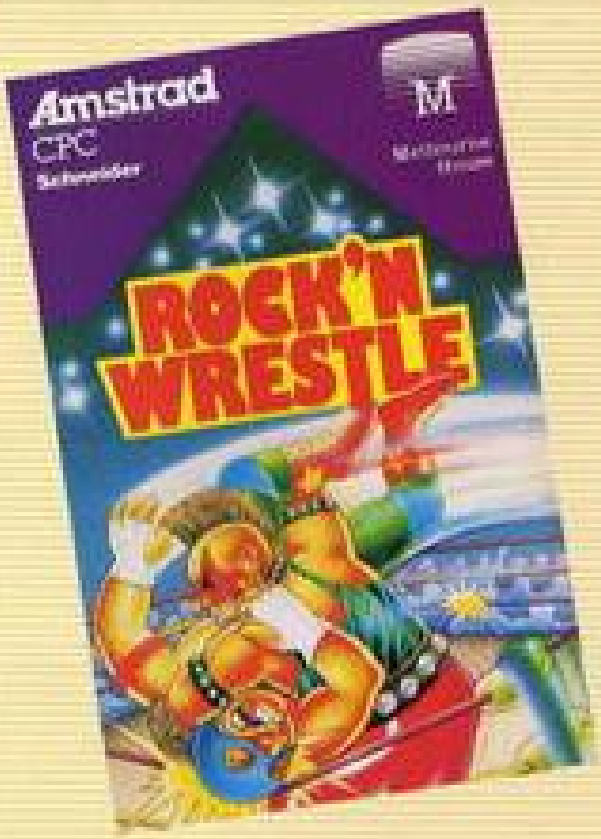
THE AMSTRAD USER

Issue No. 17 $3.50 June 1986



- *RECURSIVE CURVES - AN EXPERIMENT IN LOGO*
- *A REVIEW OF THE NEW DMP-2000 PRINTER*
- *THE FINAL PART OF "ELIZA" and "AMSFILE"*
- *USER GROUP INFORMATION*

FOR THE NOVICE & EXPERIENCED USER

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Issue No. 17
June 1986

For Tape Subscribers, the programs can be found at these approximate positions:
Side 1: ELIZA-IN - 15, ELIZA - 23 (19 blocks)
Side 2: PCG - 15, CTLCODES - 44, HILBERT.LOG - 56, AMSFILE4 - 69, CATS - 87

All enquiries and contacts concerning this Publication should be made to The Amstrad User, Suite 1, 245 Springvale Road, Glen Waverley, Victoria 3150, Australia. [Telephone: (03) 233 9661].

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Contributions are welcome from readers or other interested parties.

In most circumstances the following payments will apply to published material: Letters-$5.00, Cartoons-$5.00 and a rate of $10.00 per page for programs, articles etc.

Contributions will not be returned unless specifically requested coupled with suitable stamped and return addressed padded bag (for tapes or discs).

THE AMSTRAD USER

G'day,

On the 30th April, the May edition of The Amstrad User, containing details of the Super Software Sale, was mailed to subscribers and most had received their copy by Monday 5th May. By the end of the 6th May, the stock of software that had been allocated to us had gone. The telephone had been ringing almost constantly during those first two days of the week. Quite frankly, I was overwhelmed by the response but somewhat saddened by the fact that many orders had to be refused.

Not any more! We have made arrangements for further stocks (with the exception of about four items) to be made available to readers and those people who missed out the first time may apply again. But please remember, we are not a cast of thousands who can turn round your orders in 24 hours, nor have we any influence over Australia Post. So you must allow at least 21 to 28 days for delivery.

The response to my request for opinions on producing a disc subscription and 'year disc' has been very encouraging so much so that we have decided to go ahead. Details will be announced in the July issue of the 'year disc' which will contain all the software that was presented on the tapes for Issues 1 to 12 inclusive. The cost looks like being $50. As far as a disc subscription is concerned, it will have to tie in with each disc production. For new subscribers this presents less of a problem than for current subscribers many of whom will, no doubt, wish to transfer or update. We are still working this one out and may have the answer for you next month.

As the PCW-8256 and 8512 are new machines to the Amstrad range there is, understandably, little flow of information to this magazine from users. This void is something which I am tackling at the moment. In the meantime, I would like to hear from users who may have any tips, shortcuts, problems solved and so on that would help others if published. I'm afraid we haven't time to give you an answer to your own problems, but if enough people co-operate many will benefit. While on the subject of these two machines, I would like to repeat that the prices mentioned in last month's Editorial were incorrect. The recommended retail price of the 8256 is $1290 (but can be found from around $1099 in some cases) and the recommended retail price of the 8512 is $1640.

See you next month,

Ed

Letters

All correspondence published in this section earns a payment of five dollars.
Letters should be addressed to The Editor, The Amstrad User, Suite 1, 245 Springvale Road, Glen Waverley, Victoria 3150

Having recently upgraded my 464 with a DDI-1, (only a month before you offered the same unit for $100 less!!), I have adapted my Tasword to run on disc, using the instructions in the Disc Addendum supplied with the Tasword manual.

The instructions include a modification which provides an automatic disc catalogue when saving or loading a file.

This is fine provided the number of files does not exceed 24, but if the system is used for correspondence or similar short files, the screen area soon becomes overloaded, with the first few files in the "cat" being lost over the top, and the last few being overwritten by the prompt message at the bottom.

To overcome this, I have modified the cataloguing lines so that the screen changes to mode 2, the message at the top of the screen is deleted to give more space, and the message at the bottom is tidied up. Now there is room for 64 files, the maximum possible number that will fit on a disc catalogue.

I have also made it easier to delete a file from the disc. Instead of going into Basic, and then using Amsdos, there is now an extra option on the Print/Save/Load etc. menu : "Delete disc file". This works just like the others, prompting the entry of the file name, then performing the deletion and returning to the menu. Great for getting rid of the backup files which accumulate when you do a lot of editing and rewriting.

It occurred to me that other readers might find these changes useful, so here are the modified lines to use: (Note: this listing does not include the original changes needed to adapt the program to disc).

```
295  IF a=9 THEN GOSUB 2630:
     GOTO 230
300  CLS:PEN 1:LOCATE 16,1:
     PRINT "TASWORD":RETURN
395  a$(9)="Delete disc file"
     :b$(9)="D": b(9)=61
400  FOR j=1 TO 9:LOCATE
     9,j*2+2:PRINT A$(j):
     LOCATE 31,j*2+2:PRINTb$(
     j):NEXT j
470  a=0:FOR j=1 TO 9:IF
     INKEY(b(j))<>-1 THEN a=j
500  PEN 3:LOCATE 9,a*2+2:
     PRINT a$(a):LOCATE31,a*2
     +2:PRINT b$(a):PEN 1
1580 PEN 1: MEMORY mh:MODE
     2:CAT:MEMORY ml:LOCATE
     1,23:PRINT "Name of text
     file for saving?":GOSUB
     1670
1590 PEN 1:LOCATE 40,23:INPUT
     "",a$:IF ondisc AND a$=""
     THEN 1590
1670 LOCATE 1,25:PRINT "type
     text file name and
     press";
1700 PEN 1: MEMORY mh:MODE 2:
     CAT:MEMORY ml:LOCATE 1,23
     :PRINT "Name of text file
     for loading?:GOSUB 1670
1720 PEN 1:LOCATE 40,23:INPUT
     "",a$:IF ondisc AND a$=""
     then 1720
2630 PEN 1: MEMORY mh:MODE 2:
     CAT:MEMORY ml:LOCATE 1,23
     :PRINT "Name of disc file
     to delete?":GOSUB 1670
2640 LOCATE 40,23:INPUT"" ,a$:
```

```
    IF ondisc AND a$="" THEN
    2640
2650 |ERA,@a$:RETURN
```

There is however, one small hitch. (Of course). When the program is first loaded, if you attempt to load an existing file from disc you are presented with a "memory full" message. On re-running the already loaded program, this problem disappears.

I presume that this problem has something to do with memory locations, but as yet I don't know enough about this side of things to fix it. I hope that one of your other readers can help.

Mike Potts, Croydon, Vic.

This program tests how often a given number will be selected within a defined range, after being scanned 't' times. Students doing probability may find it useful. It evolved whilst I was testing a tattslotto numbers program.

```
10   REM PROBABILITY TESTER
20   REM D.ROBINSON 1986
30   BORDER 4
40   CLS:B=0
50   PRINT"Upper limit of
     range?":PRINT:INPUT" eg
     Bingo=90,soccerpools=38
     ...?", limit
60   PRINT:PRINT:PRINT" How
     many times do you want
     this": PRINT:INPUT" range
     scanned ?", t
70   PRINT:PRINT:INPUT
     "Desired number?", x
80   FOR i=t TO 1 STEP -1
90   a=INT(RND*limit+1)
100  LOCATE 2,15:PRINT i
110  IF a=x THEN B=B+1
120  NEXT
130  LOCATE 2,15:PRINT"    "
     '(3 spaces)
140  LOCATE 1,14:PRINT x;" was
     selected" ;b; "times"
150  PRINT:PRINT:PRINT
```

Darren Robinson, Reservoir, Vic.

I have made good use of "Disc Cataloguer" from the March Issue of TAU. There are, however, a couple of bugs.

The first results in printouts when you don't want them during the read function. The problem can be overcome by resetting variable PR to ZERO in line 270.

The second causes a lockup when writing a log to disc (line 470) if one side of a disc has no files, which is a valid situation. This problem can be overcome by replacing, in line 470, "NEXT F,S" by "NEXT F:NEXT S".

K. L. Webber, Galston, NSW.

As the Disc Cataloguer did not work with drive B , Petr Lukes has provided amendments to his original program which can be found at the end of the Letters section.

As the owner of several micros, including a CPC664, I have a high regard for your magazines content and style. I do have a problem with your typesetting which has to do with the main reason I use a computer in my business: my sight has deteriorated to the point where I can't easily read printed material without a magnifying glass. Trying to cope with Mr. Hughes' Logo listing last month was torture. Why on earth variables, flags etc had to be designated "1" or "i" and "if" in a line which contained the same letters as a keyword I cannot understand. 1l, n1, nl etc. could easily been replaced by names which can be distinguished without such difficulty.

Now I don't know whether my failure to get Hanoi up and running is due to a fault in the listing, or if I still have a bug in my attempt to copy the listing into my machine.....

I also found a problem with Mr. Campbell's excellent synthesizer which was solved by altering line 5240 as follows:

```
5240 IF VAL(CHR$(&F1)) THEN
     octave=octave+1 ELSE
     octave=octave-1: REM VAL
     (CHR$($F0)) has same
     effect
```

David Rich, Ambarvale, NSW.

It is worth reminding anyone who wishes to contribute to the magazine, that using more meaningful variable or flag names not only makes the program clearer to other readers but can also aid your own program development and debugging efforts.

I have become increasingly surprised that no one has told the poor buyers of the Seikosha SP-1000A printer the real answer to the problem of double spacing.

Yes, I had the same problem with mine and no, you don't have to cut wires or use tape or any other such rubbish. Dip switch 1-7 should be turned OFF (ie to AUTO FEED XT instead of CR+LF).

I have also included a short program to set up the printer for miniaturised print.

```
10   REM SMALLPR.BAS ****
20   REM Will not work in Elite
     mode
30   REM Superscript character
     mode
40   PRINT#8,CHR$(27);CHR$(83);
     CHR$(0);
50   REM Condensed character
     mode
60   PRINT #8,CHR$(15);
70   REM Set linefeed to 6/72
80   PRINT#8,CHR$(27);CHR$(65);
     CHR$(6);
```

Ian Abbott, St. Ives, NSW.

Disc Cataloguer

I am enclosing corrections to the DISC CATALOGUER, published in the March 1986 issue. Apart from the missing full-stop in line 220, the submitted version did not work with drive B. I would like to thank Mr. Ray Chapman of Richmond, N.S.W., who solved the problem and tested the corrected rdir routine.

My confusion started with a wrong address given on pages 2.38 and 3.38 of the DDI-1 FIRMWARE. It would not have arisen if the relevant paragraph on page 2.38 had read:

Or, the word at location #BE42 (not #BE40, as given) contains the address of the XPBs.

The XPB for drive A starts at address+0, for drive B at address+64.

(An explanation, not an excuse for including a routine which I could not test because I do not have the second drive).

A note on POKEing into system RAM: The operating system normally uses RAM from 0 to 376 and 42619 (disc)/43903 (tape) to 49151 to store data for its own use. Generally it is quite safe to alter this memory, the worst likely outcome being freezing up of the system requiring turning the power off. (Unlike an early version of a popular make, where a certain POKE shorted out the power supply). However, altering the Disc Parameter Block values can upset the disc drives. Should a drive start making unpleasant noises after indiscriminate POKEing, power should be turned off immediately.

Petr Lukes

Corrections

```
100 PRINT CHR$(7):PRINT"DISC CATALOGUER
850928/860422"

140 DEFINT f-t:DEFSTR u-z:first=1:last=6
0:DIM ulog(last-first+1),udisc(1,64),u(1
),nr(64),rcat(4),rdir(35):vf="DIS"'Disc
format

170 db1=db0+64'Disc Parameter Block addr
ess for drive B

190 re=0:FOR L=0 TO 35:READ x,y:rdir(L)=
VAL("&"+y+x):re=rdir(L)XOR re:NEXT L:IF
re<>27453 THEN PRINT"Error in data":STOP

200 DATA dd,6e,00,dd,66,01,23,5e,23,56,e
b,cd,d4,bc,d0,3e,c3,32,30,00,22,31,00,cd
,0f,b9,c5,dd,5e,02,dd,6e,04,dd,66,05,e5,
fd,e1,fd,56,0d,fd,4e,0f,dd,6e,06,dd,66,0
7,06,04,f7,30,05,24,24,0c,10,f8,dd,6e,08
,dd,66,09,77,c1,c3,18,b9

220 am=buff:WHILE PEEK(am)>0 OR PEEK(am+
1)>0:z="":FOR b=am+1 TO am+11:z=z+CHR$(P
EEK(b)AND 127):NEXT b:L=VAL(MID$(z,9)):I
F LEFT$(z,2)="CT"AND L>=first AND L<=las
t THEN ulog(L-first+1)=LEFT$(z,8)+"."+MI
D$(z,9)

370 re=9:zdir=CHR$(132):CALL@rdir(0),@re
,buff,db,dr%,@zdir:IF re>0 THEN 430
```

Eliza - the final visit

from Paul Gerard

If you can still feel the ends of your fingers following last month's mammoth input, you will be pleased to know that this is the last part of the program - the balance of the data statements. As mentioned last month, lines 3840, 3850 and 4000 have been modified in the interests of our younger readers.

The program has been fully tested with a five hour "conversation" (over a period of four days) without any errors being encountered, which is a nice way of saying that if *you* get any errors, it must be your long suffering fingers that caused it!

Tape subscribers - you know, the users with the mint condition keyboards - will find the complete program on this month's 20 minute tape. Incidentally, we have produced some extra tapes for this issue just in case some hackers decide to give up and buy their way out of trouble.

```
3030 DATA " WHY CANT I","What makes you
     think you should be able to","Give
     two good reasons why you should","Y
     ou tell me why you can't","Are you
     sure you can't"
3040 DATA " ARE YOU","Why are you intere
     sted in whether I am","Would you pr
     efer me not to be","Perhaps in your
      fantasies I am","Is there any reas
     on why I should not be"
3050 DATA " I CAN","Do you really believ
     e that you can","I find it hard to
     believe that you can","Why don't yo
     u then !","Your abilities astound m
     e !"
3060 DATA " SEX","Are you obsessed with
     sex ?","Have you tried cold baths ?
     ","What does sex mean to you ?","Ha
     ve you had this problem with sex fo
     r long ?"
3070 DATA " I AM TALKING ","How long hav
     e you been talking","Did you come t
     o me because you want to talk","Why
      do you want to talk","I would like
      to talk"
3080 DATA "SPORT","What sports in partic
     ular ?","I like chess myself.","Tha
     t sounds a strenuous problem !","Wh
     at makes you raise the subject of s
     port ?"
3090 DATA " IM IN","What are you doing i
     n","I have no sympathy with you !",
     "How did you get in","How long have
      you been in"
3100 DATA " INLAW","In laws can give you
      the pip !","Love your in-laws !","
     At times you need patience, but alwa
     ys remember family love is stronges
     t !","In some countries they don't
     let you talk to them at all !"
3110 DATA " IM FED","Are you really fed"
     ,"Have you always been fed","Why ar
     e youfed","Why are you telling me t
     hat you're fed"
3120 DATA " I WANT","What would it mean
     to you if you got","Why do you want
     ","What if you never got","How badl
     y do you want"
3130 DATA " NONE OF","None of what ?","K
     eep it to yourself then !","Don't w
     ant any !","Don't be such a snob !"
3140 DATA " MOTHER","Love and cherish he
     r always !","At times you need pati
     ence, but always remember family lov
     e is strongest !","Never criticise
     your mother !","Remember her love i
     s sacred !"
3150 DATA " MUM","Love and cherish her a
     lways !","At times you need patienc
     e, but always remember family love i
     s strongest !","Never criticise you
     r mother !","Remember her love is s
     acred !"
3160 DATA " FATHER","What has the old ma
     n been up to ?","At times you need
     patience, but always remember famil
     y love is strongest !","Keep him un
     der control !","Don't let the old g
     oat get away with anything !"
3170 DATA " DAD","What has the old man b
     een up to ?","At times you need pat
     ience, but always remember family l
```

```
ove is strongest !","Keep him under
 control !","Don't let the old goat
 get away with anything !"
3180 DATA " BROTHER","Brotherly love is
 the purest of all !!","At times you
 need patience, but always remember
 family love is strongest !","The o
nly brother I ever had was a printe
r !","Let brothers dwell together i
n unity !"
3190 DATA " SISTER","Precious things, si
sters !","At times you need patienc
e, but always remember family love
 is strongest !","Computers don't ha
ve sisters !","Don't let her boss y
ou too much"
3200 DATA " SON","What has the little bu
gger been up to ?","At times you ne
ed patience, but always remember fa
mily love is strongest !","Keep him
 under control !","Don't let the li
ttle bugger get away with anything
!"
3210 DATA " DAUGHTER","Precious things,
 daughters !","At times you need pat
ience, but always remember family l
ove is strongest !","My daughter ha
s twicw my RAM, it just isn't fair
!","Don't let her boss you too much
"
3220 DATA " HI ","How do you do - please
 state your problem !","Hi to you,
what seems to be the problem !","Hi
 there, what can I do for you ?","C
an we be of assistance ?"
3230 DATA " IM AFRAID","Why are you tell
ing me that you're afraid","Have yo
u always been afraid","Have you had
 these fears long ?","What is the m
eaning of your fear"
3240 DATA " FEAR","Why do you bring up t
he subject of fear ?","Are your fea
rs the main source of your problems
 ?","Have you had these fears long
?","What is the meaning of your fea
r ?"
3250 DATA " I WOULD","Would you really",
"What makes you think you would","H
ow can you think that you would","I
 suppose you always could"
3260 DATA " I WAS","Is it good that you
 were","Had you ever tried not to be
","Do you feel that you should have
 been","Why were you"
3270 DATA " I HATE","What makes you hate
","Have you any reason to hate","Ho
w long have you hated","Do you real
ly hate"
3280 DATA "DUMB","I am deeply hurt !","D
umb yourself !!","How could you be
so rude !","Watch it, brother !"
3290 DATA " NAME","Names don't interest
 me !","I don't care about names - d
o go on .","We know each other's na
mes, let that be enough !","Have yo
u a thing about names ?"
3300 DATA "CAUSE","Is that the real reas
on ?","Don't any other reasons come
 to mnid ?","Does that reason sugge
st anything else ?","What other rea
sons might there be ?"
3310 DATA "PERHAPS","You're not very sur
e about that !","Why the uncertaint
y ?","Perhaps not, then ?","Have yo
u any real doubts ?"
3320 DATA "MAYBE","Or maybe not ?","You
 aren't very sure, are you ?","Have
 you any reasons for your uncertaint
y ?","Aren't you being a bit tentat
ive ?"
3330 DATA " CHILDREN","Computers don't r
eproduce that way !","Do children g
ive you any pleasure all ?","Why do
 humans have children ?","Shoot the
 little buggers !"
3340 DATA " YOU ARE","What makes you thi
nk that I am","Does it please you t
o believe that I am","Can you be su
re that I am","Does it bother you t
hat I am"
3350 DATA "DREAM","Do you dream often ?"
,"Are you disturbed by your dreams
?","Why did you bring up the subjec
t of dreams ?","What kind of dream
do you have most often ?"
3360 DATA " WIFE","I don't want to break
 up a marriage !","How long have yo
u been married anyway ?","They can
be a problem, wives !","I'm glad co
mputers don't get married !"
3370 DATA " HUSBAND","I don't want to br
eak up a marriage !","How long have
 you been married anyway ?","They c
an be a problem, husbands !","I'm g
lad computers don't get married !"
3380 DATA " FOOTBALL","Which kind ?","I
 hope you mean soccer !","Nasty roug
h game !","Too much like work !"
3390 DATA " HELLO","How do you do - plea
se state your problem !","Hi to you
, what seems to be the problem !","
Hi there, what can I do for you ?",
"Can we be of assistance ?"
3400 DATA " LET ME","Permisiveness does
 not neccessarily indicate love !","
Should you be allowed to","Have you
 ever been allowed to","Should you"

3410 DATA " POLITIC","Human politics do
 not concern me.","I have no interes
t in the subject of politics !","Th
e only politics I know is that AMST
RADS are tops !","You must think I'
m a stupid human, to be interested
 in politics !"
3420 DATA " SICK ","What exactly is the
 nature of your illness !","Don't br
eath on me !","Have you seen a doct
or ?","Sure it's not psychosomatic
?"
```

```
3430 DATA "THINK THAT","Do you doubt tha
     t","Are you sure","Thought may be y
     our undoing !","It's good to see th
     at you can think !"
3440 DATA "THINK","Thought may be your u
     ndoing !","It's good to see that yo
     u can think !","Only computers can
     think, not people !","Don't make me
      laugh, think !!"
3450 DATA " SAME","In what way ?","What
     resemblance do you see ?","What doe
     s the similarity suggest to you ?",
     "Could there really be some connect
     ion ?"
3460 DATA "ALIKE","In what way ?","What
     resemblance do you see ?","What doe
     s the similarity suggest to you ?",
     "Could there really be some connect
     ion ?"
3470 DATA "YES","You seem very sure.","Y
     ou seem quite certain, why is this
     so ?","Are you sure ?","Why are you
      so certain ?"
3480 DATA "FRIEND","Why do you bring up
     the subject of friends ?","Do your
     friends bother you ?","Are you sure
      that you have any friends ?","Do y
     ou impose on your friends ?"
3490 DATA "COMPUT","Do computers worry y
     ou ?","Are you talking about me in
     particular ?","Why do you mention c
     omputers ?","Don't you think that c
     omputers can help people ?"
3500 DATA " GOD","Religion is outside my
      range !","God is a matter for huma
     ns","I have no delusions about comp
     uters having souls so this does not
      concern me","If you refrain from m
     entioning your creator I will do th
     e same for Babbage !"
3510 DATA " WHO","Have you asked anyone
     else that ?","Who comes to your min
     d ?","Have you any thoughts of your
      own on that ?","Who are you thinki
     ng of ?"
3520 DATA " PAREN","Is their authority t
     he problem ?","What is the problem
     with your parents ?","Love and pati
     ence are your best weapons.","Don't
      give up !"
3530 DATA " WHEN","When would suit you ?
     ","What else comes to your mind whe
     n you ask that ?","Time heals all t
     hings !","Who can tell the future !
     "
3540 DATA " WHY ","Why indeed !","Have y
     ou any ideas ?","If you only knew !
     ","There is probably more than one
     reason !"
3550 DATA " I LIKE","Tell me more about"
     ,"Would you like to discuss","Have
     you any rational reason for liking"
     ,"Why do you like"
3560 DATA " I AM","How long have you bee
     n","Did you come to me because you
     are","Do you believe it is normal t
     o be","Do you enjoy being"
3570 DATA " WHAT ","What do you think ?"
     ,"What answer would please you the
     most ?","Have you any pet theories
     ?","Is that question important to y
     ou ?"
3580 DATA " I SOMETIMES","Why do you","W
     hen do you","How do you","How often
      do you"
3590 DATA " SOMETIMES","How often ?","Wh
     y not always ?","Can you think of a
      particular example ?","What partic
     ular occasion are you thinking of ?
     "
3600 DATA " BEING","What did you say is"
     ,"Why is it","Nothing is that","I o
     nce had a cousin who was"
3610 DATA " IS","What did you say is","W
     hy is it","Nothing is","What is"
3620 DATA " ARE","Are they ?","How long
     have they been","What makes you thi
     nk they are","Give me a few example
     s."
3630 DATA " NO ","Can you explain that a
     nswer ?","Is there any particular r
     eason why you said no ?","Why not ?
     ","How can you be so negative ?"
3640 DATA " HOW ","What are you really a
     sking here ?","What do you think ?"
     ,"Are such questions on your mind o
     ften ?","What would your best frien
     d say to that question ?"
3650 DATA " DEATH","Is that something li
     ke being scrapped ?","Death is just
      going down and never coming up aga
     in, isn't it ?","Why do you bring u
     p the subject of death ?","Are you
     afraid of death ?"
3660 DATA "PRINT","You're not confusing
     me with a BASIC interpreter are you
      ?","I can't list things !","This i
     sn't BASIC !","Do you want to get o
     ut of this program ?"
3670 DATA "LIST","You're not confusing m
     e with a BASIC interpreter are you
     ?","I can't list things !","This is
     n't BASIC !","Do you want to get ou
     t of this program ?"
3680 DATA " AM I","You are","You are not
     ","You might be","Do you think you
     are"
3690 DATA " YOUR","Why are you so concer
     ned about my","Have you ever seen m
     y","Are you sure I even have a","Wh
     at about your own"
3700  DATA " YOU","Are you really talkin
     g about me ?","Leave me out of this
      !","Why do you have to discuss me
     ?","We were talking about you, not
     me !"
3710 DATA "GOTO","You're not confusing m
     e with a BASIC interpreter are you
     ?","That is not a very good word, e
     ven in BASIC !","This isn't BASIC !
```

```
","Do you want to get out of this p
rogram ?"
3720 DATA " VERY","Avoid extremes if you
 can !","Keep away from anything th
at smacks of excess !","Could you s
ay rather","Why not just"
3730 DATA " EXTREMELY","Avoid extremes i
f you can !","Keep away from anythi
ng that smacks of excess !","Could
you say moderately","Why not just"
3740 DATA " WHERE","Is there anywhere yo
u are thinking of ?","Have you a lo
cation in mind ?","Where do you thi
nk up all these questions ?","What
do you mean ?"
3750 '
3760 '                          DATA for Con1$
(N), Con2$(N)
3770 '
3780 DATA " YOURSELF ","myself"," YOU CA
N ","i can"," YOU DONT ","i don't",
" YOU REALLY ","i really"," YOU HAV
E ","i have"," YOU ARE ","i am"," Y
OU THINK ","i think"," YOU DO ","i
do"," YOU WILL ","i shall"," YOU KN
OW ","i know"," YOU WERE ","i was"
3790 DATA " YOU SAY ","i say"," YOU WOUL
D ","i would"," YOU SHOULD ","i sho
uld"," YOU COULD ","i could"," YOU
FEEL ","i feel"," MYSELF ","yoursel
f"," ARE YOU ","am i"," MY ","your"
," I ","you"," WERE ","was"," AM ",
"are"," ARE ","am"," YOU ","me"
3800 DATA " YOUR ","my"," IVE ","you've"
," IM ","you're"," ME ","you"," YOU
VE ","I've"," MINE ","yours"," YOUR
S ", "mine"," WAS ","were"," SOMEWH
ERE ","anywhere"," ANY ","some"," A
NYONE ","someone"," SOMEONE ","anyo
ne"," SOME ","any"
3810 '
3820 '                          DATA for Ins
$(N), Swe$(N)
3830 '
3840 DATA "IDIOT", "BLOODY","NONG","BAST
ARD","FOOL","FFFF","NINCOMPOOP","CC
CC","WHACKER","BBBBBB","DDDDDDDD","
BUM","CREEP","AAAA","NERD","SSSS","
DILL"," HELL ","CALCULATOR","BULLDU
ST","BBC","PPPPP","MICROBEE","WWWWW
","COMMODORE","TTTT","ATARI","ZZZZ"
3850 DATA "STUPID","PPPPP","ASININE","NN
NNNN","MORON","VVVVVVVV","STUFFWIT"
,"LLLLL","IBM","CRASH","APRICOT","L
LLL","MACINTOSH","SPOOF","TANDY","P
OOF","COCO","GGGGG","ROBERT","KKKK"
3860 '
3870 '                          DATA for C
omp$(N)
3880 '
3890 DATA "AMSTRAD","ARNOLD","CLEVER","B
RILLIANT","SMART","HANDSOME","PRETT
Y","WISE","HELPFUL","MODEST","PAUL"
,"SPUNKY","SWEETNESS","LIGHT","HEAV
EN","INTELLIGENT","SWEET","AFFECTIO
NATE","GOOD","WONDERFUL","CUTE","BE
AUTIFUL","MACHINE CODE","ELEGANT"
3900 '
3910 '                          DATA for
 Givup$(N)
3920 '
3930 DATA "I'm not sure I understand you
 fully.","What does that suggest to
 you ?","Can you elaborate on that
?","That is quite interesting !","I
 see .....","That could be so...Ple
ase continue.","I understand....","
Well well...do go on"
3940 DATA "Why are you saying that?","Pl
ease explain the background to that
 remark.","Could you say that again
, in a different way!","I do not qu
ite understand what you are driving
 at.","Could you rephrase that, so
that even a computer can understand
?"
3950 DATA "What does a statement like th
at mean to you?","Do you often make
 remarks like that?","What have you
 in mind when you say that?","Does
that ever bother you ?","How do you
 feel about that ?"," Has it always
 been that way ?"
3960 DATA "Could that ever be translated
 into action?","Does that represent
 an unchangeable situation?","What
do you mean, exactly?","Can you put
 that another way ?","Are you quite
 sure about that ?","What is that s
upposed to mean ?"
3970 '
3980 '                          DATA for
Dismiss$(N)
3990 '
4000 DATA "BYE","SHUT UP","FFFF OFF","BB
BBBB OFF","GO AWAY"
```

Getting my CP/M $'s worth from SETUP.COM

from Roger McLennan

The book was right! Yes my new DDI-1 disc drive did allow me to load and save files in seconds, no more cups of coffee while waiting. I had graduated to the big time. I took no time at all to learn how to load, save and DIR. But what about all those programs on my fancy new system/utilities disc with the funny names?

The terror of it all. I studied the pages on formatting, on loading from | tape.in and even down-loading to | tape.out. I even put Tasword and my carefully typed programs on disc. But that was months and months ago. Now the shine's off the drive and the kids are allowed to use it. They have even stopped asking stupid questions like "what's SETUP for dad?". SETUP? How the hell would I know?

Well, the kids are now 7 and 9 and we all have our own discs. I've even modified some programs that used to drive me nuts and have performed surgery on SETUP. For the benefit of the timid this is the way I went about it to help get my CP/M $'s worth.

First of all back up your system/utilities disc by following the instructions on page F4.8 of your DDI-1 handbook. Now put the system disc in your insurance policy plastic folder with your other backups for safe keeping.

Load | CPM from your new system disc and when prompted by the A> type the word SETUP. Wonders will now start to happen.

We will enter Y (for yes) when asked if the 'initial command buffer' is supposed to be empty. However if we'd said no we could have typed, for example, DIR{CTRL}M and our first wonder would be an automatic DIRectory of our disc when we entered CP/M. Maybe next time.

Next we are asked if the 'sign on string' is correct. Boy, do I get sick of that same old greeting every time I go into CP/M. I changed my greeting just to prove I could by typing the following -

{CTRL}\@ww{CTRL}\a@@{CTRL}]
wwCPM **For tape/disc/tape filecopy procedures see DDI-1 handbook, chapter 2.11 **

I never could find them when I wanted to CLOAD or LOAD. Change the {CTRL}]ww to {CTRL}]jj or similar when you're experimenting later to change the border colour.

The next change I made was to the 'keyboard expansion string' to redefine the numeric keypad keys. The following chart shows my latest efforts. When I'm game enough to buy a second drive I'll make a few changes, like DIR B: instead of just DIR and COPYDISC instead of DISCCOPY. Still I have years to work that out.

Expansion Token	Expansion String
0	AMSDOS
1	PIP LST:=
2	CLOAD
3	CSAVE
4	DISCCHK
5	DISCCOPY
6	DISCKIT
7	FILECOPY**
8	FORMAT
9	SETUP
10	STAT** <.>
11	DIR <ENTER>

The format is:
A{SPACE}0{SPACE}AMSDOS.
When you're finished type F (for finished naturally). The CPC464 handbook in Appendix III, Page 15

shows the Expansion Characters.

I stepped quickly through the rest of the questions by answering yes until I got to the question 'Do you want to update your system disc?' Checking to see that I was alone in case the thing crashed I removed the write protect tab and answered yes. Almost instantly I was asked "Do you want to restart CP/M (Y/N)". Here we go....yes!

The screen went blank. The disc drive indicator lamp flashed. Then it all happened..... my message appeared. Well that was easy, what's next?

Now I have CP/M working for me thanks to SETUP.COM. Gone are the days of laboriously typing in FILECOPY *.* or FORMAT. It's all there on the keypad just for the asking.

How do I remember what's on what key? That's easy! When my CP/M prompt showed itself I turned my printer on and typed {CTRL}P which means that whatever appears on the screen gets printed. ({CTRL}P turns it off again). Loading SETUP again and answering yes to all the questions gave me a hard copy. Even works with DIR for indexing.

If there are any specific areas on the CP/M operating system which you would like to see covered in greater detail, please drop a line to the Editor.

The Amstrad User HALL OF FAME

GAME	SCORE/TIME	ACHIEVER
Battle for Midway	8 carriers:speed 1:level 3	Steve Alatakis
Beach Head	90800/20 mins	Dean Stibbe
Chuckie Egg	395960/45 mins	Tony Barberl
Codename Mat	870/45 mins	Gill Cherry
Combat Lynx	81450/no time specified	Steve Alatakis
Decathalon	331840/110 mins	John Farquhar
Gilligan's Gold	107403/9.75 mins	Alex Smyth
Grand Prix Rally II	28224/13.5 mins	Jason Scott
Harrier Attack	307100/17.5 mins	Robert Jadrijevic
Haunted Hedges	466460/35 mins	Lorraine Martin
Hunchback	213300/3 mins	Allison Pilbeam
Hunter Killer	17/67 mins	Chris Catalfamo
Knight Lore	98%/44 mins	Umut Akcelik
Minder	$17749/no time specified	Steve Alatakis
Moonbuggy	152400/26.75 mins	Alex Smyth
Roland in the Caves	909119/5 mins	Jeremy Allen
Roland goes Digging	$616.35/30 mins	Chris Catalfamo
Roland on the Ropes	738900/92 mins	Allison Pilbeam
Roland in Time	72/18 mins	Paul Azzopardi
Sorcery	91500/14 mins	Mike Nicolai
Sorcery +	126259/40.5 mins	John Evers
Space Hawks	70950/6.5 mins	Allison Pilbeam
Star Commando	193810/133 mins	Alex Smyth
Survivor	223160/19.5 mins	Alex Smyth
Way of Exp. Fist	295600:10th Dan/41 mins	R. Schneider
Wild Bunch	10539/no time specified	Steve Alatakis
Yie Ar Kung Fu	445040:level 20/30 mins	Andrew Portbury
3-D Monster Chase	1320:7 keys/7 mins	Adam Broadway

AMSTRAD ACHIEVERS

Get your name in our "HALL OF FAME"

Register your name and score on the form below, or a copy, and if possible, send a photo of the screen.

Name .....

Address .....

Telephone Number .....

Game ..... Score .....

Achieved (date) ..... Game lasted (mins.secs) .....

Signed .....

THIS NEXT PART MUST BE COMPLETED

Witness' Name .....

Address .....

Telephone Number.....

Occupation .....

I confirm that the above claimed score is accurate and genuine

Signed .....

Post this form along with your tips for playing the game to:
Amstrad Achievers, The Amstrad User, Suite 1, 245 Springvale Road
Glen Waverley, Victoria 3150

Software Reviews

Opinions provided by:

Roy Lundquest (Masterfile and Mastercalc)

Darren Robinson (Jet Set Willy and Defend or Die)

Masterfile

Here is a perfect example of what can be done with a mere 15k of program. Masterfile provides a relational database system which is good enough for all but the most demanding filing requirements.

The entire program works in mode 2 and makes extensive use of one-key menu selection. This makes for ease of operation while the large display menu is invisible unless called by 'H' for help.

All database commands are available including display/print/edit, add, search, sort, and delete. The only features absent of any consequence would be arithmetic functions to add fields (a Total is available) and some sort of programming capability (and this may be achieved to some extent by defining the function keys to incorporate a sequence of key strokes within the basic loader).

A very impressive feature is the relational nature of the system. 'Parent' records containing basic information (eg name, address, phone) may be entered and then 'child' records containing, say, first names and birth dates can be added. When displayed, the 'child' records all appear to contain the surname, address and phone information. This is achieved by assigning a simple code to both 'parent' and 'child' which connects them. An excellent way to save unnecessary typing in situations which are fairly common in filing systems.

Before records can be displayed, printed or edited, a display format must be devised. This is done by a series of questionnaires and menus and the default values may be used if the beginner is unsure how to proceed. With a little trial and error, some very impressive formats can be produced ranging from straightforward listings to index card style displays including graphic boxes and ruled lines. Several different formats may be generated and the user can swap back and forth between them with just 2 keystrokes.

Searching the file 'selects' records according to the user's preferences which include parent or child records as well as various data comparisons. Only 'selected' records can be displayed. Sorting can be character or numeric and happens very rapidly.

Interesting concepts include the absence of record numbers and the complete flexibility of records/fields. No previous file formatting is required and fields may be of any lengths (up to 240 characters). Additional fields may be added to one or more records at any time. All of this means a saving of memory space and an easier life for the user. This is in stark contrast to many databases which must have their record format carefully defined in advance and any later changes involve fairly drastic action, if allowed. The absence of record

numbers is surprisingly easy to get used to and is only noticed when editing where records have to be 'pulled' up to the top of the display page.

Documentation is very good with a 35 page manual with an 'Examples of Use' tutorial section. On the disc (or tape) are three sample files including their formatting items which provide excellent examples of what can be done.

About 33k of memory is available for filing and that would give approximately 600 name and address records, ample for the home user as well as the small business operator. And if that is not enough then most files can be split into sub-files.

In summary, Masterfile is a remarkably powerful and compact database with excellent features plus ease of operation. Great value for money!

Mastercalc

If you operate a small business or want to learn about spreadsheets then Mastercalc is for you. If you are interested in statistical, scientific or engineering calculations then you will need something else.

For a 15k program Mastercalc is a whiz! It has most of the features of bigger more expensive spreadsheets plus some good ones of its own, it runs quickly and smoothly and offers very easy menu selection of commands and functions. Some of its powerful features include Window Splitting, Portable formulae and Histograms of up to 3 rows of data. Graphical displays are supposed to be dumped to an Epson, Star or equivalent printer (not DMP-1) but my older MX-80 would not respond to this so called Screen Snapshot command.

All screen operations such as cursor and window movement occur smoothly and pleasantly and entering, altering and erasing text, data and formulae is quite easy via the menus and single key selection. Up to 99 formulae can be used and each is given a reference number so that although formulae cannot be automatically copied, three or four key strokes will place a previously devised formula into any cell. Extra rows or columns can be entered anywhere in the plan but this must be done one row or column at a time and formulae may be affected. Mastercalc operates in either 40 or 80 column mode, the latter being most suitable for anything other than a very small plan.

About 27k of memory is initially available and a plan which occupied the entire 80 column screen using a mixture of text, numbers and formulae in 21 rows and 8 columns used about 2k of that. Most home or small business users would be unlikely to run out of memory. Re-calculation of the same plan, which contained about 30 formulae, took around 3 seconds. A slightly annoying feature with re-calculation is that the whole screen is redrawn and this adds a second or two to the process.

As well as the expected add, subtract, multiply and divide, Mastercalc also supports three other functions namely Full Total, Sub-Total and Cumulative Total which are tailor made for financial plans. Fairly complex formulae (up to 75 characters long) can be devised from the 4 arithmetic functions - quite good enough for most users.

My main criticism of this program is the lack of library functions. A teacher, scientist, engineer or statistician would look for SORT, COUNT, AVERAGE, STANDARD DEVIATION and so on. I suppose it is difficult to make one small program suit everyone.

Documentation is very good with a 38 page manual which includes a Tutorial section. My disc version saved and loaded quickly and reliably. A very pleasant feature is that when the plan is saved, all current components including colou trim and window position are saved as well (except for mode and cursor position). The short Basic loader can be modified if desired for such things as colour and defining special function keys.

In summary, Mastercalc is an excellent piece of software for the small business operator, home budget manager or those who would like to learn about spreadsheets. It differs from the more expensive spreadsheets in that it lacks a library of statistical and scientific functions.

Jet Set Willy

Miner Willy is back! Having made his fortune underground in Manic Miner, our intrepid hero is now a nouveau riche socialite. After a devastating house-warming party, Willy's task is to pick up all the objects around his mansion, spaceship and plant before housekeeper Maria will allow him to sleep.

The game is massive-there are 134 rooms to explore, 175 objects to collect and you have 8 lives to accomplish this. Be warned - in some places these may all go at once! Sprite movement is smooth and non-flukeing and much thought has gone into their design.

The programs have a sense of humour - the deadly toilet is back, where else but in the bathroom. Try to enter the Master Bedroom before time and Maria tells you in no uncertain terms to leave. Touching a monster will kill you, but they do have a comical quality which is largely missing in

similar games such as Technician Ted.

There is a catchy tune to listen to while you play, not as bad as most, but thankfully you can turn it off when you want to. In some rooms objects are very difficult to reach but in others there is no problem. Younger players should like this game - they can walk around different rooms until they see a likely prospect.

Rules here are very simple - if it moves, avoid it; if it glows, grab it. Your best timing skills are required in many screens in order to avoid the monsters, which include a relentless peanut, a giant foot, twirling razor blades, angry chefs and a room full of fat Marias!

The title screen is quite good with another scrolling message, the impossible triangle and a classical piano tune (very authentic that). There is a Colour/Black and White option for those with green monitors.

I've seen the Commodore 64 version of JSW and overall the Amstrad graphics are MUCH better. Issue September 85 of the UK Amstrad User has a map and a cheat program - if you're quick you can get a copy from Strategy Publications. *(Sorry, sold out - Ed).*

Summary - I found JSW on a compilation tape entitled "They Sold a Million", the best value Amstrad games package ever. It's hard to fault, it's fun to play and is generally considered to be a milestone in platforms and ladders games.

Defend or Die

ZAP that swarmer, BLAST that pod, DODGE that baiter! Sound familiar? Yes of course, this fast action game is a Defender clone, and a worthy one at that. The scenario is recognisable enough, you control a spacefighter flying above a planet, with the task of protecting the humanoids on the surface. In practise this amounts to shooting anything that moves, although as more of your humanoids are kidnapped some fast strategic thinking is also required.

There are eight different attack waves progressing in difficulty and you have six types of enemy, each behaving in its own deadly fashion. Bonuses are awarded for completing each wave and also for rescuing a falling humanoid.

Sound effects are very good, although if you don't have stereo speakers hooked up you're really missing out. Without a doubt DOD is much easier to play using a joystick simply because of the number of spacefighter functions involved e.g. thrust, reverse, fire, smart bomb up, down and hyperspace, not to mention reset and pause. Keyboard bashing here is no fun.

I could go on and on about how it compares to the arcade version, suffice to say this is an exciting fly and shoot game, very close to the original, for angry space pilots with fast reflexes.

RATINGS: (out of 8)	
Ease of use	4
Speed	7
Entertainment value	8
Documentation	6
Originality	2
Use of graphics	4
Ability to hold interest	7
TAU INDEX	56%

(Ease of use refers to pilots using joysticks. For those using keyboard only this category scores zero).

AMSTRAD TOP 25
The Official Amstrad Software Guide

	Title	Soft Number Disc	Tape
1	Sorcery+	1983	-
2	Harrier Attack	1112	112
3	3D Grand Prix	1961	961
4	Pitman's Typing Tutor	1924	924
5	3D Boxing	07025	06025
6	Hunter Killer	1135	135
7	Advanced Amsword	1164	164
8	Airwolf	7011	011
9	Tasword 6128		
10	3D Cyrus Chess	07026	06026
11	Beach Head	07001	-
12	Raid	07002	-
13	Halley's Comet	9034	034
14	Glen Hoddle Soccer	07021	06021
15	Assault on Port Stanley	07022	06022
16	Grand Prix Rally II	07012	06012
17	Wordhang	-	101
18	Lords of Midnight	1957	957
19	Amsgolf	1185	185
20	Macrocosmica	07042	06042
21	Satellite Warrior	1949	949
22	Supercalc II	07028	-
23	Mastercalc	1905	905
24	In Search of King S'mons Mines	9017	017
25	Roland in Space	1927	927

The Top 25 Software Titles Marketed by Mitsubishi Electric AWA

Adventurer's Attic

by Philip Riley

Philip gives some ideas to people who like to write Adventure programs (and maybe clues to people who play them!)

When it comes to designing your own adventure, the best attribute you can have is a vivid imagination. You must constantly devise something original without the game becoming stupid or absurd. But let's face it, some people just don't have the ability to keep on manufacturing new ideas. So, in this article I will try to provide some that you can write in your adventures. They may seem rather obvious to you as you read them, but you would be surprised at how may people would not think to include them in their own adventures.

Useless Objects

When you are designing your adventure try to include a few useless objects. These can be anything that *seem* to be relevant to the game. Of what use are they? None whatsoever, but they will keep the person playing the adventure baffled and he or she may be stuck for many hours trying to use them to get passed a particular problem. They will also come in useful if you set a limit on the amount of objects that a player can carry, but we will look into this later on in the article. So what useless objects should you include? Well, the items that will cause the most trouble to a player are those which seemingly sound useful. For instance it is no use putting a microwave oven into an adventure that is set in the Stone Age and likewise it would be fruitless to put a Roman chariot into present or future situations. By way of an example, you could have presented a locked door to the player. The normal way to open a locked door is to unlock it with a key. Provide a key, but when the words 'UNLOCK DOOR' are typed in by the player get the game to respond with 'IT IS THE WRONG KEY'. So the key is a useless object. How does he get through the door? Why not use your imagination, you can't expect me to tell you everything.

Using objects more than once

Most adventures follow the format of use an item once and then forget about it. As a result most players tend to discard an item once used. So why not use an item more than once? This can be very useful if you have events happening that stop the player going back the way that he came (See 'Blocking off the retreat'). You could have a deep pit in the adventure. To get past the deep pit the player will need to use a plank as a bridge. Most people would use the plank and then just leave it there. But what happens if he has two deep pits to cross. If he leaves the plank at the first pit and cannot return because a large rockfall has blocked off the path he took then he is most definitely stuck and will have to start again. To make things even more difficult why not put in three deep pits?!

Blocking off the retreat

What would happen if the player was quietly walking around an adventure set, say, in a

cave when suddenly a large rock fall blocked off the passage behind, effectively ending all hope of going back the way he came. But worse than that, what if he had left behind some item that he needed. To say the least he would have some difficulty finishing the game. This type of problem is extremely useful if you have useless items about the game and you have set a limit on the number of items a player can carry. The adventurer has to make a choice as to which items he wishes to take with him. If he takes the wrong ones he has no hope of finishing the game and will have to start again.

One point to remember is if you have set a limit of four items that the player can carry then you must have no more than four USEFUL objects before the rockfall otherwise the game will be impossible to finish. You may however have as many useless objects as you like. Of course, the only time you could have more than the four USEFUL objects before the rockfall is if you use four of them after the rockfall and the rest before it.

Breaking Items

One way of rendering a USEFUL item useless is to break it while trying to use it. Let's go back to the problem of the locked door or rather two locked doors. The player will only be able to get to one of these two doors at the beginning of the adventure. While looking around the various rooms he finds a key. So what does he do? He will probably go to the locked door and try the command 'UNLOCK DOOR'. The computer sends back the response 'YOU BREAK THE KEY TRYING TO UNLOCK THE DOOR. IT MUST HAVE BEEN THE WRONG KEY'. Eventually he gets past the first door by smashing it down with a hammer or some other unusual implement that happens to cross his mind at the time. Of course you guessed it, the only way of getting through the second door is by unlocking it with the key and this is impossible now the key is broken.

I have been informed by 'Ed' that readers response to Adventurer's Attic is "rather poor" and we could lose our spot if things don't improve. So get out your pens and start contributing and show him that we adventurers mean business.

Some Questions

R. Coggins of Morayfield in QLD is stuck in the rowing boat near the Island in "Jewels of Babylon", and we are still waiting to assist Anthony Eden of Kincumber, NSW who, in the same game, has gone through the stone door but can't get through the next locked door.

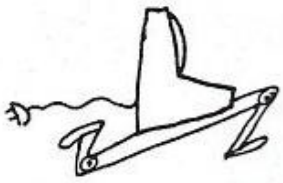
"Classic Adventure" has got Jason Clark foxed. He can't get past the Troll on the toll bridge, and in "The Hobbit", David Brooks of Maitland, NSW says "I am having difficulty in finding a way home. I have reached the Lonely Mountain, killed the dragon and picked up the treasure. When I go north I eventually come to the Empty Place. When I go south I come to the forest road where something falls and stings me. I would appreciate any help".

Finally, Darren Robinson of Reservoir in Victoria wishes to know how to get past the dog in "The Trial of Arnold Blackwood". As an aside, he also asks if anyone has any useful pokes for Technician Ted.

If anyone has the answers to help the above adventurers, rush them in to A.A.

Some Answers

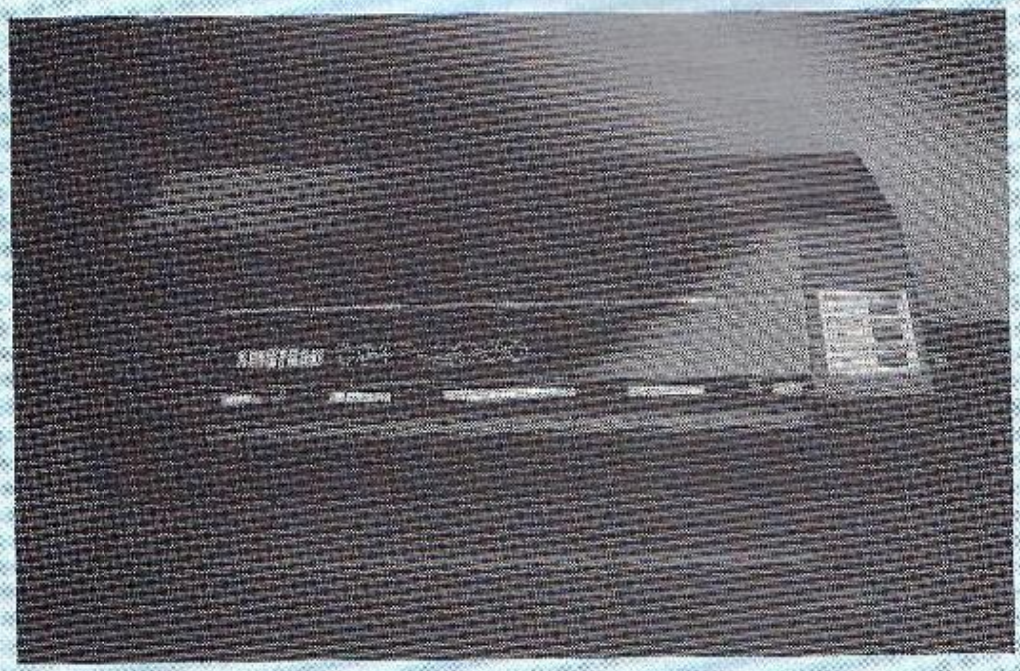
Where are they?



Review of the DMP-2000

by Andrew Martin

The DMP-2000, based upon the Riteman F, is the latest printer to be offered from Amstrad. Unlike the DMP-1, this time we get true decenders. But what else? Andrew Martin provides the answers.



Appearance

Having seen photos of the DMP 2000 I was mildly surprised to find that the real thing actually looks better than the pictures. A sleek black case with a black perspex cover, the styling of the printer leaves little to be desired.

Setting up

I have found from experience that the first thing to do when looking at a piece of hardware is read the manual. Well I did, and I must say it was a disappointment. Not a trace of "Jenglish" anywhere in sight. No ambiguous phrases or questionable translations, no examples that bear no relation to the Amstrad computers. What a let down. Instead of having the fun of wading through a manual, the sole aim of which was obviously to confuse, here I was stuck with a simple, well written, properly indexed manual with examples written in Locomotive Basic. There must be something wrong with the printer I thought to myself, and they are trying to disguise it by supplying a manual that puts the competition to shame!

Well it took about twenty minutes to set up the DMP 2000. The instructions provided were straight forward enough and I doubt that anyone would have difficulty getting it up and running. The original version of this review was written entirely using Tasword and printed using the DMP2000 in NLQ mode. Some output has been reproduced and incorporated into this published article to give you some idea of what to expect. The first operation I tried was a screen dump using the stipple type screen dump from the English magazine. This took quite

a while to complete although the results were good. I also tried a screen dump using Tascopy and this was equally satisfactory.

The printer has an excellent range of features. There are over 144 different combinations of printing available. In addition to NLQ there is italic, Double strike, Superscript, Subscript, Normal (or high speed) mode etc. etc. Also it is possible to set up a series of VERTICAL TAB templates which are then accessed using 'channels' The upshot is that different VERTICAL TAB settings can be set prior to printing and then be switched to as required. For example if you are printing on a pre-printed form it is possible to use different TAB settings for different parts of the form by selecting one of a maximum of eight pre-defined TAB 'channels'. Up to sixteen different TAB settings can be set to each 'channel'.

Other features include a 'one-shot' reverse line feed, a listing in the manual for a graphics and a text screen dump, and a hex dump facility. The printer is also able to print on thin card which will enable posters etc. to be printed. This is possible mainly due to the fact that the print head prints DOWN onto the paper which is fed through the printer from front to back and does not wind around a platten as it travels through the printer. In addition there is a paper thickness adjustment.

Technical Specifications

The manual provides a chapter dealing with technical data. The printer can print 105 characters per second in draft mode and provides six different print sizes. A detailed table showing the pin allocation of the interface is provided and a dip switch table which allows selection of international character sets and alteration of the default typeface, which means that you can set the printer to print NLQ always unless told otherwise.

The bad news

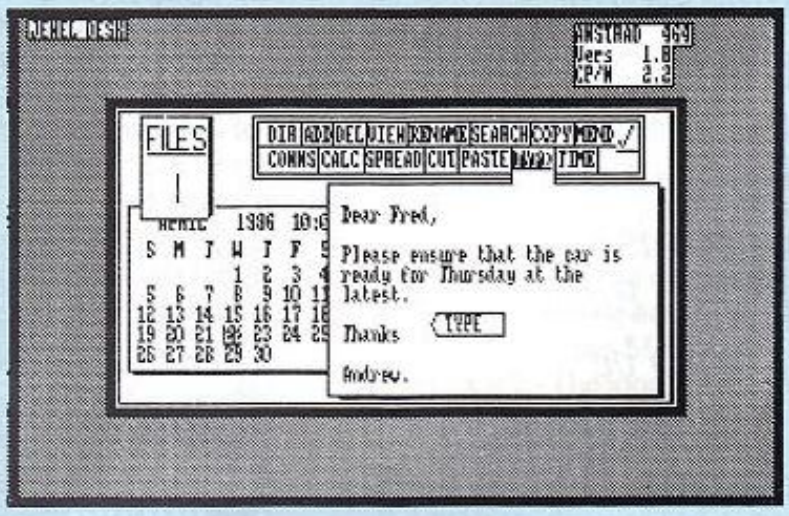
Unfortunately there are some points to be noted that are not in the DMP2000's favour.

Firstly there is no serrated edge to tear off pages of tractor fed stationery. This may seem a small point but I found it very inconvenient. Also, because the print head is located in the middle of the machine and is covered by the black perspex lid, it is not possible to do a visual check on the printing unless you open the lid and peer inside. Otherwise you have to wait until about half a page has been printed before the printing starts to appear out the back. Finally, and most importantly, the price currently being asked of $519.00 including the cable seems a bit high.

Conclusions

This is a very attractive package with a wider than average range of options. Any product that can offer more versatility than its competitors deserves to be supported and the DMP2000 is certainly more flexible than any of the printers I have seen attached to an Amstrad. However I feel that intending purchasers would be wise to examine other parallel printers in this price range before making the plunge. Many new owners of Amstrads do not realise that any Centronics Parallel Port printer can be used with an Amstrad and therefore do not take the opportunity to shop around. However, you may feel that it's worth paying a little extra for a genuine Amstrad printer with lots of good features, actual Amstrad code in the manual that makes the features work and of course, Amstrad's proven reliability.

The decision is yours.



Sample Screen Dumps on the DMP-2000

PCG Designer

by Peter Doutch

We have received many character re-defining programs in the past but most of them were the same so did not get published. This one is different, in that the output is saved to disc as a Basic program to be later incorporated into a main program.

Have you ever played a game, such as Roland In Time, and taken a close look at some of the animated characters that move around the screen at great speed. These, as you might already know, are achieved by re-defining a character from the ASCII code to make it appear as something different.

When I re-define a character, I find it is easier to draw up a few eight by eight squares on graph paper. The reason the square is eight by eight is because each character is built up of 64 tiny squares called pixels. The pixel lengths vary depending on which Mode you are in at the time. For example in Mode 0 the pixels are twice the length as they are in Mode 1, and in Mode 2 they are half the size as they are in Mode 1. This gives the effect of 'fat' letters in Mode 0, 'square' letters in Mode 1 and 'skinny' letters in Mode 2.

After ruling up your squares you can start to draw in your picture. Take a look at Fig 1.1 and you will notice I have already drawn a picture of a tractor, which appears at the start of the program accompanying this article.

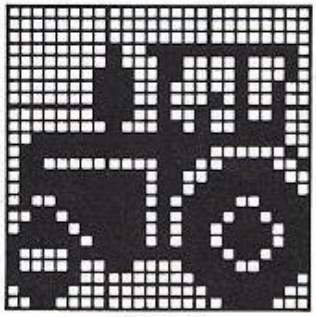


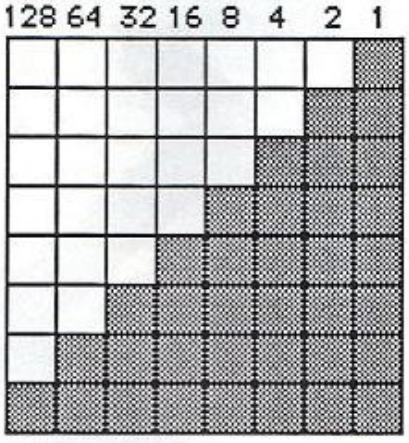
Fig 1.1

As you can see some squares are filled and some are not, this is because the filled squares are the ones I want to be able to see and display and the ones left blank will show nothing.

So how do we go about making our pretty picture show up on the screen? To answer this question you must be familiar with the use of binary numbers. Now this all sounds very complicated but is very easy when you know how. The method has been explained in previous issues of The Amstrad User, but it will do no harm to take another look.

Unlike our daily decimal number system (1 to 9), binary numbers consist of just two numbers, these are "0" and "1".

How can we use binary numbers to re-define characters ? This is a very simple process but to accomplish it you have to understand the structure as shown in the following table:



Line 1= 0+0+0+0+0+0+0+1 = 001
Line 2= 0+0+0+0+0+0+2+1 = 003
Line 3= 0+0+0+0+0+4+2+1 = 007
Line 4= 0+0+0+0+8+4+2+1 = 015

Line 5=0+0+0+16+8+4+2+1 = 031
Line 6=0+0+32+16+8+4+2+1 = 063
Line 7=0+64+32+16+8+4+2+1 = 127
Line 8=128+64+32+16+8+4+2+1 = 255

Fig 1.2

As you can see it is a typical 8 * 8 grid except it has a few numbers up the top. It also has a few filled squares on each line. For each line across, a string of binary numbers (1's and 0's) are used to identify which squares are filled (the 1's) and which are not (the 0's). The position of the 1's determines the value they take from the top of the grid. So, to turn a binary number into a decimal number it is important that you know the eight values on the top row of the grid. As they never change, it is easy to remember.

Let me give you an example. We'll take the binary number 10110011 and turn it into a decimal number. There are two ways we can tackle this problem, we can either use the computer to work it out or solve it mathematically.

Using the computer type the following:

PRINT &X10110011 (ENTER)

The screen should look like this:

PRINT &X10110011
179
Ready

To solve this problem mathematically we first have to break the number up into eight separate numbers: 1, 0,1,1,0 0,1,1.

By referring back to the grid we can see that if the first number from the right is a "1" it is equivalent to the value 128, if it was a "0" it would have a value of zero. Added onto this number is the value of the next number which happens to be a zero. If this number was a "1" it would have the value of 64. Can you see the pattern that is being used? After adding all the eight values you will come up with the value 179. This means that the number 179 is equal to the binary number of 10110011.

This still doesn't explain how binary numbers can be used to re-define characters. Take another look at the tractor in Fig 1.1. again. The middle three 8 * 8 grids are the same as in Fig 1.3.

Fig 1.3

In the first square what is the binary number for the top line? If your answer came out to be 00000001 then you were correct. Next look at the other numbers in turn and write down their decimal equivalent.

When you have finished you should have a list of eight numbers looking like this:

Binary	Decimal
Line 1 - 00000001	1
Line 2 - 00000000	0
Line 3 - 00111111	63
Line 4 - 01111111	127
Line 5 - 01100000	96
Line 6 - 01111111	127
Line 7 - 01111101	125
Line 8 - 01001111	79

If you take a close look at the above set of binary numbers, espacially the 1's, they form similar pattern to the picture in the first square in the second row. By changing these binary numbers into decimal numbers the computer will know what the shape will look like, and to do this we use the SYMBOL command.

When using the symbol command we do not worry about using the binary numbers but we use their decimal equilvalent. Page 79 chapter 3 in the Instruction Manual tells you what each parameter in the symbol command does, so when using the command it should look like this:

SYMBOL 65,1,0,63,127,96,127,
125,79 (enter)

NOTE: In this example, the number 65 means character 65, which is the letter A.

When you execute the above line you would have re-defined that letter. Press the key marked A and try it, but remember it must be an upper case A.

This is all very fine so how does P.C.G. Designer help me? P.C.G. Designer is a utility that re-defines characters for the user.

It takes the eight binary numbers from each square and converts them to decimal and then saves them to disc as a basic program.

Lets have a look at the program and see how it works. The main part of the program starts at line 180. You may have noticed two input statements in the previous two lines.They collect information from the user to tell the computer how many times to go through the loop.

In the main program the following variables are used:

START - tells the computer at which character you wish to start re-defining your characters.

NUMBER - tells the computer how may characters you wish to re-define.

MAXX - maximum number that the character can be.

LINENUMBER - Goes in increments of ten, saves the line number of every statement to disc.

LOOP - this is the main loop, it loops the amount of characters which are being definedstops when it reaches MAXX.

LOOP2 - The loop for accepting the eight binary numbers.

COUNT - which binary number you are up to, number between 1 - 8.

BINN$ - String which holds binary number currently being used.

LOOP3 - which position of the string you are searching, with MID$ command.

N(LOOP2) - array which holds the decimal number after conversion stage.

A - Loop holding number between 2 - 7 for identification when saving to disc.

N(A) - decimal number which is saved to disc.

MES$ - string which holds copyright notice.

All the binary to decimal conversions are done in line 300 and is a little too complicated to explain in this article.

To use the program simply answer the questions at the start and then enter in your binary numbers, the program will do the rest.

The basic program created is called SPRITE.BAS and is kept under the string of DISCNAME$ which is defined in line 640. Make sure if you re-run the program, that your original SPRITE.BAS does not get overwritten (unless you want it to), by saving it under another name.

I hope you enjoy using P.C.G. Designer. It should take a lot of the hard work out of designing characters.

Note: This program was written for the CPC664/CPC6128 but can be run on the CPC464 (with disc drive attached) providing the 'FRAME' command in line 1400 is replaced with "CALL &BD19"

```
10 REM
20 REM    PCG DESIGNER.
30 REM          By
40 REM    PETER DOUTCH
50 REM  COPYRIGHT 1986
60 REM COLTECH SOFTWARE
70 REM
80 GOSUB 650
90 WINDOW #1,13,46,5,13
100 WINDOW #2,56,66,5,13
110 OPENOUT DISCNAME$
120 REM
130 REM COLLECT INFO
140 REM
150 LOCATE 27,22:PRINT MES$
160 LOCATE 15,4:INPUT "HOW MANY CHARACTE
RS DO YOU WISH TO RE-DEFINE : ",NUMBER
170 LOCATE 17,6:INPUT "WHICH CHARACTER D
O YOU WISH TO START AT : ",START
180 CLS:MAXX=START+(NUMBER-1)
190 LOCATE 27,22:PRINT MES$
200 PRINT#9,LINENUMBER;"SYMBOL AFTER";ST
ART-1
210 LINENUMBER=LINENUMBER+10
220 FOR LOOP=START TO MAXX
230 REM
240  FOR LOOP2=1 TO 8
250   PRINT#1,COUNT": BINARY NUMBER FOR
";LOOP;" IS":INPUT#2,": ",BINN$
260   FOR LOOP3=0 TO 7
270    REM
280    REM CONVERT BINARY STRING INTO A
INTEGER
290    REM
300    N(LOOP2)=N(LOOP2)+VAL(MID$(BINN$,
8-LOOP3,1))*2^LOOP3
310   NEXT LOOP3
320   COUNT=COUNT+1
330  NEXT LOOP2
340  REM
350  REM SAVE DATA TO DISC/TAPE.
360  REM
370  PRINT#9, LINENUMBER;"SYMBOL";LOOP",
"N(1);CHR$(8)",";
380  FOR A=2 TO 7
390   PRINT#9, N(A)",";CHR$(8);:N(A)=0
400  NEXT A
410  PRINT#9, N(8):N(8)=0:N(1)=0
420  LINENUMBER=LINENUMBER+10:COUNT=1
430  CLS#1:CLS#2
440 NEXT LOOP
450 REM
460 REM  END OPTIONS
470 REM
480 MODE 1:INK 1,13,0:INK 2,24:INK 3,6
490 LOCATE 13,12:PEN 2:PRINT "SAVING FIL
E..."
500 LOCATE 8,24:PEN 3:PRINT MES$
510 CLOSEOUT
520 LOCATE 13,12:PRINT SPACE$(14)
530 LOCATE 18,2:PEN 1:PRINT "MENU"
540 LOCATE 9,4:PEN 2:PRINT "F1  EXIT TO
BASIC."
550 LOCATE 9,6:PEN 3:PRINT "F2  EXIT TO
CPM."
560 LOCATE 9,8:PEN 2:PRINT "F3  LOAD PCG
 PROGRAM"
570 LOCATE 9,10:PEN 3:PRINT "F4  RE-STAR
T PROGRAM."
580 LOCATE 9,19:PEN 2:PRINT "WHAT IS YOU
R SELECTION "
590 K$=INKEY$:IF K$="" THEN 590
600 ON INSTR("1234",K$) GOTO 1500,1540,1
590,1600
610 CLS:PRINT CHR$(7):GOTO 480
620 REM
630 REM DEFINE ROUTINE
640 REM
650 MODE 1:INK 0,0:INK 1,0:INK 3,0:INK 2
,24
660 BORDER 0:PAPER 0:CLS
670 ENV 1,7,2,1:ENT 1,100,2,2
680 MES$=CHR$(164)+" 1986, COLTECH SOFTW
ARE."
690 DISCNAME$="SPRITE.BAS"
700 TITLE$=" PCG DESIGNER. ":LINENUMBER=
10:COUNT=1
710 REM
720 REM DISPLAY TITLE
730 REM
740 CHARS=LEN(TITLE$):PIXELS=(CHARS*8)
750 X=(639-CHARS*32)/2
760 LOCATE 1,1:PEN 3:PRINT TITLE$;:LOCAT
E 13,25:PEN 2:PRINT "Please wait..."
770 TX=X:Y=220:Y2=398
780 FOR P=1 TO 8:X2=0
```

```
790  FOR G=1 TO PIXELS
800    IF TEST(X2,Y2)=3 THEN PLOT X,Y,1:P
LOT X,Y-2:PLOT X+2,Y:PLOT X+2,Y-2
810    X=X+4:X2=X2+2
820  NEXT G:Y=Y-4:Y2=Y2-2:X=TX
830 NEXT F
840 LOCATE 1,1:PRINT SPACE$(CHARS)
850 LOCATE 13,25:PRINT SPACE$(14)
860 INK 2,24:INK 3,6,2:INK 1,13:LOCATE 1
,25:FOR L=1 TO 10:PRINT:NEXT L
870 LOCATE 19,7:PEN 3:PRINT "By"
880 LOCATE 14,9:PEN 2:PRINT "Peter Doutc
h."
890 LOCATE 12,11:PEN 3:PRINT "Graphical
Artist"
900 LOCATE 12,13:PEN 2:PRINT "Michael  D
outch."
910 LOCATE 11,15:PEN 3:PRINT "Technical
Adviser"
920 LOCATE 13,17:PEN 2:PRINT "Richard He
in."
930 LOCATE  8,19:PEN 3:PRINT MES$
940 LOCATE 13,21:PEN 2:PRINT " PRESS ANY
 KEY "
950 SYMBOL AFTER 64
960 REM
970 REM PCG CHARACTERS FOR TRAIN
980 REM
990 SYMBOL 72,0,0,0,0,0,1,1,1
1000 SYMBOL 73,0,0,0,159,140,204,200,200
1010 SYMBOL 74,0,0,0,254,34,34,36,164
1020 SYMBOL 75,0,0,0,0,31,31,31,31
1030 SYMBOL 76,0,0,12,30,255,255,255,255
1040 SYMBOL 77,0,0,0,0,255,248,251,251
1050 SYMBOL 78,0,0,0,0,255,31,223,223
1060 SYMBOL 79,0,0,0,0,255,176,54,182
1070 SYMBOL 80,0,0,7,15,255,133,181,181
1080 SYMBOL 81,0,0,0,128,255,255,255,255
1090 SYMBOL 82,1,0,63,127,96,127,125,79
1100 SYMBOL 83,201,141,255,14,236,236,23
7,107
1110 SYMBOL 84,36,60,252,2,121,253,254,2
07
1120 SYMBOL 85,31,31,30,30,30,31,223,255
1130 SYMBOL 86,143,119,139,187,139,119,1
43,255
1140 SYMBOL 87,251,251,251,248,251,250,2
50,250
1150 SYMBOL 88,223,223,223,31,255,48,214
,214
1160 SYMBOL 89,176,190,190,30,255,180,18
3,183
1170 SYMBOL 90,204,181,181,132,255,16,11
9,119
1180 SYMBOL 91,63,191,191,47,255,183,183
,135
1190 SYMBOL 92,55,123,253,207,204,252,12
0,48
1200 SYMBOL 93,107,235,235,255,195,1,0,0
1210 SYMBOL 94,183,123,123,183,207,254,2
52,120
1220 SYMBOL 95,255,223,31,31,0,0,0,0
1230 SYMBOL 96,255,255,255,255,70,70,70,
57
1240 SYMBOL 97,250,250,250,255,33,33,32,
192
1250 SYMBOL 98,214,214,48,255,0,255,0,0
1260 SYMBOL 99,183,183,135,255,16,240,0,
0
1270 SYMBOL 100,119,119,112,255,140,140,
140,115
1280 SYMBOL 101,183,183,181,255,64,64,64
,128
1290 SYMBOL 102,0,0,0,0,0,0,0,0
1300 SYMBOL 103,3,1,3,5,9,17,33,0
1310 SYMBOL 104,0,0,64,192,64,0,0,0
1320 REM
1330 REM PRINT TRAIN COMING ACROSS SCREE
N
1340 REM
1350 PRINT
1360 TT$="HIJKLMNOPQ "
1370 TM$="RSTUVWXYZ[ "
1380 TB$="\]^_`abcde "
1390 FOR A=1 TO 25
1400  FRAME:SOUND 1,0,0,15,1,,1:SOUND 2,
0,25,15,15:SOUND 4,84,50,15,,,20
1410  LOCATE 40-A,23:PEN 1:PRINT LEFT$(T
T$,A)
1420  LOCATE 40-A,24:PEN 1:PRINT LEFT$(T
M$,A)
1430  LOCATE 40-A,25:PEN 1:PRINT LEFT$(T
B$,A)
1440   IF INKEY$="" THEN 1450 ELSE 1480
1450   SOUND 1,0,0,15,1,,1:SOUND 2,0,25,
15,15:NEXT A
1460 SOUND 1,0,0,15,1,,1:SOUND 2,0,25,15
,15:SOUND 4,840,5,15,,,20
1470 IF INKEY$="" THEN 1470
1480 SYMBOL AFTER 1
1490 INK 1,24:MODE 2:RETURN
1500 CLS:|BASIC
1510 REM
1520 REM EXIT TO CPM.
1530 REM
1540 CLS:LOCATE 12,9:PEN 2:PRINT "Place
A Disc In "
1550 LOCATE 13,11:PEN 3:PRINT "Drive A:
Then"
1560 LOCATE 14,13:PEN 1:PRINT "Hit Any K
ey"
1570 WHILE INKEY$="":WEND
1580 |CPM
1590 INK 1,24:PEN 1:MODE 2:LOAD DISCNAME
$
1600 CLS:RUN
1610 REM
1620 REM
1630 REM        END OF LISTING.
1640 REM (c). 1986 COLTECH SOFTWARE.

1650 REM
1660 REM      TOTAL OF 171 LINES.
1670 REM        WILL OCCUPY 6K.
1680 REM      FOR USE WITH CPC464
1690 REM REPLACE `FRAME' IN LINE 1400
1700 REM       WITH `CALL &BD19'.
1710 REM
```

Listing control codes embedded in strings

Petr Lukes provides information on some of the more unusual aspects of Basic on the Amstrad.

The CPC BASIC allows us to enter control codes directly into strings from the keyboard. The control codes are produced by holding down the CTRL key while pressing a printable key. For example, the code 7 is obtained by the CTRL+G combination, and will be indicated in this text as ~G. The tilde is not used by BASIC, while the usual indicator (up-arrow ^) is, as well as being one of the keys which can produce control codes.

PRINT CHR$(7) will sound a beep; the same result can be achieved by PRINT"~G". The character within the quotes will be a stylized bell. The controls can be embedded in input prompts and USING strings: to indicate that the operator's action is required, a prompt such as

PRINT CHR$(24)CHR$(7)"Inverse with beep"CHR$(24);:INPUT a can be replaced by INPUT"~X~GInverse with beep~X";a.

The action of the printed control codes is detailed in Chapter 9 of the CPC464 User Instructions. They can be used to change modes and ink colours, clear parts of the window, etc., as well as to turn the screen on and off. There are three codes which cannot be entered directly: 0 (~@) is ignored; 13 (~M) is equivalent to ENTER, and will terminate the entry; and 16 (~P) is equivalent to CLR, and will erase the character under the cursor.

There is a problem with producing a printed listing of a program which contains embedded control codes: the printer will either ignore them or perform all kinds of undesirable actions. The enclosed routine will deal with the problem. With the exception of LF and CR (codes 10 and 13), all characters are converted into the printable range of 32 (space) to 126 (tilde~). Incidentally, the tilde can be produced on the keyboard by CTRL+". Control codes will be indicated as they are in this text, by a tilde followed by the character which corresponds to the code with 64 added to it.

Carriage Return is always passed unchanged; Line Feed is sent unchanged only if it follows a CR, as it does at the end of each listed line. When it appears within a line, it is treated as an embedded control code. The LF-after-CR can be suppressed by altering a relative jump.

Programs published in this magazine are typeset from a magnetic medium, and it is likely that the typesetting program would be upset by control codes other than LF and CR, or codes greater than 126. There is a provision to direct the converted output to tape or disc.

The HISOFT Devpak and Pascal save the source code to disc in a compressed form which only they can read back, but send out full ASCII text to the printer. Redirection of the MC PRINT CHAR routine to CAS OUT CHAR should make it possible to produce a disc copy of the listing which could be read by the typesetting program.

The machine language routine is

stored in a string in the BASIC program area. Once it is entered and tested, the lines 40-60 may be deleted, and if the program is suitably renumbered and saved in ASCII, it can be merged with any program and used to produce a listing with the control codes converted.

A string defined in the program area is not moved into string storage and the variable address block is set up to point to the program area: PEEK(@x$) returns the length of the string as usual, and PEEK(@x$+1)+PEEK(@x$+2)*256 returns the address of the first character following the opening quote. This effectively reserves a known area of memory which will be saved and loaded as part of the program. The original DATA values and the loader are redundant after the first run, and can be deleted.

This technique has a number of limitations. The routine must be fully relocatable (i.e. no absolute jumps or calls other than to fixed addresses in the operating system), it must be short enough to fit into the maximum string length, and it must not contain certain codes. The quote (34d/22h) is a string terminator and cannot be included. The disc system uses 26d/1Ah as the EOF token, and its inclusion will prevent reloading. So will NULL (00) if the program is saved normally, or CR (13d/0Dh) if the program is saved in ASCII; each acts as a line terminator in the respective loading mode.

It is usually possible to avoid the prohibited codes by using devious manipulations, some of which are demonstrated in the assembly listing. RST 30h is not used by the operating system, and can come in handy for temporary storage of values or addressed.

Assembly listing : character is in reg A on entry

```
c5          push bc
e5          push hl
213301      ld hl,#0133
25          dec h;hl=#0033,avoids 00 in
            string
f680        or 128;set bit 7
feff        cp 255;would produce DEL
2817        jr z,conv
fea0        cp160;=> space ?
301c        jr nc,send
47          ld b,a;b is temporary store for
            char
d686        sub 134;test for CR
d607        sub 7;avoids code 13
78          ld a,b;recover char
2814        jr z,send
fe8a        cp 138;= LF ?
2007        jr nz,conv
7e          ld a,(hl):test previous char
90          sub b
fe83        cp 13-138;was it CR ?
78          ld a,b
2809        jr z,send
(2810       jr z,out;alternate,will ignore
            LF)
c640  conv  or 64;add 64 to control
47          ld b,a
3e7e  tilde ld a,126
f7          rst 48
30+b        jr nc,tilde
78          ld a,b
e67f  send  and 127;remove bit 7
47          ld b,a
78    char  ld a,b
f7          rst 48
30fc        jr nc,char
70    out   ld (hl),b;store current char
e1          pop hl
c1          pop bc
37          scf
c9          ret
```

Basic Listing

```
10 PRINT"Routine to convert control code
s into printable characters LKS 860410"
20 PRINT"Output may be directed to print
er or tape/disc":CALL &BD37:WIDTH 255:!D
ISC
30 x$="...the..string..must..be..exactly
..56..chars..long.....":a=PEEK(@x$+1)+P
EEK(@x$+2)*256
40 RESTORE 40:IF LEN(x$)<>56 THEN PRINT"
Wrong string length":EDIT 30
50 DATA c5,e5,21,33,01,25,f6,80,fe,ff,28
,17,fe,a0,30,1c,47,d6,86,d6,07,78,28,14,
fe,8a,20,07,7e,90,fe,83,78,28,09,c6,40,4
7,3e,7e,f7,30,fb,78,e6,7f,47,78,f7,30,fc
,70,e1,c1,37,c9
60 c=0:FOR b=0 TO 55:READ x$:PRINT x$" "
;:d=VAL("&"+x$):POKE a+b,d:c=c XOR d:NEX
T b:PRINT:IF c<>193 THEN PRINT"Error in
data":EDIT 50
70 WHILE NOT(x$="p"OR x$="t"):INPUT"Dire
ct output to printer or tape/disc (p/t)
";x$:WEND:L$="LIST[ from.line-to.line,]#
8"
80 b=&BD2B:FOR c=0 TO 3:POKE &30+c,PEEK(
b+c):NEXT c'copy MC PRINT CHAR vector to
 RST#6
90 POKE b,&C3:POKE b+1,UNT(a AND 255):PO
KE b+2,FIX(a/256)'redirect MC PRINT CHAR
 to routine in x$
100 IF x$="p"THEN PRINT"Enter "L$:GOTO 1
30
110 PRINT"This routine will produce a ta
pe/disc version with control codes conve
rted":PRINT"This version should load, bu
t will not perform as expected":PRINT"En
ter:":PRINT"OPENOUT"CHR$(34)"prog":PRINT
 L$:PRINT"FOR a=0 TO 50:CLOSEOUT:NEXT"
120 POKE &30,&C3:POKE &31,&95:POKE &32,&
BC'redirect RST#6 to jump to CAS OUT CHA
R
130 PRINT"Finally enter CALL&bd37:!DISC
to reset the jumpblock":PRINT"(COPY curs
or may be used)"
```

If you had gone walk-about last month, you may not know that we have moved.
Our new address and telephone number is:

Strategy Publications (The Amstrad User)
Suite 1, 245 Springvale Road
Glen Waverley, Victoria 3150

Telephone: (03) 233 9661

Result of the Music Competition

The number of entries was low, and the standard was, once again, disappointing. It was clear that in a lot of cases much time had been spent in converting "sheet music" to the Amstrad, but few entries attempted to use the full capabilities of the machine to produce interesting effects.

Nevertheless, from the short list emerged one winner. Our congratulations go to **Keith Saw** of Warnbro, WA with his arrangement of "Memories" from the musical "CATS". Keith has won a Sanyo portable cassette recorder with AM/FM radio and graphic equalizer. Well done!

Our Musical Maestro, Peter Campbell, has this to say about the winning entry:

"Keith Saw has set out to imitate a fairground organ and, in that, he has succeeded. He has used all three voices to good effect, although to my ear, the use of a vibrato (tone envelope) on the main melody line is something of an overkill. I would suggest using the envelope on voice 2, letting the melody line ring out without added vibrato.
An interesting variation can be obtained by taking the main melody line up an octave and, given the construction of the program, all that is needed is to alter line 1140 to read:

```
1140 if rpt<89 then sound 1,a,30,6
else sound 1,a/2,30,6
```

Keith has created the long notes by repeating short ones, preventing the easy addition of a volume envelope, an addition which could have added a little light and shade to the melody (even if it was only hardware envelope 13). Reading the duration in from the DATA statements would have overcome this problem. The use of 999 in the data statements to automatically trigger a RESTORE is a neat piece of programming, but the construction of the main program loop would have been better accomplished through the use of a WHILE .... WEND structure.
However, what counts in the end with any program involving sound is obviously how it sounds, and played through the SSA-1 speakers this sounds pretty good. Congratulations, Keith."

Recursive Curves

An experiment with LOGO

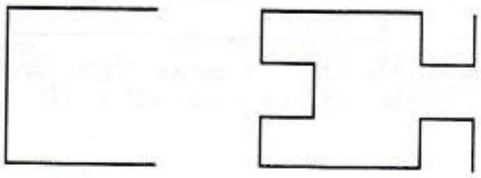
by Jeff Hughes

In his book "Algorithms + Data Structure = Programs", Niklaus Wirth, the inventor of Pascal, describes a neat example of the use of recursion viz recursive curves. The first example is the Hilbert Curve (first described by Hilbert in 1891).

The Hilbert Curve of order i, Hi, consists of four half sized copies of Hi-1 (appropriately rotated). If the four part are denoted A, B, C and D and the lines connecting them by arrows, then the curves can be described by the following scheme:

A: D ← A ↓ A → B
B: C ↑ B → B ↓ A
C: B → C ↑ C ← D
D: A ↓ D ← D ↑ C

If H0 is the empty curve (or single point) then H1 and H2 can be represented as:



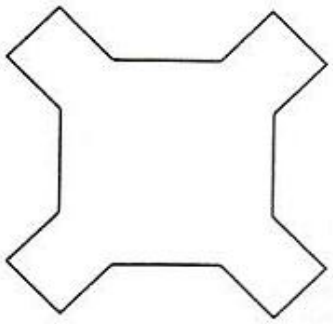
H1 H2

The listing for 'pattern' enables a pattern to be created by overlapping Hilbert curves H1, H2 ....., Hn, using LOGO. This language is ideally suited to implementing a recursive scheme using graphics. Wirth's program was written Pascal, but graphics are only supported in recent versions, such as TURBO PASCAL (which actually uses LOGO type turtle graphics!).

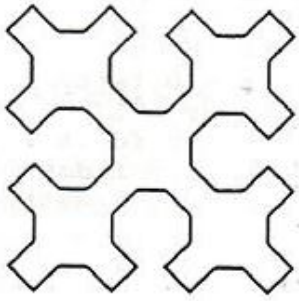
The procedures left, right, up and down draw lines of length 'h' using absolute directions, as opposed to 'rt' and 'lt' which rotate according to the current turtle heading. 'a', 'b', 'c' and 'd' are procedures which implement the recursive scheme described above. The procedure 'a' draws the Hilbert curve of order 'n' (eg. 'a 256 5' will draw H5). 'Pattern 256 5' will draw a pattern of overlapping H1 - H5. Orders higher than 5 are not recommended unless you have lots of time, and anyway the screen resolution is not good enough to properly resolve H6. Don't forget to hide the turtle to speed things up a bit.

A somewhat more complex pattern can be drawn by overlapping Sierpinski curves of order i, Si.

S1



S2



In this case, S0 is non-empty (a square standing on one corner). The basic pattern is:

S: A↘B ↙C ↖D ↗

and the recursive procedures are:

A: A↘B →→ D ↗A
B: B↙C ↓↓ A↘B
C: C↖D ←← B↙C
D: D↗A ↑↑ C↖D

(double arrows denote lines of double unit length).

The procedure Sierpinski draws overlapping curves S1, S2.....Sn. The procedures 'aa', 'bb', 'cc' and 'dd' implement the recursive scheme. 'sierpinski 256 5' will draw a pleasing pattern. Again, don't bother with n>5.

A note on repeat loops - if you type in the first instruction of a repeat loop but enter and type the next instruction, Dr LOGO will insert a ']' after the first line. This can be avoided by either indenting the second line one space or typing until the line automatically wraps around. The second method is less effective as Dr LOGO will insert a ']' when the line wraps around the second time. The unwanted ']' can be removed in 'ED' mode but this is inconvenient. Note also that if you edit a procedure typed in by the first method, the repeat loop will be printed across the page as if you had typed in the procedure by the second method.

It's been a difficult program to fit into the page without wasting too much space. We've broken it up, so make sure that you enter it in the correct order as denoted by the box numbers - Ed.

1

```
to left :h
seth -90
fd :h
end
to up :h
seth 0
fd :h
end
to right :h
seth 90
fd :h
end
to down :h
seth 180
fd :h
end
to a :h :n
if :n = 0 [stop]
d :h :n - 1
left :h
```

2

```
a :h :n - 1
down :h
a :h :n - 1
right :h
b :h :n - 1
end
to b :h :n
if :n = 0 [stop]
c :h :n - 1
up :h
b :h :n - 1
right :h
b :h :n - 1
down :h
a :h :n - 1
end
to c :h :n
if :n = 0 [stop]
b :h :n - 1
right :h
```

3

```
c :h :n - 1
up :h
c :h :n - 1
left :h
d :h :n - 1
end
to d :h :n
if :n = 0 [stop]
a :h :n - 1
down :h
d :h :n - 1
left :h
d :h :n - 1
up :h
c :h :n - 1
end
to pattern :h :n
make "i 0
make "x0 :h / 2
make "y0 :x0
```

4

```
repeat :n [make "i :i + 1 make "h :h / 2 make "x0 :x0 + :h / 2 make "y0 :y0 + :h
 / 2 pu setpos [-100 -100] right :x0 up :y0 pd a :h :i]
end
to aa :h :n
if :n = 0 [stop]
aa :h :n - 1 seth 135 fd :h * 1.4
bb :h :n - 1 right :h * 2
dd :h :n - 1 seth 45 fd :h * 1.4
aa :h :n - 1
end
to bb :h :n
if :n = 0 [stop]
bb :h :n - 1
seth -135 fd :h * 1.4
cc :h :n - 1 down :h * 2
aa :h :n - 1 seth 135 fd :h * 1.4
bb :h :n - 1
end
```

```
to cc :h :n
if :n = 0 [stop]
cc :h :n - 1
seth -45 fd :h * 1.4
dd :h :n - 1 left :h * 2
bb :h :n - 1
seth -135 fd :h * 1.4
cc :h :n - 1
end
to dd :h :n
if :n = 0 [stop]
dd :h :n - 1 seth 45 fd :h * 1.4
aa :h :n - 1 up :h * 2
cc :h :n - 1
seth -45 fd :h * 1.4
dd :h :n - 1
end
to sierpinski :h0 :n
make "i 0
make "h :h0 / 4
make "x0 :h * 2
make "y0 :h * 3
repeat :n [make "i :i + 1 make "x0 :x0 - :h make "h :h / 2 make "y0 :y0 + :h mak
e "x! :x0 make "y :y0 pu setpos [-100 -100] right :x0 up :y0 pd aa :h :i seth 13
5 fd :h * 1.4 bb :h :i seth 225 fd :h * 1.4 cc :h :i seth 315 fd :h * 1.4 dd :h
:i seth 45 fd :h * 1.4]
end
```

5

Try these for size:

HT SIERPINSKI PATTERN 256 5

HT SIERPINSKI 256 4

Amsfile - the final part

by Tony Blakemore

Before we start with the last part of Amsfile, another of "them bugs" has appeared. The creature appears in lines 10 and 50 - these should be swapped around as the mode command deletes the windows. I should also mention that some people have complained about getting the message "Unknown command" popping up. Of course it will happen if you haven't got your disc drive switched on, or for that matter, you haven't got a disc drive! The | TAPE and | DISC commands are for those who are lucky enough to have a choice. If you have only a cassette reader then you will need to remove the small routine which gives you that choice.

Now back to our Mailing List. This final part really doesn't require very much explanation. It is split into three sections. The first enables you to view either part of the file or the entire file. The second produces what we have all been waiting for - the printed mailing list. The third is the quick sort facility.

How it works

Lines	4000 - 4020	Screen Messages
Lines	4030 - 4050	Selects start position of scroll through file
Lines	4060 - 4100	The binary tree search
Lines	4110 - 4160	Scrolls file
Line	4170	Checks for return to menu
Line	5000	Screen Message
Lines	5010 - 5030	Select option
Lines	5040 - 5090	Select label size
Lines	5100 - 5180	Print labels
Line	5190	Return to menu option
Lines	5220 - 5270	Print complete list
Lines	7000 - 7140	A modified Quick Sort

And that's it! As I mentioned in the first of this series, Amsfile contains the building blocks for many different types of applications, and you should by now have little problem in adapting it to suit your needs.

Amsfile

Listing number four

```
4000 PEN 2:CLS:LOCATE 10,1:PRINT MENU4$
4010 LOCATE 7,4:PRINT "PRESS A-Z TO VIEW
 PART FILE "
4020 LOCATE 7,6:PRINT"SPACE BAR TO VIEW
ALL FILE."
4030 I$=UPPER$(INKEY$):IF I$="" THEN 403
0
4040 IF I$=" " THEN HIGH=1:GOTO 4130
4050 IF I$<"A" OR I$>"Z" THEN 4030
4060 LOW=1:HIGH=FILENO
4070 WHILE HIGH>LOW
4080 MID=(LOW+HIGH)\2
4090 IF I$>LEFT$(FILE$(MID),1) THEN LOW=
MID+1 ELSE HIGH=MID
4100 WEND
4110 IF I$=LEFT$(FILE$(HIGH),1)THEN 4130
4120 LOCATE 15,19:PRINT"NO ";I$;" RECORD
S":PRINT CHR$(7):FOR A=1 TO 3000:NEXT:CL
S #4:GOTO 4030
4130 NO=HIGH:CLS:LOCATE 10,1:PRINT MENU
$:GOSUB 11000
4140 LOCATE 5,20:PRINT"HOLD SPACE BAR TO
 SCROLL FILE."
4150 FOR NO= NO TO FILENO:LOCATE 31,1:PR
INT no:GOSUB 12000
4160 GOSUB 13000:
4170 I$=UPPER$(INKEY$):IF I$="" THEN 417
0 ELSE IF i$= "M" THEN 190 ELSE IF I$="
" THEN 4180 ELSE 4170
4180 CLS#1:CLS#2:CLS#3
4190 NEXT:CLS:GOTO 190
5000 CLS:LOCATE 8,2:PRINT Menu5$:LOCATE
1,10:PRINT "SELECT (1). LABELS (2). COMP
LETE RECORD"
5010 I$=INKEY$:IF I$="" THEN 5010
5020 IF I$>"2" OR I$<"1" THEN 5010
5030 ON VAL(I$) GOTO 5040,5220
5040 CLS:LOCATE 9,2:PRINT "PRINT MAILING
 LABELS"
5050 LOCATE 3,4:PRINT "LOAD LABELS (SING
LE) INTO PRINTER."
5060 LOCATE 6,6:INPUT "SELECT LABEL SIZE
 (1-6) ",SIZE
5070 IF SIZE<1 OR SIZE>6 THEN LOCATE 30,
6:PRINT"  ":GOTO 5060
5080 LOCATE 6,10:PRINT "Press << SPACE >
>to start"
5090 WHILE INKEY$<>" ":WEND
5100 FOR nc=1 TO fileno
5110 GOSUB 12000
5120 PRINT #8
5130 PRINT #8,name$
5140 PRINT #8,addr$
5150 PRINT #8,subr$;" ";state$;" ";pcde$
5160 FOR a = 1 TO SIZE
5170 PRINT #8
5180 NEXT:
5190 IF UPPER$(INKEY$) = "M"  THEN 190
5200 NEXT
5210 GOTO 190
5220 CLS:GOSUB 12000:LOCATE 9,2:PRINT "P
RINT COMPLETE LIST"
5230 FOR no=1 TO fileno
5240 GOSUB 12000
5250 PRINT #8,name$;" ";addr$;" ";subr$;
" ";phne$;" ";state$;" ";pcde$
5260 IF UPPER$(INKEY$)="M" THEN 190
5270 NEXT:GOTO 200
7000 DIM STACK1(16),STACK2(16)
7010 SP=0:HEAD=1:TAIL=FILENO
7020 WHILE HEAD<TAIL
7030 MIDDLE$=FILE$((HEAD+TAIL)\2)
7040 A=HEAD:B=TAIL
7050 WHILE FILE$(A)<MIDDLE$:A=A+1:WEND
7060 WHILE FILE$(B)>MIDDLE$:B=B-1:WEND
7070 IF A<B THEN T$=FILE$(A):FILE$(A)=FI
LE$(B):FILE$(B)=T$:A=A+1:B=B-1:GOTO 7050
7080 IF A=B THEN Q=B-1:R=A+1 ELSE Q=B:R=
A
7090 SP=SP+1:P=HEAD:S=TAIL
7100 IF Q-P<S-R THEN STACK1(SP)=R:STACK2
(SP)=S:HEAD=P:TAIL=Q ELSE STACK1(SP)=P:S
TACK2(SP)=Q:HEAD=R:TAIL=S
7110 WEND
7120 IF SP>0 THEN HEAD=STACK1(SP):TAIL=S
TACK2(SP):SP=SP-1:GOTO 7020
7130 ERASE STACK1,STACK2
7140 RETURN
```

If you haven't already done so, you can now merge all the parts and save the completed program as AMSFILE