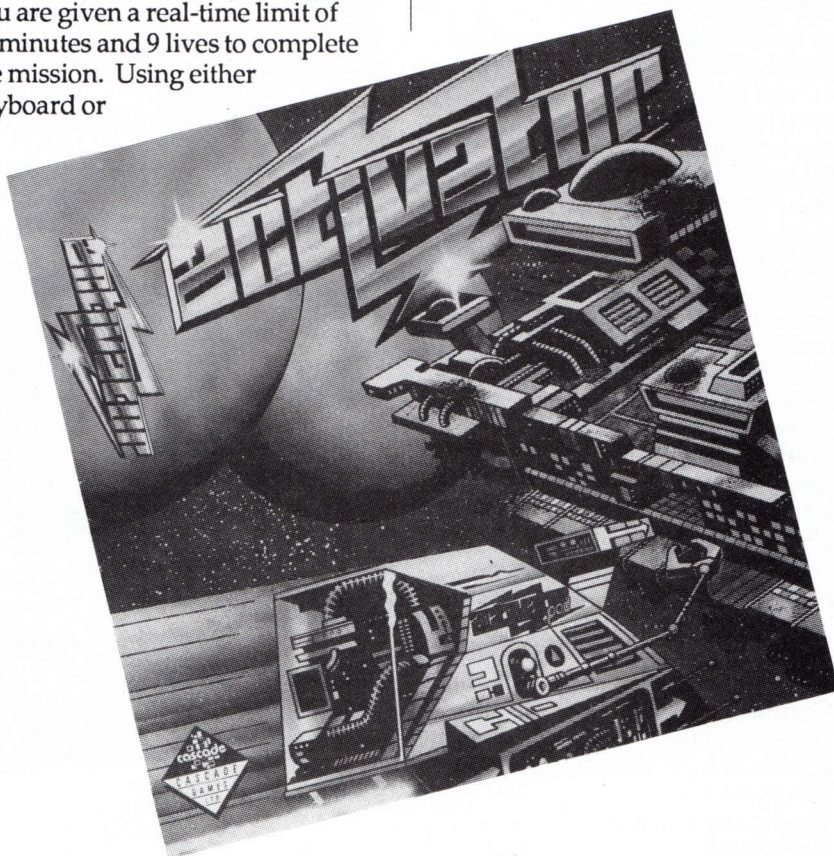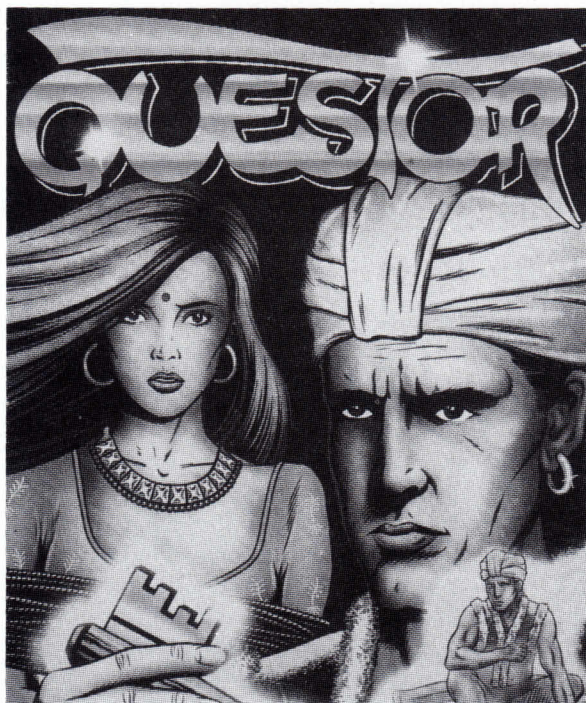
QUESTOR - Cascade/ISD
$37.50 cassette; $49.95 disc

Have you ever flown on a magic carpet before? Not lately? Well, climb aboard and become the Questor. So what is your quest, you may ask. Explore the catacombs of Garr, find the giant key, kill the guard and defeat Garr in order to save the daughter of Nawab. I'm not sure if she's good looking, but the doco tells us (in 4 languages) that she's a princess, so at least the girl's rich.....

Anyway in this 2D maze game up to 3 objects may be carried at once. Certain objects are needed to pass locked doors, although unlike Activator this doesn't appear to be much of a problem. Mapping is certainly recommended when you are able to penetrate further into the game.

Some screens are pretty tough to get through because of the creatures flying back and forth, but the program retains good speed, even when 4 sprites are after you.

Remaining lives are shown in the form of 3 diamonds which show your energy. Theses gradually crumble away, but hitting the wrong sort of creature may cost a whole diamond. Your enemies include rising lemons, bats, eyes, mosquitoes and others which are too weird to describe.

THRUST - Firebird/ISD
$9.98 cassette only

A budget version of 'Lunar Lander' atop the U.K. software charts? Incredible as it may seem, that's what happen in Dec. 86, and it's called Thrust.

In this game your task is to collect a Klystron Pod from the depths of a mine shaft and escape to outer space in order to progress to the next mission. This is achieved be careful manoevering and activating the tractor beams, but first you must destroy the enemy cannons. The spacecraft has adequate firepower for this, but lining up shots can be quite tricky. Fuel depots are scattered around each planet and you'll need to utilise them before going for the pod.

Also on each planet is a nuclear reactor. Shooting this repeatedly will temporarily disable the deadly cannons, allowing you more of a chance to blast them first.

It is permissible to ignore the Klystron pods altogether and progress through each mission quickly by just destroying the reactor. About 20 shots will send it to critical stage; this begins a 10 second countdown to the whole planet's destruction. It should be noted that this is not the way to get a high score.

After an extremely hazardous sixth mission, where your spacecraft is subjected to a constant barrage of cannon fire, you are returned to the easiest planet to start all over again, but now reverse gravity is encountered. This involves floating up instead of down; suddenly you're a novice again.

Carrying a pod makes controlling the spacecraft very difficult, especially in the long narrow tunnels, where a wildly swinging load spells certain doom. A bonus is awarded for a successful escape.

The graphics in Thrust are simple but effective, the only complaint being that the spaceship flickers slightly. Music plays while the game is loading, there is a high score table and a pause mode. Keyboard only.

Speed	4
Ease of use	5
Graphics	4
Documentation	3
Ability to hold interest	7
Originality	5
Entetainment Value	8
TAU Index	64%
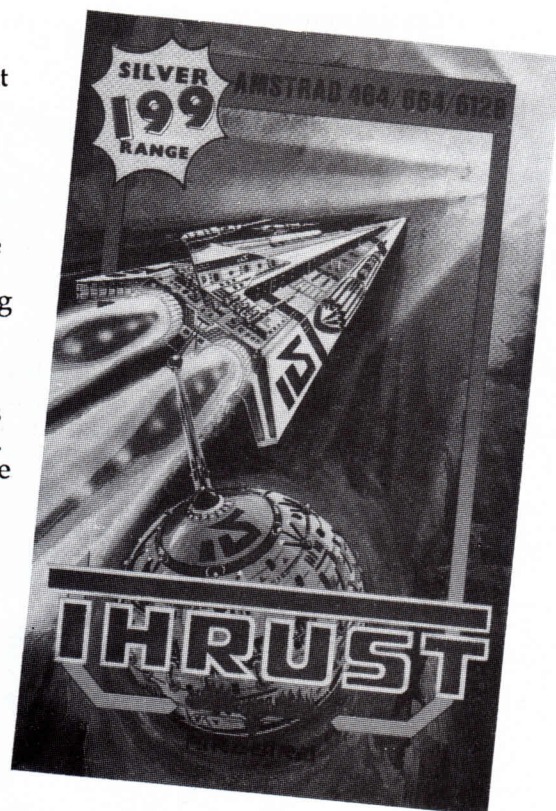
Some are vulnerable to attack, but all will drain energy upon contact. Timing is of the essence when deciding to make a dash through a group of creatures, as there is little margin for error. The chubby man on his carpet is relatively large and therefore rather an easy target in the narrow tunnels and shafts.

Other game features include demonstration mode, pause and hi-score table. In the display area at the bottom of the screen are shown the score, objects carried, accrued bonus points and the remains of your 3 energy diamonds. Joystick or keyboard may be used.

Sound is sparsely utilised except during pause when there is a high pitched annoying noise like an electronic alarm.

One interesting point is that your man won't fall in straight line. He drops either to the left or right depending on direction faced. It's good to see the programmers have done their background research on flying carpets!

Questor can be distinguished from other games of this type by the large variety of objects to collect and higher level of manual skill required to negotiate obstacles.

Originality	3
Entertainment Value	3
Documentaion	3
Use of graphics	4
Ability to hold interest	4
Speed	5
Ease of use	6
TAU Index	50%

PRINTER PAC II - Pride/Pactronics - $39.95

Not a very well packaged disc. Only came to me with a plastic case, the disc and a piece of paper describing the product. Not very good at all, however, I don't believe that this is usual for this range of utilities. But, seeing as this is a review of the program as delivered, it can only be judged as such.

It's a very small program, occupying only 6k of space on the disc. I found no trouble transferring these two programs to another disc. I don't know how you look after your utilities, but I like all of mine to be on the one disc, and if I can't transfer a utility to that disc, I'm not sure that I want it.

A small sheet of paper accompanies the disc, listing only what the program is supposed to do, how to load the program and the RSX commands that are available to use the program. Side One of the disc contains the only copy of the program, and Side Two is unformatted, therefore the first order of business mut be to make a back-up copy. Very simply done.

After running the program, you are shown a title screen, then taken to another screen with a menu of printer types for you to choose from. These include two types of Epson compatible printer and also the DMP-1. You are then asked if you wish to use a printer buffer in RAM, and what size you would like it to be. Maximum size is 16k. Another screen now pops into view with the new RSX commands listed and the new HIMEM shown. After looking at this screen, pressing any key will return you to mode 1 and a clear screen for you to work with.

As far as the graphics dump is concerned, Printer Pac II offers a shaded dump that will print across the width of a quarto sheet. The quality of the dumps is quite reasonable, hoewver if this is the reason that you are buying the program, then forget it. There have been better screen dumps printed in the various Amstrad magazines at odd times. I've already got two or three others that do better jobs.

From what I can see of the buffer, it looks like a very good idea, but for the life of me I couldn't get it to work. The best idea seemed to be to set the buffer at 16k and use the 1k buffer in my printer to allow me to dump a screen to the printer and then have command returned to me almost immediately. I tried various combinations of the commands but all to no avail. It still would not work. Maybe there was a combination that I missed.

There are also two commands that allow the echo of whatever is printed by the computer on the screen to be printed at the printer. Very similar to CONTROL-P as used under CP/M. Most of the commands that are available under this program come in two's, an ON command and an OFF command. This is true except for | TEXT and | DUMP.

After comprehensively testing this program, I must say that I am rather disappointed with the end result, as it doesn't really do anything any better than a couple of other graphics dumps that I already have. Its only redeeming feature would appear to be the multi-size buffer, but I'm afraid that I couldn't get it to work.

I have included a couple of copies of dumps done by the program (*sorry, no room to print them - Ed*), however the quality of the dumps doesn't make up for the other shortcomings of the program.

SYSTEM X - Pride/Pactronics - $39.95

The same comments concerning packaging made about Printer Pac II, apply to this product.

Only 5k long and in two parts, the program can be copied to your utilities disc without any trouble. This is how it should be, but with piracy the way that it is, it is not overly surprising that manufacturers are protecting their software by various devious means.

After running the program, I though that I was loading a game with the amount of noise that the title screen produced. After the title screen, comes another screen listing the new RSX commands that are available to be used by the owner. You really do need to read the little booklet that comes with the program to understand what some of the commands are for. Some of them are self explanatory, but most are not. Also, although there is a help command, it only lists the commands that are there for you to use, it doesn't show you the parameters that some require to operate correctly.

Now to the new commands:

There are four new ways of clearing the screen, up, down, left and right. The problem is that they will only clear one line or one character from the screen, depending on whether you are going up/down or left/right. The easiest way around this is a simple loop that will call the command the required number of times. Could make for some interesting screen clearing displays.

Two other commands exist to control the CAPS LOCK key from within a program. Seems to be no more useful than using POKE 46642,255 and POKE 46642,0 as used on the 6128. In fact could be less useful, as SYSTEM X must be in memory for these commands to work.

The visibility of the cursor and the screen are controlled by four of the other commands that are in the package. Can't really see much use for any of these commands, but you might be able to use them.

For machine code programmers, there are three extra commands to keep you happy. These include a command to PEEK into the memory space occupied by a ROM. The other two commands allow you to do a double PEEK or double POKE into two consecutive memory locations in RAM.

Further to these commands are |PROTEC and |DEPRO, which would seem to me to be rather self explanatory. I think most of you should be able to figure out what they will do.

To help 464 owners make much better use of their machines, there are three special commands. Two of these are special graphics commands such as |CIRCLE and |FILL, whilst the third is a command that virtually upgrades the machines to the ROM 1.1 standard as used in the disc drive machines.

To further help 464 owners, there is also |ZIP. This is a command to allow you to change the recording speed of the Datacorder in your machine. Similar to the TOMCAT utility also produced by Pride.

The printer can also be controlled by two of the new comands. These are similar to CONTROL-P as used by CP/M and are different to the commands used by Printer Pac II.

A help command is also provided, although this only provides a list of commands, not parameters as required by those commands to operate properly. Further commands still exist in this package, but I won't go into those.

Whether you will find this program useful will depend on what you want it to do. There was a toolbox program a little while ago in APC that offered a lot of the commands that are available with SYSTEM X, and a few more besides. Its only problem was that it would only work with a 464, not the disc drive machines, whereas SYSTEM X works quite well on my 6128.

I enjoyed playing with the product, but as with all reviews, the question remains,"Would I buy this program?". Unfortunately, I don't believe that I would.

It doesn't really offer anything that I couldn't do myself. For those of you out there that are not really into programming, it could be very useful. Although I would say that if you have a 464, try to get hold of the copy of APC with the toolbox by Justin Moffitt. Try to have a look at the program before you decide to buy it.

Just one last thing if you do decide to buy any of the PRIDE UTILITIES range, buy them on cassette if possible and then use PRIDE'S own TRANSMAT to transfer them across to disc. I don't believe that this breaks copyright and it will save you some money. PRIDE should be congratulated for having the gumption not to protect their software and hurt the legal owners of the software to the extent that they are not able to make a back-up copy. WELL DONE, PRIDE.

UPDATE ON DISC DEMON
Beebugsoft/Pactronics - $69.95

For those of you that read my review of Disc Demon a couple of months ago, I must bring you up to date on my further usage of this marvellous package. To date, it is the fastest disc copier and disc formatter that I have come across. To copy a standard format disc from drive A to drive A takes only four changes of the disc. This is better even than Disckit3 on the 6128. Disc Demon reads in the first twenty tracks and then prompts for a change of disc and writes them out. It then does the second twenty the same way. As for formatting a disc, it offers a choice of three formats, DATA, SYSTEM and IBM. It will not ask for a system disc to read the system tracks as with most other formatters, but simply prompts you to change the disc and then formats a side of a disc in 17 seconds. Ultra quick. DiscKit3 takes 33 seconds to do the same job. The only problem is that SYSTEM is CP/M 2.2 not CP/M 3.1. If you don't have a copy, GET ONE!!!

CP/M Revisited
A Primer for Beginners - Part Four
from Fred Robertson-Mudie

This month we will continue the discussion of Public Domain CP/M 2.2 Transient Programs by considering one of the more useful ones available, namely NSWEEP.COM and its associated Document file NSWEEP.DOC.

There are various versions and variants of this program, including NUSWEEP, SWEEP and CWEEP, but discussion here will be confined to NSWEEP Version 2.07, a copy of which is due to appear on The Amstad User Year Disc No. 4, as this version is one of the later ones and covers most, if not all, of the facilities contained in other variants.

NSWEEP is a very useful utility which allows for either individual or mass manipulation of files. Using the program is quite simple as the command menu can be accessed during use. One of the main uses for the program is to "squeeze" and "unsqueeze" files on a disc, regardless of the type of file. However, straight ASCII files, e.g. text or document files, will squeeze a lot more than binary files, e.g. COM files. This facility can be very useful for storing, or archiving master files as it can save up to 50% of the disc space used. 'For example, a 40k text file might squeeze down to 20k, though a 40K COM file might only squeeze down to 35K (the amount of squeezing will vary from file to file. BASIC, ASM etc. files can also be squeezed with this program.

To use the program, simply type NSWEEP at the prompt, and hit the enter key, i.e.:

A>NSWEEP [Enter]

and (depending on what is on your disc) the following will be displayed, including details of the first file on the disc:

```
NSWEEP   - Version 2.07    07/17/1984
     (c) Dave Rand, 1983, 1984
         Edmonton, Alberta

Drive A0:????????.???   168K in   46 files.    1K free.

   1. A0: BITMAP  .COM   1K : ?
```

The cursor will remain at the colon following the first file (PIP.COM in this example) waiting for instructions. Then type ? (i.e. a question mark) and the command menu will be displayed as shown in the box in the next column.

Full details of the various commands are contained in the DOC file for the program so comment here will be confined to a couple of important points. To display each file on the disc, one by one, the carriage return or

```
NSWEEP   - Version 2.07    07/17/1984
     (c) Dave Rand, 1983, 1984
         Edmonton, Alberta

A - Retag files            | Q - Squeeze/Unsqueeze tagged files
B - Back one file          | R - Rename file(s)
C - Copy file              | S - Check remaining space
D - Delete file            | T - Tag file for mass
E - Erase T/U files        | U - Untag file
F - Find file              | V - View file
L - Log new disk/user      | W - Wildcard tag of files
M - Mass file copy         | Y - Set file status.
P - Print file             | ? - Display this help
X - Exit to CP/M           | cr, sp - Forward one file

  168K in   46 files.     1K free.
  Tagged files =    0K (    0K).

   1. A0: BITMAP  .COM    1K : █
```

space bar should be keyed. The X command will exit to CP/M, and a ? will display the command menu as above. To squeeze a file, it is simply a case of moving down through the files on disc, using the space bar, until the relevant file is displayed, then enter T to tag the file, followed by Q to instruct the program that you wish to either squeeze or unsqueeze it. The program will ask which by displaying the following:

Squeeze/Unsqueeze/Reverse (S/U/R)

After entering your instruction, i.e. S to squeeze the file, the program will then ask for the Drive/User for the destination file. If, for example, you are on Drive A and wish the squeezed file to go to Drive B, just enter B/0. The program will then process the file which, if it is a very long file, may take up to a minute and, when finished will return to the file list. The squeezed file will now be on Drive B and will have a filename extension with a Q as the middle letter, e.g. a BAS file will be BQS, a DOC file will be DQC, a COM file will be CQM etc. A file can be unsqueezed in the same manner. A squeezed text file can be viewed, without unsqueezing it, by using the V command. A binary file, e.g. a COM file, cannot, of course, be viewed either squeezed or unsqueezed.

Files can also be copied, erased, squeezed, unsqueezed etc., either individually or en masse, depending on whether they are tagged or not, and the program can be used to set the status of files to Read Only or System.

As can be seen, NSWEEP can be a very useful program, particularly if there are a lot of ASCII files on disc taking up a lot of valuable space.

Finally, please read the document file (NSWEEP. DOC), and copy the program onto a blank disc, along with a number of other assorted files, and practice with it for a while. Under normal circumstances nothing can go wrong, but, hitting the wrong key at the wrong time could cause the mass erasure of all the files on the disc!

ADVENTURER'S ATTIC
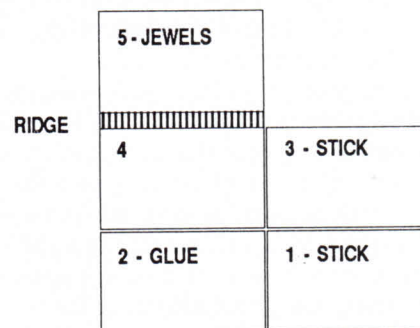
by Philip Riley

A DIFFERENT POINT OF VIEW

This month I have decided to feature a letter and listing sent in by Danny Liebke, aged 15, from Ocean Shores in N.S.W. It reads:

// Please find enclosed both a listing and a copy on disc of an adventure base, ie. a program which can serve as the basis for writing adventures. Written below is an explanation of how to create an adventure, using this program, in nine easy steps:

1. Type in (or load in) the base program
2. Draw your map and work out the problems to be solved (refer to previous Amstrad Users if necessary) and number the rooms.
3. Starting from BASIC line number 10000 type in the data for the rooms in the following manner:- <line number> DATA <room description>,<room number to north>,<room number to east>,<room number to south>,<room number to west>. Try to use as much detail as possible in your room description.
4. Continue on to the object data in the following manner: - <line number> DATA <object>,<object description (what you would see if you EXAMINED it)>,<room which the object starts in>. If the object doesn't start in any room then consider it starting in room 0. Once again, use plenty of detail in your description.
5. Adjust the variables, rooms and objects, in line 30 to the appropriate number of rooms and objects.
6. Now the fun begins. You must add your own commands to get past problems that you have designed. Starting from line 300 add these commands in the following manner:- <line number> IF verb$="<first three CAPITAL letters of command>" THEN <line number to goto to process command>.
7. Now the tricky part. Starting from line 1190 you must write a routine to process the command. Depending on what you want to do you must process it in different ways:
a) If you have to be in a certain room to process this command you must put in IF p=<room number> THEN
b) If you have to have a certain object you must type in IF object (<object number>)=255 THEN
These commands may be combined by using AND.
c) From here you must work out the results of this command. If it opens a new passage through to another room you must type THEN map(<room number to change>,<direction number 1-N,2-E,3-S,4-W>)=<new room number>
d) After all this you must type <line number> GOTO 100.
8. Test run the program.
9. Save the program.

Confused? I don't blame you. That's why I've prepared a short example:-

1. I've loaded it in
2. Map:-

```
        ┌─────────────┐
        │ 5 - JEWELS  │
        │             │
RIDGE   ├═══════════──┼─────────────┐
        │ 4           │ 3 - STICK   │
        │             │             │
        ├─────────────┼─────────────┤
        │ 2 - GLUE    │ 1 - STICK   │
        │             │             │
        └─────────────┴─────────────┘
```

3.
```
10000 DATA You are at the entrance to the
dungeon. A soft breeze blows your hair and the
dungeon is waiting for you. This simply carved
room stinks of rotting orcs.,3,0,0,2    '0
represents no room to go to in that direction
10010 DATA this small filthy room is
reasonably dark. The only light comes from a
glint to the north.,4,0,1,0
10020 DATA This large room has hundreds of
small holes. These holes however are too small
for anyone to fit through.,0,0,1.4
10030 DATA This room has a deep crevice to the
north and is impossible to get across. That's
a pity because there are thousands of pieces
of gold over there.,0,3,2,0
10040 DATA This is a little room and has a
sign on the wall reading 'A Curse on Anyone
Who Steals My Money',0,0,0,0 'You can't go
anywhere from this room.
```

4.
```
10050 DATA Small Stick, This small stick
appears to be half of a longer stick,1
10060 DATA Pot, This pot has got Dwarven glue
in it,2
10070 DATA Little Stick, this little stick
appears to be half of a longer stick,3
10080 DATA Large Stick, This stick has been
crudely glued together,0    'This object is
only used once you have glued the two little
sticks together
10090 DATA Gold Coins, These coins appear to
be very valuable,5
```

5. `30 rooms=5:objects=5`
6. ```
   300 IF verb$="GLU" THEN 1190      'If you try
   to GLUE the sticks together
   310 IF verb$="COV" THEN 1210      'If you try
   to COVER the crevice
   ```
7. ```
   1190 IF object(1)=255 AND object (2)=255
   AND object (3)=255 THEN object (4)=255:
   object(1)=0: object(2)=0 ELSE 100      'If
   you have the 1st object (Stick), 2nd object
   (Pot),3rd object(Stick) then you get object
   4 (The big stick) but lose object 1 and 2
   (set to 0). If you don't have one of these
   things then you go back to 100
   1200 GOTO 100      'go back to 100
   1210 IF p=4 AND object (4)=255 THEN
   map(4,1)=5:room$(4)="This small room is
   connected to the room to the north via a
   large stick":object (4)=0 ELSE 100      'If
   you are in room 4 and have object 4 then
   you create a passageway from room 4 to the
   north, room 4's description is changed and
   the stick disappears. If you don't satisfy
   these conditions then go back to 100
   1220 GOTO 100      'go back to 100
   *320 IF object (5)=255 THEN PRINT "You have
   won" : END      'Check for winning state. The
   5th object (treasure) must be had.
   ```

This small adventure hopefully has shown you how to write more complex adventures by using these procedures.
Danny Liebke. **//**

I am always interested in looking at other people's methods for writing adventures and although I probably won't use the entire system I have certainly seen at least one part of it that I will use in my own adventure base from now on. Everybody has their own base that they use, but no matter how good that base is, you can always find ways of improving it by looking at how other people tackle various problems.

I should mention that I had planned to describe in a future article the use of READ and DATA in adventures. In the above listing the data is read in at the beginning of the game, but this can take a lot of memory. One way to save a little memory is to restore the data each time and then to read through the data on a FOR-NEXT loop until you reach the room number that you wish to print. Using this method you will also save memory as you will not need a DIMensioned array for the room descriptions.

As I mentioned before, I am always interested in other peoples ideas. This column is not just here to help you solve the adventures that you have bought, we would also like to hear from you if you have a point to make on programming an adventure. So keep those letters coming in.

Talking about letters, our Editor has obviously had a good holiday because he has given us more than our normal space for the column this month. This gives me a chance to print the long letter of answers (and some questions) sent in by Adrian Booth of WA. It reads:

To Philip Riley, Adventurer's Attic
Some answers for:
Clinton Willis - *Mordon's Quest*
To get past the pygmy, get the pipe, the berries (they're

```
1 'Adventure Base
2 'Danny Liebke
3 'The Amstrad User Feb87
4 '
10 POKE 46642,255
20 MODE 2:INK 0,14:INK 1,0:BORDER 14:PEN
1:PAPER 0
30 rooms=50:objects=20
40 DIM room$(rooms),map(rooms,4),object$
(objects),object(objects),examine$(objec
ts),direction$(4)
50 direction$(1)="North":direction$(2)="
East":direction$(3)="South":direction$(4
)="West"
60 RESTORE 10000
70 FOR a=1 TO rooms:READ room$(a):FOR b=
1 TO 4:READ map(a,b):NEXT b,a
80 FOR a=1 TO objects:READ object$(a),ex
amine$(a),object(a):NEXT a
90 p=1
100 CLS
110 PRINT room$(p)
120 PRINT "I can see:";:FOR a=1 TO objec
ts:IF object(a)=255 THEN PRINT object$(a
):flag=1
130 NEXT a:IF flag=0 THEN PRINT"Nothing"
 ELSE flag=0
140 PRINT"I can go:";:FOR a=1 TO 4:IF ma
p(p,a)>0 THEN PRINT direction$(a)
150 NEXT a
160 PRINT:PRINT:INPUT"What now ?";order$
170 length=LEN(order$)
180 FOR a=1 TO length:IF MID$(order$,a,1
)=" " AND flag=0 THEN space=a:flag=1 ELS
E IF MID$(order$,a,1)=" " AND flag=1 THE
N space2=a
190 NEXT :flag=0
200 IF space2=0 THEN space2=space
210 IF space2=0 THEN verb$=order$:GOTO 2
30
220 verb$=LEFT$(order$,space-1):noun$=RI
GHT$(order$,length-space2)
230 space=0:space2=0
240 verb$=LEFT$(verb$,3):noun$=LEFT$(nou
n$,3)
250 IF verb$="INV" THEN 1000
260 IF verb$="GET" OR verb$="TAK" OR ver
b$="PIC" THEN 1030
270 IF verb$="DRO" OR verb$="PUT" THEN 1
060
280 IF verb$="GO" OR verb$="N" OR verb$=
"NOR" OR verb$="S" OR verb$="SOU" OR ver
b$="E" OR verb$="EAS" OR verb$="W" OR ve
rb$="WES" THEN 1090
290 IF verb$="EXA" OR verb$="SEA" THEN 1
160
990 PRINT"I don't understand":GOTO 100
1000 PRINT"I have:";:FOR a=1 TO objects:
IF object(a)=255 THEN PRINT object$(a):f
lag=1
1010 NEXT a:IF flag=0 THEN PRINT"Nothing
" ELSE flag=0
1020 GOTO 100
1030 FOR a=1 TO objects:IF LEFT$(object$
```

```
(a),3)=noun$ AND object(a)=p THEN object
(a)=255:GOTO 1050
1040 NEXT a:PRINT"You can't"
1050 GOTO 100
1060 FOR a=1 TO objects:IF LEFT$(object$
(a),3)=noun$ AND object(a)=255 THEN obje
ct(a)=p:GOTO 1080
1070 NEXT a:PRINT"You can't"
1080 GOTO 100
1090 IF verb$="GO" THEN direction$=noun$
 ELSE direction$=verb$
1100 direction$=LEFT$(direction$,1)
1110 IF direction$="N" AND map(p,1)>0 TH
EN p=map(p,1):GOTO 1150
1120 IF direction$="E" AND map(p,2)>0 TH
EN p=map(p,2):GOTO 1150
1130 IF direction$="S" AND map(p,3)>0 TH
EN p=map(p,3):GOTO 1150
1140 IF direction$="W" AND map(p,4)>0 TH
EN p=map(p,4):GOTO 1150
1150 GOTO 100
1160 FOR a=1 TO objects:IF LEFT$(object$
(a),3)=noun$ AND (object(a)=p OR object(
a)=255) THEN PRINT examine$(a):GOTO 1180
1170 NEXT a:PRINT"You can't"
1180 GOTO 100
```

poisonous) and the long thorns, and type MAKE BLOWPIPE. (Think of the Amazon Indians). Go to the pygmy and type USE BLOWPIPE. Take the pygmy to the plant and type GIVE PYGMY TO PLANT. A word of advice. . . . if you want to spend THREE MONTHS trying to solve the next puzzle (as I did), then ignore the HELP advice. If you don't. . . . . .

James Edmundsen - *The Hobbit*
Beron does not come with you. If the goblins dungeon turns dark, QUIT . . . it seems to be all you can do. If the 'get the dragon from Beron' is not a misprint, then your game has a bug. If you mean 'get TO the dragon from Beron', go to Running River. YOU NEED THE RING. If the elf doesn't capture you (that's the easiest way), LOOK ACROSS (RIVER) ; (you see a boat); THROW ROPE ACROSS until it LANDS IN THE BOAT, PULL ROPE. CLIMB INTO the boat, CLIMB OUT. Cut through the Webs CONTINUALLY, and eventually get to the magic door. WAIT until an elf comes out of the door, then enter. CLIMB INTO BARREL (some versions use JUMP ON/IN/INTO BARREL). WAIT until the Butler throws the barrel out the trapdoor. Then WAIT until you come to Long Lake. You see Bard, depending upon the version either TAKE BARD (!) or SAY TO BARD "FOLLOW ME". Follow the river until "the current is too strong to go further". Go UP. GOOD LUCK!!!!
Please note: I played these games on a COMMODORE-64; they should still be the same, right???

Some Questions on: (lots!)
1. In EMPIRE OF KHAN, how do I find the other (green?) potion? I have the one I found under the flagstone. How do I get the diamond from the snake?
2. In MORDON'S QUEST, how do I get past (or even to) the octopus? I always run out of air (yep, I got the aqualung). The Roman city has me completely stumped. How did I get out of the Arena? What is the significance of the keyhole with the steam coming out? HELP! What can I do in the future city? I have fixed the reactor and got the globe. How do I get through the Invisible Barrier? What do I say in the Tele-Video room to the sales robot? What does the ingot do? Is there anything you can do at the farm apart from the battery? I love this game!
Lots of questions! In return, some more hints:
Mordon's quest
1. At the quicksand, you can either DROP BLANKET or, as Classic Adventurers may have guessed, just type QUICKSAND (QUIC).
2. If you haven't even found the jungle, you aren't even TRYING. Climb the drainpipe and Mordon will appear to you in the house.
3. The dagger is not a treasure. Put it as subtly as you like, Phil; you get the jewelled dagger, and use it to SACRIFICE the frog that Tarzan gives you. (Sacrifice it at the altar).
4. One of the recorded messages on the phone is "all that glitters is not gold". (DIAL 1134?) sorry. . . . I don't remember the number!
5. The reactor. First, go to the futuristic city, take the geiger counter. Go to the Roman time, go to the farm, not the city. Go into the barn . . . your geiger counter clicks. LOOK or SEARCH. . . . you find a Nuclear battery. Go back to the city. Go to the droid, type (half an hours work gave me the right word) INSERT BATTERY. The droid's eyes light up. Go to the reactor control room. press 1,3,2,4. (Is that right?). Anyway, you want to (1) close the control room door, (2) activate the droid, (3) open the reactor doors (the droid enters and fixes it), and finally, (4) decontaminate the reactor. Simple isn't it? Go into the reactor, go up in the lift (TOUCH PLATE) get the globe, go back out.
6. The shingle beach. Go N,N,NW. You see a rowboat! WITH AN AQUALUNG! Get in, or whatever. It sinks, go down get aqualung. Go north and then drown. (Why do I get the feeling that's not right?)
Empire of Khan:
1. It is all pretty straightforward in this game. One thing you might miss. . . where the "cat sits gazing hungrily into the sea" . . . get the powder-keg (next location) . . . make sure you're where the cat is . . . LIGHT KEG and then (My God) PUT KEG IN SEA. ??? Surprise, surprise, a fish is washed up on to the deck. Give it to the cat. Take the cat. Kill the mouse with the cat. (It's in the sewers). Go to the Widow's house. Drop the mouse. She runs out screaming. Take the key. Go to the trapdoor. (pyramid) Open it. Use the plank from the ship...put plank in crack. Look. . . an archway opens in the wall !!! WOW! Go through it. See the sarcophagus, open it. A mummy leaps out. Kill it with the flaming torch (you did pick it up, didn't you). Take the ruby. Go down. Go west. Take the sapphire. Drop the chest. Sit on the chest. You float up through the trapdoor.
2. The fortune teller Shanet says SEEK IN THE TOWER OF THE MOON. I haven't found anything there. The carpet the Weaver gives you is magic: say "sim zalabim" and it flies... when you are ready. I am not. I don't know why not. By the

way, I found out these on a Commodore 64 by using a machine language disassembler, and from BASIC poking the screen value of every memory location.

3. Take the flagstone in the Apothecary's shop. Take the potion. The cheat method described above have two interesting phrases . . . 'your strength builds' and 'the potions save your life'. I have the blue potion. Say TAKE POTION and it says THE GREEN POTION IS NOT HERE. So, there are 2 potions. Drink them both to beat the snake, I s'pose.

4. Give the date to Krizcokz. BEWARE . . . cheating reveals that Lizni, while he will help to start, is a true servant of the evil king! You still need the bottle. . . it gets filled with poison. Put the poison into the stewpot. Oh . . . You have to climb a tree! I don't know where.

PLEASE HELP!!!

I know, I know, I know it's old and common . . . I cannot find the last treasure (the one in the maze) in Classic Adventure! (I have the C-64 version). I know everything else, including how to get out, and even what happens when the game finishes. Please, Please someone help!

Hope that I've been more of a help with the hints than a bother with the questions.

Adrian Booth - Orelia, W.A.

THE LIGHTHOUSE
A Text Adventure Game - Part Two

by Philip Riley

For longer than anyone can remember the old lighthouse has stood on the Island of Lost Souls just off the coast of Southern England. But everyone knows its grim history .... that is, if you read last month's issue! Here's a bit more to test your typing accuracy - the last part comes next month.

```
1210 PRINT"YOU ARE IN A SMALL CAVERN THA
T HAS A      RATHER LOW ROOF. IF YOU WERE
ANY TALLER YOU WOULD PROBABLY KNOCK YOUR
 HEAD. YOU SEE EXITS TO THE NORTH, SOUTH
AND EAST.":GOTO 1550
1220 PRINT"YOU ARE IN A SMALL CAVERN. LO
OKING      AROUND YOU SEE EXITS TO THE N
ORTH, SOUTHAND EAST.":GOTO 1550
1230 PRINT"YOU HAVE ENTERED A SMALL CAVE
RN THAT HASA SMALL POOL OF OIL IN THE MI
DDLE OF THEFLOOR. THE ONLY EXIT IS TO TH
E NORTH.":GOTO 1550
1240 PRINT"YOU ARE IN A LARGE CAVERN THA
T HAS AN    EXTREMELY HIGH ROOF. STANDING
 IN THE    MIDDLE OF THIS CAVERN YOU CAN
NOT SEE ANYOF THE EXITS.":GOTO 1550
1250 PRINT"YOU ARE IN A SMALL CAVERN. YO
U CAN SEE  EXITS TO THE NORTH, EAST AND
WEST.":GOTO 1550
1260 PRINT"YOU ARE IN A SMALL PASSAGE TH
AT RUNS    NORTH AND SOUTH. YOU CAN FEEL
 A COOL    BREEZE BLOWING FROM THE NORTH
":GOTO 1550
1270 IF t7=1 THEN PRINT"YOU EMERGE FROM
THE CAVES ONTO A NARROW ROCK LEDGE THAT
IS ON THE SIDE OF A      SHEER CLIFF. YOU
 CAN SEE THE REMAINS OF A ROPE BRIDGE BE
ING SMASHED AGAINST THE ROCKS HUNDREDS O
F FEET BELOW YOU.":GOTO 1550
1280 PRINT"YOU HAVE EMERGED FROM THE CAV
ES ONTO A  NARROW LEDGE THAT IS PART OF
SOME SHEER CLIFFS IN A GORGE. 200 FEET B
ELOW THE   SEA CRASHES AGAINST THE ROCKS
. A ROTTINGROPE BRIDGE SPANS THE GORGE."
:GOTO 1550
1290 IF t7=0 THEN PRINT"YOU CROSS THE BR
IDGE. IT SWAYS AND       CREAKS AS YOU CR
OSS. YOU JUST MANAGE TO GET TO THE OTHER
 SIDE BEFORE IT          COLLAPSES.":t7=1
:yp(225)=2
1300 PRINT"YOU ARE IN A SMALL NARROW PAS
SAGE THAT   RUNS NORTH AND SOUTH. YOU CAN
```

```
FEEL A     COOL BREEZE BLOWING FROM THE
SOUTH.":GOTO 1550
1310 PRINT"YOU HAVE ENTERED A SMALL CAVE
RN WITH     EXITS TO THE SOUTH AND WEST."
:GOTO 1550
1320 PRINT"YOU ARE IN A SMALL CAVERN THA
T HAS       THOUSANDS OF BATS CLINGING TO
 THE ROOF. THE SQUEAKING NOISE FROM THEM
IS ALMOST DEAFENING. YOU CAN MOVE NORTH
OR WEST.":GOTO 1550
1330 PRINT"YOU HAVE ENTERED A SMALL CAVE
RN WITH     EXITS TO THE NORTH AND EAST."
:GOTO 1550
1340 IF t6<>2 THEN PRINT"YOU WALK ALONG
AN EAST-WEST PASSAGE      UNTIL YOUR WAY
IS BLOCKED BY MANY LARGE COBWEBS. LOOKIN
G AT THE COBWEBS TO THE  WEST YOU SEE TH
AT THEY ARE CRAWLING WITHHUNDREDS OF TIN
Y SPIDERS.":GOTO 1550
1350 PRINT"YOU ARE IN A NARROW EAST-WEST
 PASSAGE.   THE TATTERED REMAINS OF HUNDR
EDS OF      COBWEBS HANG FROM THE WALLS."
:GOTO 1550
1360 PRINT"YOU WALK ALONG A NARROW PASSA
GE UNTIL    YOU REACH A SHARP TURN. YOU C
AN MOVE TO THE SOUTH OR WEST FROM HERE."
:GOTO 1550
1370 PRINT"YOU WALK ALONG A SHORT TUNNEL
 UNTIL YOU REACH A CORNER. YOU CAN MOVE
TO THE      NORTH OR EAST FROM HERE.":GOT
O 1550
1380 IF t5=0 THEN PRINT"YOU WALK ALONG A
 SHORT, NARROW TUNNEL    UNTIL YOU REACH
A DEAD END. LOOKING      AROUND YOU NOTIC
E THAT THE WALL TO THE   NORTH IS NOT MAD
E OF STONE, IT IS A      BRICK WALL.":GOT
O 1550
1390 PRINT"YOU ARE AT THE BOTTOM OF A FL
IGHT OF     STAIRS THAT LEAD UPWARDS INTO
 DAYLIGHT.":GOTO 1550
1400 PRINT"YOU ARE AT THE SOUTH WEST COR
NER OF THE ISLAND. THE SEA CRASHES AGAIN
ST THE      ROCKS 300 FEET BELOW YOU TO T
HE SOUTH    AND WEST. NOT MUCH ELSE CAN B
E SEEN IN   THE MIST.":GOTO 1550
1410 PRINT"YOU ARE AT THE SOUTH END OF T
HE ISLAND, TO THE SOUTH YOU CAN SEE THE
SEA         CRASHING AGAINST THE ROCKS 30
0 FEET      BELOW. NOT MUCH ELSE CAN BE S
EEN IN THE THICK MIST.":GOTO 1550
1420 PRINT"YOU ARE AT THE SOUTH EAST END
 OF THE     ISLAND. THE SEA SMASHES AGAIN
```

```
ST THE      ROCKS 300 FEET BELOW YOU TO T
HE SOUTH    AND EAST. NOT MUCH ELSE CAN B
F SEEN      THROUGH THE THICK MIST.":GOTO
 1550
1430 PRINT"YOU ARE AT THE TOP OF THE CLI
FFS ON THE WESTERN SIDE OF THE ISLAND. 3
00 FEET     BELOW YOU TO THE WEST THE SEA
 CRASHES    AGAINST THE ROCKS. NOT MUCH E
LSE CAN BE SEEN THE THICK MIST.":GOTO 15
50
1440 PRINT"YOU ARE ON TOP OF THE ISLAND.
 YOU CANNOTSEE MUCH THROUGH THE THICK MI
ST THAT     SHROUDS THE ISLAND, BUT YOU C
AN SEE A    FLIGHT OF STONE STEPS THAT LE
AD DOWN     INTO THE ISLANDS MANY CAVES."
:GOTO 1550
1450 PRINT"YOU ARE ON TOP OF THE ISLAND.
 YOU CANNOTSEE MUCH THROUGH THE THICK MI
ST THAT     SHROUDS THE ISLAND.":GOTO 155
0
1460 PRINT"YOU ARE AT THE TOP OF THE CLI
FFS ON THE EASTERN SIDE OF THE ISLAND. L
OOKING OVERTHE EDGE OF THE CLIFFS TO THE
 EAST YOU   CAN SEE THE SEA CRASHING AGAI
NST THE     CLIFFS 300 FEET BELOW YOU. NO
T MUCH ELSECAN BE SEEN IN THE MIST.":GOT
O 1550
1470 PRINT"YOU ARE AT THE NORTH WEST COR
NER OF THE ISLAND. LOOKING DOWN YOU CAN
SEE THE SEACRASHING AGAINST THE ROCKS 30
0 FEET      BELOW YOU. NOT MUCH CAN BE SE
EN IN THE   MIST, BUT YOU CAN SEE A LARGE
 PILE OF    STONES.":GOTO 1550
1480 PRINT"YOU ARE AT THE NORTHERN END O
F THE       ISLAND. SHEER CLIFFS STOP FUR
THER        PROGRESS NORTH. NOT MUCH CAN
BE SEEN IN THE MIST.":GOTO 1550
1490 PRINT"YOU ARE AT THE NORTH EAST COR
NER OF THE ISLAND. YOU CANNOT MOVE EAST
OR NORTH    DUE TO THE SHEER CLIFFS THAT
PLUNGE 300 FEET DOWN TO THE SEA. YOU CAN
NOT SEE     MUCH IN THE THICK MIST THAT S
HROUDS THE ISLAND.":GOTO 1550
1500 PRINT"YOU ARE ON THE TOP OF THE ISL
AND. NOT    MUCH CAN BE IN THE MIST, BUT
YOU CAN SEETHE OPEN DOORWAY TO THE LIGHT
HOUSE.":GOTO 1550
1510 PRINT"YOU ARE INSIDE THE LIGHTHOUSE
 ON THE     GROUND FLOOR. LOOKING AROUND
YOU CAN SEETHAT THIS IS THE KITCHEN AREA
. YOU CAN   SEE STAIRS THAT LEAD UP TO TH
E NEXT      FLOOR.":GOTO 1550
1520 PRINT"YOU ARE ON THE FIRST FLOOR OF
 THE        LIGHTHOUSE. THIS ROOM IS EMPT
Y EXCEPT    FOR SOME BROKEN BITS OF FURNI
TURE AND    STONE STEPS THAT LEAD UP AND
DOWN TO     OTHER FLOORS.":GOTO 1550
1530 PRINT"YOU ARE ON THE SECOND FLOOR O
F THE       LIGHTHOUSE. LOOKING AROUND TH
E ROOM YOU CAN ONLY SEE STAIRS LEADING D
OWN. YOU    SEE NO WAY OF REACHING THE TO
P FLOOR OF THE LIGHTHOUSE. IT IS THEN TH
AT YOU LOOKUP AND SEE A HOLE IN THE ROOF
.":GOTO 1550
1540 PRINT"YOU ARE ON THE TOP FLOOR OF T
HE          LIGHTHOUSE. YOU CAN SEE THE L
AMP LOCKED BEHIND A STRONG WIRE GRILL."
1550 PRINT"
VISIBLE OBJECTS
":o=0
1560 FOR t=0 TO 21:IF it(t)=n THEN PRINT
 it$(t):o=1
1570 NEXT:IF o=0 THEN PRINT"NOTHING"
1580 GOTO 160
1590 PRINT"YOU ARE DEAD. PERHAPS YOU WOU
LD LIKE TO TRY YOUR LUCK AGAIN <Y or N>"
1600 a$=LOWER$(INKEY$):IF a$="y"THEN RUN
1610 IF a$="n"THEN:CLS:END
1620 GOTO 1600
1630 IF it(0)<>500 THEN PRINT"You don't
have a key.":GOTO 160
1640 IF n=41 AND t1=0 AND c=31 THEN PRIN
T"You unlock the grill.":t1=1:GOTO 160
1650 IF n=136 AND c=25 AND it(0)=500 AND
 t8=0 THEN PRINT"You unlock the door wit
h the key. But  the key breaks in the l
ock.":t8=1:it(0)=0:yh=yh-1:yp(136)=1:GOT
O 160
1660 IF n=268 AND c=25 AND t8=0 AND it(0
)=500 THEN PRINT"It is the wrong key.":G
OTO 160
1670 PRINT"You have nothing that you can
 unlock.":GOTO 160
1680 IF it(8)<>500 AND n<>204 THEN PRINT
"You have nothing to fill it with.":GOTO
 160
1690 IF it(8)=500 AND it(3)=500 AND c=3
THEN PRINT"You fill the lantern with oil
. It flaresup briefly then dies down to
the level  that it was to begin with.":i
t(8)=0:s1=1:GOTO 160
1700 IF n=41 AND t1=1 AND c=29 AND it(8)
=500 THEN PRINT"You fill the lamp with o
il.":t1=2:GOTO 160
1710 IF s1=1 AND n=204 AND c=9 AND it(9)
=500 AND it(8)=204 THEN PRINT"You fill t
he barrel with oil.":it(8)=500:yh=yh+1:s
1=2:s4=1:GOTO 160
1720 IF it(9)<>500 AND c=9 THEN PRINT"Yo
u have no barrel.":GOTO 160
1730 IF s1=0 AND c=9 THEN PRINT"The barr
el is already full.":GOTO 160
1740 PRINT"You have nothing to fill.":GO
TO 160
1750 IF it(10)<>500 THEN PRINT"You have
nothing to strike.":GOTO 160
1760 IF c=10 AND t2=0 THEN PRINT"You str
ike the match and it flares up.  You now
 have a lighted match.":t2=1:GOTO 160
1770 PRINT"You can't strike that.":GOTO
160
1780 IF c=29 AND n=41 AND it(10)<>500 TH
EN PRINT"You have nothing to light it wi
th.":GOTO 160
1790 IF c=10 AND t2=0 AND it(10)=500 THE
N PRINT"You light a match.":t2=1:GOTO 16
0
1800 IF t2=1 AND c=10 AND it(10)=500 THE
N PRINT"The match is already alight.":GO
TO 160
```

```
1810 IF c=29 AND t1=2 AND t2=1 AND n=41
AND it(10)=500 THEN PRINT"Well done you
have managed to light the lamp. The whol
e town will celebrate thisgrand event. B
ut I wonder if you will   still be alive
 in the morning to join inthe celebratio
ns.":END
1820 IF c=29 AND n=41 AND t2=0 THEN PRIN
T"You have no matches.":GOTO 160
1830 PRINT"You have nothing to light.":G
OTO 160
1840 IF it(17)<>500 THEN PRINT"You don't
 have a ";it$(17);" to climb.":GOTO 160
1850 IF n=56 AND c=17 THEN PRINT"You cli
mb the ";it$(17);" to the top floor.":n=
41:GOTO 450
1860 IF n=41 AND c=17 THEN PRINT"You cli
mb down the ";it$(17);".":n=56:GOTO 450
1870 PRINT"Climbing that won't help you.
"*GOTO 160
1880 IF it(1)<>500 AND it(9)<>500 THEN P
RINT"You don't have anything to empty.":
GOTO 160
1890 IF t3=0 AND c=1 THEN PRINT"You empt
y the ";it$(1);" and find a ";it$(0);"."
:it(0)=n:t3=1:GOTO 1550
1900 IF (t3>0 AND c=1) OR (s1=1 AND c=9)
 THEN PRINT"It is already empty.":GOTO 1
60
1910 IF s1=0 AND c=9 THEN PRINT"You empt
y the rum out of the barrel.":s1=1:GOTO
160
1920 IF s1=2 AND c=9 THEN PRINT"You empt
y the oil out of the barrel and it runs
down a small hole in the floor.":s1=1:yh
=yh-1:it(8)=0:s4=0:GOTO 160
1930 PRINT"Emptying that won't help you.
":GOTO 160
1940 IF it(1)=500 AND t3=0 AND c=1 THEN
PRINT"It is full of tea.":GOTO 160
1950 IF it(1)=500 AND c=1 THEN PRINT"It
is empty.":GOTO 160
1960 IF n=173 AND c=26 AND s5=0 THEN PRI
NT"You look down the hole and find a ";i
t$(0);".":s5=1:it(0)=173:GOTO 1550
1970 IF it(9)=500 AND c=9 AND s1=0 THEN
PRINT"It is full of rum.":GOTO 160
1980 IF s1=1 AND it(9)=500 AND c=9 THEN
PRINT"It is empty.2:goto 170
1990 IF it(9)=500 AND s1=2 AND c=9 THEN
PRINT"It is full of oil.":GOTO 160
2000 IF it(5)=500 AND c=5 AND s3=0 THEN
PRINT"It is full of weedkiller.":GOTO 16
0
2010 IF it(5)=500 AND c=5 AND s3=1 THEN
PRINT"It is empty.":GOTO 160
2020 IF it(6)=500 AND c=6 THEN PRINT"It
is full of treasure. This could make you
 a rich man.":GOTO 160
```

Tape subscribers please note that as the final part of this adventure will be published next month, your next tape will include the complete program.

BBBBBBOOKSSSSs

Title		Subscriber Price	Normal Price
Advanced Amstrad CPC6128 Computing (Sinclair)	New stocks in	$ 25.15	$ 27.95
Advanced User Guide		$ 19.75	$ 21.95
Adventure Games for the Amstrad		$ 25.15	$ 27.95
Amstrad Compendium		$ 20.65	$ 22.95
Amstrad Games Book (Pitman/Ramshaw)		$ 14.35	$ 15.95
Amstrad Games Book (Melbourne House)		$ 20.65	$ 22.95
Amstrad Pentacle Adventure Creator	2 left then O/P	$ 8.05	$ 8.95
Basic BASIC	Delivery 03/87	$ 11.45	$ 12.75
Brainteasers for the Amstrad		$ 19.75	$ 21.95
Childs' Guide to the Amstrad Micro	New stocks in	$ 11.65	$ 12.95
Disc System, The Amstrad CPC 464		$ 25.15	$ 27.95
DR CP/M Plus Handbook for CPC6128 & PCW8256	Temp O/S	$ 84.00	$ 89.00
Dynamic Games for the Amstrad		$ 17.95	$ 19.95
Exploring Adventures on the Amstrad		$ 21.55	$ 23.95
Games and Graphics Programming - 464/664/6128		$ 26.95	$ 29.95
Graphics Programming Techniques		$ 22.45	$ 24.95
High Energy Programs for the Amstrad (Post Free)		$ 9.95	$ 9.95
Ins and Outs of the Amstrad		$ 20.65	$ 22.95
Introduction to CP/M Assembly Language		$ 32.35	$ 35.95
Machine Code for Beginners on the Amstrad		$ 17.95	$ 19.95
Machine Language for the Absolute Beginner		$ 20.65	$ 22.95
Making Music on the 464/664 (OK for 6128 too)		$ 19.75	$ 21.95
Master Machine Code on your 464/664		$ 19.75	$ 21.95
Mastering the Amstrad PCW 8256	Delivery 02/87	$ 29.50	$ 32.25
Pitman's First Book of Amstrad Games		$ 11.65	$ 12.95
Powerful Programming for Amstrads 464/664/6128	NEW	$ 22.55	$ 25.05
Practical "C"	NEW	$ 25.80	$ 28.65
Practical Programs for the 464		$ 21.55	$ 23.95
Programming the Amstrad CPC 464		$ 17.95	$ 19.95
Ready made Machine Language routines - 464/664		$ 20.65	$ 22.95
Structured Programming on the 464/664/6128		$ 26.95	$ 29.95
Whole Memory Guide	1 left then O/P	$ 26.95	$ 29.95
Working Amstrad		$ 17.95	$ 19.95
Writing Adventure Games on the 464/664		$ 20.65	$ 22.95
60 Programs for your Amstrad	1 left then O/P	$ 19.75	$ 21.95

How to Order

Send a list of the titles and quantities you require along with a cheque for the total **plus** $5.00 postage and packing (regardless of the quantity you order) to:

THE AMSTRAD USER

Suite 1 , 245 Springvale Road, Glen Waverley, Victoria, 3150
Bankcard, Mastercard or Visa accepted on (03) 233 9661

Back Copies

The Amstrad User (Australian)

Issue 1	February 1985	$4.00
Issue 2	March 1985	Out of Print
Issue 3	April 1985	$4.00
Issue 4	May 1985	$4.00
Issue 5	June 1985	Out of Print
Issue 6	July 1985	$4.00
Issue 7	August 1985	$4.00
Issue 8	September 1985	Out of Print
Issue 9	October 1985	$4.00
Issue 10	November 1985	$4.50
Issue 11	December 1985	$4.50
Issue 12	January 1986	$4.50
Issue 13	February 1986	$4.50
Issue 14	March 1986	$4.50
Issue 15	April 1986	$4.50
Issue 16	May 1986	$4.50
Issue 17	June 1986	$4.50
Issue 18	July 1986	$4.50
Issue 19	August 1986	$4.50
Issue 20	September 1986	$4.50
Issue 21	October 1986	$4.50
Issue 22	November 1986	$4.75
Issue 23	December 1986	$4.75
Issue 24	January 1987	$4.75

Tapes for any of the above	$5.00

Twelve issue subscription:
Magazine only	$37.50

Twelve issue subscription:
Magazine plus tape	$80.00

Year Discs containing all software previously published on
The Amstrad User tapes
Year Disc No 1: Issues 1 - 12	$50.00
Year Disc No 2: Issues 13 - 16	$22.50
Year Disc No 3: Issues 17 - 20	$25.00
Year Disc No 4: Issues 21-24	$25.00

(Tapes or Discs not suitable for the PCW 8256/8512)

Disc Drives

DDI-1 Disc Drive as the first or second drive
for the CPC464 - normally $649 - but for
subscribers to The Amstrad User a saving of
$100 at $549 including courier delivery.
(Non-subscribers may order at the special
price of $589). Prices subject to fluctuation,
so please confirm before ordering.

If PO Box number is quoted in your address then delivery will be
made by the Post Office. Please also include a daytime contact
telephone number in case of delivery problems. 'Phone orders
accepted with Bankcard, Mastercard or Visa.

The Amstrad Computer User (English)

Issue 3	January/February 1985	$5.00
Issue 4	March 1985	$5.00
Issue 5	April 1985	$5.00
Issue 6	May 1985	$5.00
Issue 7	June 1985	$5.00
Issue 8	July 1985	Out of Stock
Issue 9	August 1985	Out of Stock
Issue 10	September 1985	Out of Stock
Issue 11	October 1985	Out of Stock
Issue 12	November 1985	$5.50
Issue 13	December 1985	$5.50
Issue 14	January 1986	$5.50
Issue 15	February 1986	$5.50
Issue 16	March 1986	$5.50
Issue 17	April 1986	$5.50
Issue 18	May 1986	$5.50
Issue 19	June 1986	$5.50
Issue 20	July 1986	$5.50
Issue 21	August 1986	$6.50
Issue 22	September 1986	$6.00
Issue 23	October 1986	$6.00
Issue 24	November 1986	$6.00
Issue 25	December 1986	$6.00

**Subscriptions to this magazine have now closed.
Existing subscribers will be supplied until their
subscription expires.**

Binders ☰ NEW STOCK ☰

In attractive white and silver to protect your
'collection of The Amstrad User. Can also take the
English Amstrad Computer User at a squeeze.
Stocks have now been replenished and the price
remains the same at $12.95 including postage.

Software

See Page 61 for list of titles available on mail order
though The Amstrad User magazine.

**Mail your orders to: The Amstrad User,
Suite 1, 245 Springvale Road
Glen Waverley, Victoria 3150
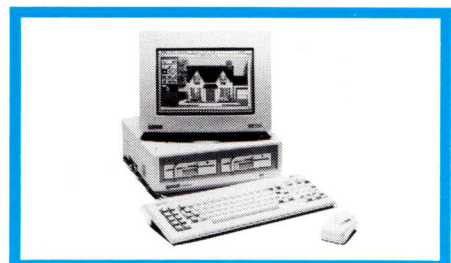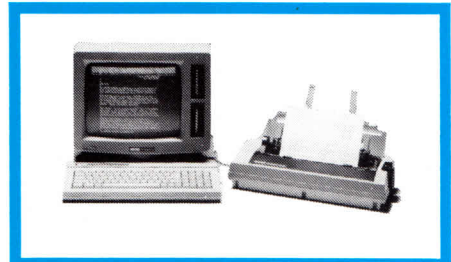or telephone (03) 233 9661 with Credit Card**

IANKEY

KEYBOARD SKILLS TRAINING FOR COMPUTER USERS
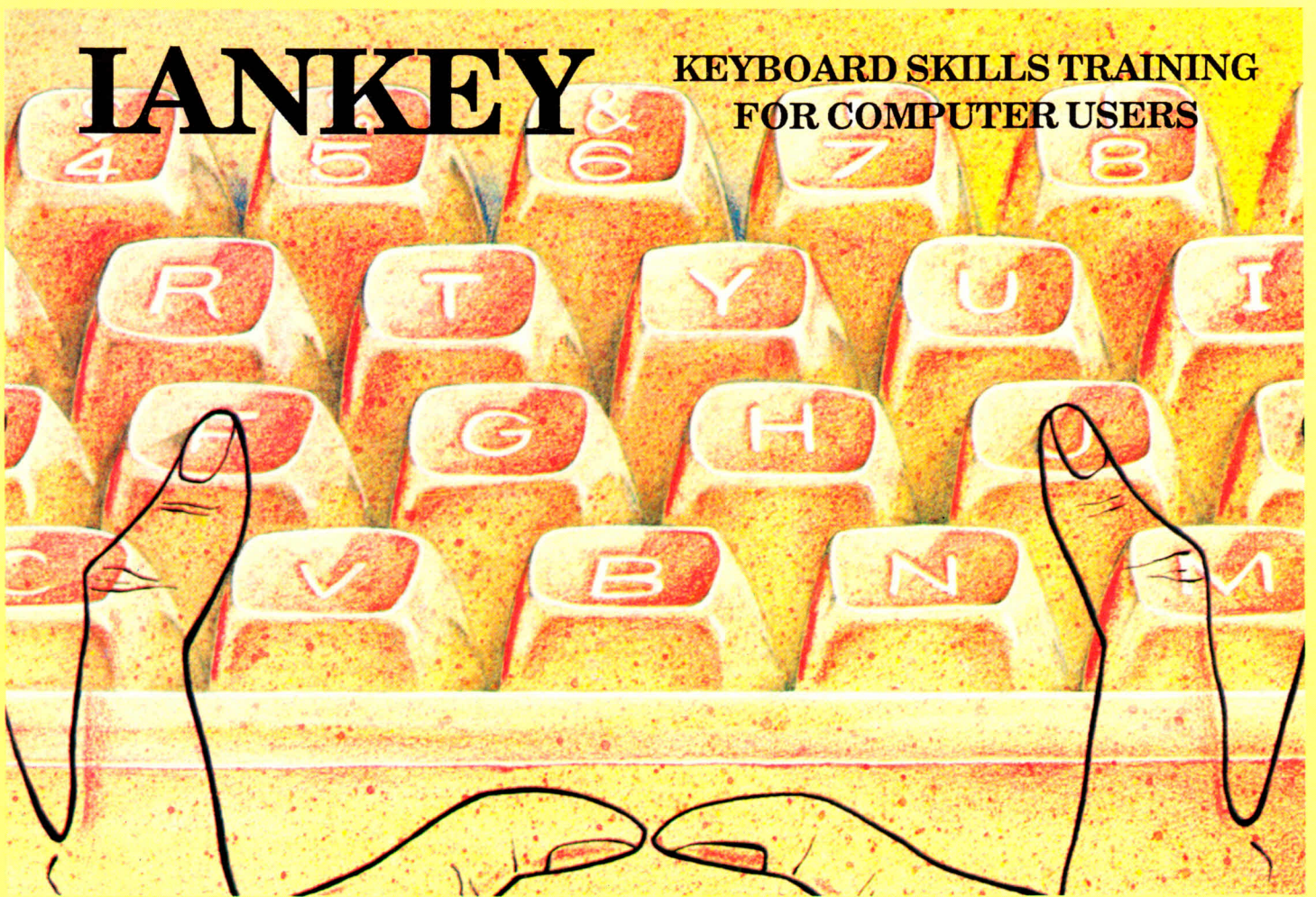
THE EASY WAY TO FAST AND ACCURATE TYPING

Fast and accurate typing is an essential skill in the computer age. Iansyst's range of sophisticated typing training programs are designed specially for busy and serious computer users. The courses are packed with useful tips about typing and using computers; they contain plenty of carefully designed, interesting practice material. And they are enjoyable, too!

CRASH COURSE IN TYPING
for newcomers to computers

Iankey Typing Crash Course takes the new computer user around the whole keyboard as fast as possible, teaching the basics of touch-typing in as little as four hours.
Its unique *fast-track* approach lets you put you computer to use right from the start.
Plenty of interesting practice sessions then help you reach speeds of 40 words a minute and more.

"very robust ... very easy to use and altogether a sound and thoughtfully constructed package'" - MicroDescision
"excellent", "very pleased with it", "extremely good", "Congratulations ... no hesitation in recommending it to our clients." - various customers

Apricot Plc and American Training International have also selected Iankey to publish.

TWO FINGERS TO TOUCH TYPING CONVERSION COURSE
for experienced keyboard users

Iankey Two fingers to Touch-Typing Conversion Course gives new touch-typing skills to experienced two-finger typists.
In this unique course you build on your own knowledge and skill. You do not have to start again from scratch and your typing speed hardly drops whilst you are learning.
In four intensive sessions of as little as one hour each, you quickly upgrade your computer's slowest part - you.

AMSTRAD

CONTACT YOUR MITSUBISHI ELECTRIC AWA DEALER FOR MORE DETAILS