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THE AMSTRAD USER

Issue No. 3 April 1985

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Contributions are welcomed from readers or other interested parties. If you want them returned, then please send a large SAE with all submissions.

THE AMSTRAD USER

G'day,

Welcome to Issue Number 3. A cursory glance through the issue, and the previous two may indicate to you that 'The Amstrad User' is developing a particular style. On the other hand you may not have given them a critical eye, but what should be evident is our attempt to keep the style clear and simple.

Of course we could splash a lot of colour around and produce some fancy graphics for illustrations, but would it make 'The Amstrad User' a better and more useful magazine? I doubt it - and judging by the feedback we are getting from subscribers - they doubt it too.

This month sees a further expanded User Group Contact list and an analysis by postcode of the distribution through subscriptions of this magazine. The idea behind this is to identify areas where user groups could be formed, if not already happening. I am pleased to hear that a number of groups had inaugural meetings in March, and a report from Adelaide is the first to be published this month.

The major activity as far as 'The Amstrad User' is concerned was our visit to the Australian Personal Computer Show in Sydney. (You'll find a full report within this issue). Much has been spoken and written about the interest raised by the CPC464 since its' launch, so much so that some people were beginning to wonder whether it was true or just a well-oiled publicity machine in operation. Having spent four days at the show, we can report that the interest is genuine and overwhelming.

See you next month.

Ed.

Computerised Address Book

Andrew Ferguson of Ayr in Queensland has converted this program to run on the Amstrad CPC464. It is in the type of program that can form the basis of a more complex system. Full marks to Andrew for supplying some comprehensive documentation.

Program Commentary

On run, the title page is displayed. Program asks if you wish to use old or new data. If electing to use data from tape, type "old" and program will ask for filename. Enter filename, and data will load from your data tape. First-time users will need to create files. Type "new" and you will be presented with menu choices.

To *Add a record*, enter 4. Program asks for name, which should be entered as: christian name surname (e.g. Bill Smith), with other requested details. When record is complete, program returns to menu.

To *List All Records*, enter 3. Each record will be displayed, and program will return to menu.

To *Change a Record*, enter 5. Name of record should be entered as christian name surname. Menu prompts for item to be changed. When change is entered, changed record is displayed.

To *Delete a Record*, enter 6. Record should be entered as christian name surname. Entering 7 gives instructions to *Save*, or *Return to Menu*.

Saving, program asks for filename. When entered, usual prompt for saving comes up. N.B. While saving, write filename on cassette index.

To *Find Record by Town*, enter 2. Program prompts for name of town. Entering town name gives list of all records from that particular town.

To *Find Record by Name*, enter 1. Enter name as christian name surname. Press spacebar to return to menu.

How It Works

Line	Effect
10- 100	Main loop
1000- 1090	Initialisation sub-routine
1100- 1300	create arrays
1400- 1403	checks old/new data
1410- 1550	load data from tape
3000- 3150	title page sub-routine
3500- 3850	menu
4000- 4140	sub-routines to menu choices
5000- 5190	find record/name sub-routine
6000- 6110	find record/town sub-routine
7000- 7040	list all records sub-routine
7100- 7560	edit record sub-routine
8000- 8160	delete a record sub-routine
10000-10150	add a record sub-routine
10200-10510	modifying name sub-routine
12000-12150	save record to tape

Variables Used

choi	= menu choice
size	= number of records in memory
namfld\$	= name of person
modfld\$	= name held as surname/christian name
strfld\$	= street
twNFLD\$	= town
subfld\$	= suburb
telfld\$	= telephone no.
posfld\$	= postcode
fin\$	= filename for saving/loading files to tape
cnam\$	holds christian name
sname\$	holds surname
a,c,i,l,s,t,z,contv,a\$,p\$,n\$	control variables
nrc\$,frn\$,dwr\$,temp\$,crna\$	control variables

```

1 REM This program was originally printed in 'The Home Computer Course' and was converted to Amstrad Basic by Andrew Ferguson
5 MODE 1
6 ZONE 18
10 REM *mainpg*
20 REM *greet*
30 GOSUB 3000
40 REM *initil*
50 GOSUB 1000
60 REM *choose*
70 GOSUB 3500
80 REM *execut*
90 GOSUB 4000
100 IF choi<>7 THEN 60
110 END
1000 REM *initil* subroutine
1010 GOSUB 1100
1020 GOSUB 1400
1090 RETURN
1100 REM *crearr* subroutine
1110 DIM namfld$(50)
1111 DIM town$(50)
1120 DIM modfld$(50)
1130 DIM strfld$(50)
1140 DIM twnfld$(50)
1150 DIM subfld$(50)
1160 DIM telfld$(50)
1170 DIM posfld$(50)
1210 size=1
1300 RETURN
1400 CLS:INPUT "Use old or new data";ond$
1401 IF ond$="old" THEN 1410
1402 IF ond$="new" THEN RETURN
1403 GOTO 1400
1410 INPUT "File name:";fin$
1420 OPENIN fin$
1430 INPUT #9,size
1480 FOR l=1 TO size
1490 INPUT #9,namfld$(l):INPUT #9,strfld$(l):INPUT #9,twnfld$(l)
1500 INPUT #9,subfld$(l):INPUT #9,tefld$(l):INPUT #9,modfld$(l):INPUT #9,posfld$(l)
1530 NEXT l
1540 CLOSEIN
1545 size=size+1
1550 RETURN
3000 REM *greet* subroutine
3010 PRINT CHR$(12)
3020 PRINT
3030 PRINT
3040 PRINT
3050 PRINT
3060 PRINT TAB(12);"*WELCOME TO THE*"
3080 PRINT TAB(6);"*COMPUTERIZED ADDRESS BOOK*"
3090 PRINT
3100 PRINT TAB(5);"press space-bar to continue"
3110 FOR l=1 TO 1
3120 IF INKEY$<>" " THEN l=0
3130 NEXT l
3140 PRINT CHR$(12)
3150 RETURN
3500 REM *choose* subroutine
3540 REM 'chmenu
3550 PRINT CHR$(12)

```

```

3560 PRINT "Select one of the following"
3570 PRINT
3580 PRINT
3590 PRINT
3600 PRINT"1. Find record <from name>"
3620 PRINT"2. Find records <from town>"
3640 PRINT"3. List all records"
3650 PRINT"4. Add new record"
3660 PRINT"5. Change record"
3670 PRINT"6. Delete record"
3680 PRINT"7. Exit & save"
3690 PRINT
3700 PRINT
3710 REM 'inchoi'
3720 REM
3730 l=0
3740 i=0
3750 FOR l=1 TO 1
3760 PRINT"Enter choice <1-7>"
3770 FOR i=1 TO 1
3780 a$=INKEY$
3790 IF a$="" THEN i=0
3800 NEXT i
3810 choi=VAL(a$)
3820 IF choi<1 THEN l=0
3830 IF choi>7 THEN l=0
3840 NEXT l
3850 RETURN
4000 REM *execut*
4010 REM
4020 IF choi=4 THEN GOSUB 10000
4030 REM
4040 IF choi=1 THEN GOSUB 5000
4060 IF choi=2 THEN GOSUB 6000
4080 IF choi=3 THEN GOSUB 7000
4090 IF choi=5 THEN GOSUB 7100
4100 IF choi=6 THEN GOSUB 8000
4120 IF choi=7 THEN GOSUB 12000
4140 RETURN
5000 PRINT CHR$(12);"Enter name";:INPUT frn$
5010 frn$=UPPER$(frn$):contv=100:FOR z=0 TO size-1
5020 IF frn$=UPPER$(namfld$(z)) THEN contv=z:z=size
5030 NEXT z:z=contv
5035 IF z=100 THEN RETURN
5040 PRINT CHR$(12);
5050 PRINT "Name: ",namfld$(z)
5060 PRINT "Street: ",strfld$(z)
5065 IF subfld$(z)="" THEN 5080
5070 PRINT "Suburb: ",subfld$(z)
5080 PRINT "Town: ",twnfld$(z)
5085 PRINT "Post Code: ",posfld$(z)
5090 PRINT
5100 PRINT "Telephone no.: ",telfld$(z)
5110 PRINT
5120 PRINT
5130 PRINT
5140 PRINT
5150 PRINT"press space-bar to continue"
5160 FOR l=1 TO 1
5170 IF INKEY$<>" " THEN l=0
5180 NEXT l
5190 RETURN
6000 REM find record from town
6010 PRINT CHR$(12);
6020 PRINT "Enter town";:INPUT frt$

```

```

6040 FOR l=0 TO size
6050 IF UPPER$(frt$)=UPPER$(twnfld$(l)) THEN town$(l)="yes "
ELSE town$(l)="no"
6060 NEXT l
6070 FOR z=0 TO size
6080 IF town$(z)="no" THEN 6100
6090 GOSUB 5040
6100 NEXT
6110 RETURN
7000 REM list all records
7010 FOR z=0 TO size
7015 IF namfld$(z)="" THEN l=size:GOTO 7030
7025 GOSUB 5040
7030 NEXT
7040 RETURN
7100 REM change record
7110 PRINT CHR$(12);"Enter name of record to be changed"
7120 INPUT nrc$:IF nrc$="" THEN RETURN
7125 c=100
7130 FOR l=0 TO size
7140 IF UPPER$(nrc$)=UPPER$(namfld$(l)) THEN c=l:l=size-1
7150 NEXT
7160 IF c=100 THEN RETURN
7170 CLS:PRINT "Change which item"
7180 PRINT:PRINT "1. Name"
7190 PRINT"2. Street"
7200 PRINT"3. Suburb"
7210 PRINT"4. Town"
7220 PRINT"5. Post code"
7230 PRINT"6. Telephone"
7240 FOR l=1 TO 1
7250 a=VAL(INKEY$)
7260 IF a<1 OR a>6 THEN l=0
7270 NEXT
7280 ON a GOTO 7300,7350,7400,7450,7500,7550
7290 GOTO 7240
7300 INPUT "New Name";namfld$(c)
7310 z=c:GOTO 5040
7350 INPUT "New Street";strfld$(c)
7360 z=c:GOTO 5040
7400 INPUT "New Suburb";subfld$(c)
7410 z=c:GOTO 5040
7450 INPUT "New Town";twnfld$(c)
7460 z=c:GOTO 5040
7500 INPUT "New Post code";posfld$(c)
7510 z=c:GOTO 5040
7550 INPUT "New Telephone No.";telfld$(c)
7560 z=c:GOTO 5040
8000 REM *delrec* subroutine
8001 c=100
8005 CLS
8010 INPUT "Delete which record";dwr$
8015 IF dwr$="" THEN RETURN
8020 FOR l=0 TO size
8030 IF UPPER$(dwr$)=UPPER$(namfld$(l)) THEN c=l:l=size
8040 NEXT
8050 IF c=100 THEN RETURN
8060 FOR l=c TO size
8070 namfld$(l)=namfld$(l+1)
8080 strfld$(l)=strfld$(l+1)
8090 twnfld$(l)=twnfld$(l+1)
8100 subfld$(l)=subfld$(l+1)
8110 telfld$(l)=telfld$(l+1)
8130 modfld$(l)=modfld$(l+1)
8135 posfld$(l)=posfld$(l+1)

```



```

8140 NEXT
8150 size=size-1
8160 RETURN
10000 REM *addrec* subroutine
10010 PRINT CHR$(12)
10020 INPUT "Enter name";namfld$(size)
10030 INPUT "Enter street";strfld$(size)
10040 INPUT "Enter suburb";subfld$(size)
10050 INPUT "Enter town";townfld$(size)
10055 INPUT "Enter post code";posfld$(size)
10056 PRINT
10060 INPUT "Enter telephone number";telfld$(size)
10070 rmod=1
10100 GOSUB 10200
10110 choi=0
10120 size=size+1
10130 REM
10140 REM
10150 RETURN
10200 REM *modnam* subroutine
10250 n$=namfld$(size)
10255 IF n$="" THEN size=size-1:RETURN
10260 FOR l=1 TO LEN(n$)
10270 temp$=MID$(n$,l,1)
10280 t=ASC(temp$)
10290 IF t>=97 THEN t=t-32
10300 temp$=CHR$(t)
10310 p$=p$+temp$
10320 NEXT l
10330 n$=p$
10340 REM locate last space
10350 FOR l=1 TO LEN(n$)
10360 IF MID$(n$,l,1)=" " THEN s=l
10370 NEXT l
10380 REM remove rubbish and store forname
10400 FOR l=1 TO s-1
10410 IF ASC(MID$(n$,l,1))>64 THEN cnam$=cnam$+MID$(n$,l,1)
10420 NEXT l
10430 REM remove rubbish and store surname
10450 FOR l=s+1 TO LEN(n$)
10460 IF ASC(MID$(n$,l,1))>64 THEN snam$=snam$+MID$(n$,l,1)
10470 NEXT l
10471 IF cnam$="" THEN 10480
10472 crna$=cnam$:crna$=LOWER$(crna$)
10473 cnam$=UPPER$(MID$(crna$,1,1))+RIGHT$(crna$,LEN(crna$)-
1)
10474 crna$=""
10480 modfld$(size)=snam$+" "+cnam$
10490 p$="":n$="":snam$="":cnam$=""
10510 RETURN
12000 REM *savrec* subroutine
12010 CLS:PRINT "Hit space to save or any other key to go to
Menu"
12020 a$=INKEY$
12025 IF a$="" THEN 12020
12026 IF a$=" " THEN 12030
12027 choi=0:RETURN
12030 INPUT "File name:";fin$
12035 OPENOUT fin$
12040 PRINT #9,size
12050 FOR l=0 TO size
12060 PRINT #9,namfld$(l):PRINT #9,strfld$(l):PRINT #9,twnfld$(l)
12070 PRINT #9,subfld$(l):PRINT #9,telfld$(l):PRINT #9,modfld$(l):PRINT #9,posfld$(l)
12080 NEXT l
12130 CLOSEOUT
12150 RETURN

```

The Learning Centre

We received a letter from Sharon Caruana of Altona, Victoria which contained a number of questions relating to the Amstrad CPC464. As these questions are really a summary of the many already received, we are devoting this months' Learning Centre to some of the answers.

There are basically three questions in Sharon's letter which regularly appear in correspondence from other new users.

1. What books and software are available for the Amstrad CPC464?
2. Can you use software designed for other machines on the CPC464?
3. Is the BASIC language the same for all computers, if not, how does it differ?

BOOKS AND SOFTWARE

Lets take a look at the books first. A number of titles were published around the same time as the launch of the CPC464. Many where 'converted versions' of titles published for other micros. Some appear to have been hastily re-written and contain a few errors, although not too difficult to fix. The number of books available is increasing each month, but at the moment is dependent upon foreign publishers, and because they are imported in small numbers it is difficult to identify those which are available. However, the following titles should be available from most dealers:

- Amstrad Computing
- 40 Educational Games
- Sensational Games (Reprinting)
- Amstrad Games Book
- Working Amstrad
- Introducing LOGO
- C.P.M. Users Guide
- C.P.M. and the personal computer
- C.P.M. Handbook
- LOGO Programming
- Advanced Users Guide
- BASIC programming
- Machine Code for beginners

The last three titles in the above list

are available through The Amstrad User at a discounted price to subscribers only.

As far as software is concerned, it is impossible to list all the titles currently available as there are in excess of 200. Again, many are available from local dealers or direct from software suppliers. The list appears to be growing on a daily basis and could easily be upto 600 by the end of the year. We are currently considering producing a directory of software for the CPC464 which would be published regularly in this magazine. It would be a list of titles, price and supplier, but don't hold your breath as it will take quite a while to compile.

BASIC – the language

We can almost answer the next two questions together, by providing a simple explanation of the history of the language.

Like any language, BASIC is used by people for the communication of ideas. Unlike English, French, or German the intended recipient of a communication in BASIC is a calculating machine which is somehow equipped to accept instructions written in BASIC. There are many computer languages, some intended for specific uses and others which are said to be general, meaning that any computing task could be expressed using them. BASIC is at the same time both specific and general. The name BASIC stands for Beginners All-purpose Symbolic Instruction Code, and the word 'beginners' is the key to its special use as a language for learning the fundamentals of computation in an easily understood form. At the same time BASIC is a very useful general purpose language with some

unique features.

All languages have rules of grammar, and in computing these rules must be precise so that no statement of the language has more than one meaning. However, BASIC has a grammar which is intentionally simplified so that only a few simple rules must be learned before real computations can be performed.

The BASIC language was developed in the late 1950's at Dartmouth College by John Kemeny and Thomas Kurtz. It is a derivative of FORTRAN and was developed to make writing and testing of programs away from a main frame computer possible. We must remember in those days that there was no such thing as a personal computer and all program writing had to be done on large expensive machines. With BASIC, a programmer sitting at a remote terminal was able to easily correct programs.

At first the BASIC language was limited to approximately 20 words. This inadequacy caused manufacturers to extend and modify BASIC to incorporate and exploit the features of their own machines. As computer science developed and the personal computer became an economic reality manufacturers added more BASIC words without, unfortunately, consulting one another. This has led to many varieties of BASIC each containing a bewildering variety of different commands.

Fortunately all manufacturers retain most of the same original commands unchanged (Sinclair Basic being the main exception to the rule). As you become familiar with basic BASIC, i.e. the general structure of the language, you will find that the simpler programs

from another type of machine can be easily converted to LOCOMOTIVE BASIC the version that the AMSTRAD CPC 464 uses.

Getting a little more technical, with cassettes all programs have on the first part of the tape an electronic signal that tells the computer to enter and run that program. This is placed there when the program is stored on tape. This apart from anything else will stop tapes from running on other

computers.

Finally, on disc, there is a standard business format known as CPM (Control Program and Monitor) written by Digital Research. It has become an industry standard and is used by over 80 manufacturers. It is portable and can be run on any machine that has sufficient memory available. The CPC 464 disc system will have CPM and will be able to run many different types of business programs. But that

is another story and will be covered in more depth in a future article.

We hope we have answered the major points of question in new users' minds, although we have had to generalise and steer clear of getting too technical. There is always a danger of over-simplification when an answer has to be confined to a few paragraphs. But there is a simple answer to most questions – join a User Group!

The Trials of Tony Blakemore

A column dedicated to the absolute beginner.

Last month I promised to take a look at Basic Bug Hunting or debugging. The term debugging was first coined by Captain Grace Hopper in 1945. She was working on an early computer called Harvard MK II. A large moth had got caught in a relay. When asked what she was doing she answered "Debugging the ----- thing". The phrase stuck. The original bug can be seen taped to a log book in a navy museum in Virginia. U.S.A.

Here is an interesting bug. In 1971 Mr and Mrs E. Kops of Los Angeles received a bank statement showing a balance of \$20,200,071.49. The bank denied the error stating that its computer could not handle figures that large. How did the Kops spend their money? They never had a chance to. A manually revised statement corrected the error that the bank denied ever happened!

To new and not so new programmers bugs seem to take on animate characteristics, hiding and defying all attempts to flush them out. Believing that 'prevention is better than cure' I will look at areas relating to the entry of programs. Some of the features of the CPC 464 that enhance program operation can create problems when encountered by the inexperienced programmer.

Before entering any program I would advise a thorough reading of the listing. At this stage a lot of the commands will not make much sense but get into the habit of reading the listing anyway. Below are a few hints to make entry easier.

1. It is normally sensible to reset the CPC 464 first, (CTRL,SHIFT and ESC). This will remove anything that you have in the memory, so be sure that you have saved to tape any listing that you wish to keep.

2. To help speed up key response a lot of programmers use the SPEED KEY facility. (Chapt.8.Pge.44). This speeds up the key repeat times. If you have entered a program, and wish to alter it, you will find it almost impossible to enter any commands. This can be very frustrating!

Find a gap between two lines in the early part of the listing, i.e. between say line 10 and 20. Enter:-

```
15 KEY 135,"SPEED KEY 10,1:CLS:LIST :"+CHR$(13)
```

This in no way intereferes with the program, but redefines the KEY function (Chapt.8.Pge. 23) of the number 7 key on the numeric keypad. Now when you run the program and wish to make an alteration, press (ESC) key twice, ENTER to clear the line, press the number 7 and the screen will clear. The program will be listed and the keyboard will return to normal.

3. In all games programs you will find that a number of keys are used for control of the characters on screen. Any key can be used but you will find the keys at the opposite end of the keyboard are the ones most used.

Study the listing and you will find examples like the one below:-

```
180 M$=INKEY$
```

```
190 IF M$="Q" THEN A=A+1
```

```
200 IF M$="Z" THEN A=A-1
```

M\$=INKEY\$(Chapt.8.pge.20) reads a key from the keyboard. Line 190 or

200 then responds to the input, depending on whether the Q or Z key has been pressed. The problem arises because the CPC464 has both upper and lower case characters. When you enter the program after you have reset, the keyboard is in lower case mode. When you run the game, INKEY\$ will not respond, because your key entry is in lower case and you have asked for an upper case letter. The solution is very simple. Re-enter line

```
180 M$=INKEY$ : M$=UPPER$(M$).
```

The UPPER\$ function (Chapt.8.Pge.49) converts the INKEY\$ input to upper case. Now you will not have to scratch your head when everything seems O.K. and the keyboard will not respond.

4. With the CPC 464 any key can be redefined by use of the SYMBOL command (Chapt.8.Pge.46). When characters other than the keyboard set are redefined it does not cause a problem. But I have noticed in the books now becoming available that more and more programs have the keyboard characters redefined. Look at the following lines:

```
100 A$=" ab ab ab ab ab ab ab"
```

```
110 B$=" cd cd cd cd cd cd cd"
```

The programmer has redefined a,b,c and d as two rows of graphic characters

➔ 31

Master Mind

Here is a very well presented version of the popular game by P. Rolph of Ararat in Victoria. It has full instructions within the program and uses an attractive colour scheme, all of which serves as a good example to new programmers.

```
10 REM Copyright 1984 P. Rolph Ararat Vic 3377
20 X=1:BORDER 14:MODE 0:INK 0,0:PAPER 0:RANDOMIZE TIME
30 INK 1,6:INK 2,15:INK 3,24:INK 4,9:INK 5,11:INK 6,7:INK 7,
16:INK 8,26:INK 9,1 :INK 10,2
40 PEN 8:WINDOW #1,1,20,1,7:WINDOW #2,1,20,8,25:PAPER #2,7:C
LS #2:SYMBOL AFTER 240
50 SYMBOL 240,&20,&44,&80,&80,&88,&44,&20,0:'G
60 SYMBOL 241,&10,&20,&44,&44,&40,&44,&44,0:'A
70 SYMBOL 242,&84,&88,&80,&80,&94,&84,&84,0:'M
80 SYMBOL 243,&80,&42,&48,&40,&48,&42,&80,0:'E
90 SYMBOL 244,&20,&48,&84,&84,&84,&48,&20,0:'O
100 SYMBOL 245,&80,&42,&48,&40,&48,&40,&80,0:'F
110 SYMBOL 246,&20,&44,&40,&20,&4,&44,&20,0:'S
120 SYMBOL 247,&40,&52,&10,&10,&10,&10,&20,0:'T
130 SYMBOL 248,&80,&44,&44,&40,&48,&44,&84,0:'R
140 SYMBOL 249,&40,&10,&10,&10,&10,&10,&40,0:'I
150 SYMBOL 250,&84,&84,&A4,&90,&88,&84,&84,0:'N
160 SYMBOL 251,&80,&48,&44,&44,&44,&48,&80,0:'D
170 PEN 10:BAN$=" GAME OF MASTERMIND":PRINT BAN$;CHR$(22);CH
R$(1);:PEN 8
180 LOCATE 2,1:SHADE$=CHR$(240)+CHR$(241)+CHR$(242)+CHR$(243
)+ " "+CHR$(244)+CHR$(245)+ " "+CHR$(242)+CHR$(241)+CHR$(246)+
CHR$(247)+CHR$(243)+CHR$(248)+CHR$(242)+CHR$(249)+CHR$(250)+
CHR$(251):PRINT SHADE$;
190 PRINT CHR$(22);CHR$(0):PRINT
200 PRINT " COLOUR CODES:-"
210 PRINT " R=";:PEN 1:GOSUB 850:PRINT " O=";:PEN 2:GOSUB
850:PRINT " Y=";:PEN 3:GOSUB 850
220 PRINT" G=";:PEN 4:GOSUB 850:PRINT" B=";:PEN 5:GOSUB 8
50:PRINT" P=";:PEN 6:GOSUB 850
230 PRINT" Q to see solution"
240 IF X=1 THEN PRINT" I for instructions"
250 PRINT:PRINT#2
260 PEN #2,9:PRINT#2,"MOVE PEGS CODE";
270 C(0)=4
280 FOR N=1 TO 4
290 C(N)=INT(6*RND(1)+1)
300 NEXT N
310 FOR P=1 TO 10
320 LOCATE #2,1,2+P: PRINT #2,P;CHR$(7);
330 FOR A=1 TO 4
340 A$=INKEY$:IF A$="" THEN 340
350 k=ASC(a$):IF K>96 THEN K=K-32
360 IF K=82 THEN C=1:GOTO 460
370 IF K=79 THEN C=2:GOTO 460
380 IF K=89 THEN C=3:GOTO 460
390 IF K=71 THEN C=4:GOTO 460
```

```

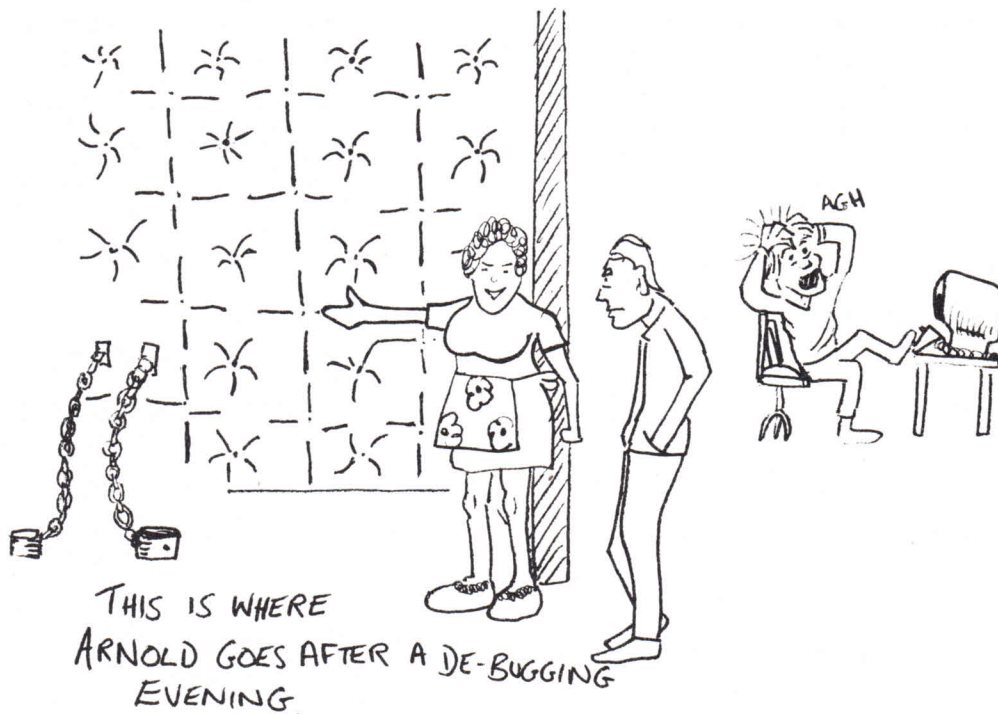
400 IF K=66 THEN C=5:GOTO 460
410 IF K=80 THEN C=6:GOTO 460
420 IF X=1 AND K=73 THEN 890
430 IF K=95 THEN GOSUB 860
440 IF K=81 THEN 540
450 GOTO 340
460 X=0:LOCATE 1,7:PRINT" DEL correct errors";:LOCATE 14+A,9
+P:PEN C:GOSUB 850:G(A)=C
470 NEXT A
480 GOSUB 630
490 IF B=4 THEN 830
500 GOSUB 710
510 LOCATE #2,8,2+P:PEN #2,0:PRINT #2,STRING$(B,CHR$(124));:
PEN #2,8:PRINT #2,STRING$(W,CHR$(124));:PEN #2,9
520 NEXT P
530 LOCATE #2,3,15:PEN #2,0:PRINT #2,"Sorry, you lose!":PEN
#2,9
540 LOCATE #2,1,13:PRINT #2,"Correct code : ";:LOCATE 15,20
550 FOR A=1 TO 4
560 PEN C(A):GOSUB 850
570 NEXT A
580 LOCATE #2,1,16:PRINT #2,"Want to play again?";
590 A$=INKEY$:IF A$="" THEN 590
600 IF A$="Y" OR A$="y" THEN CLS:RUN
610 MODE 2:INK 1,0:INK 0,13:PEN 1:BORDER 13
620 END
630 'COMPUTE BLACK PEGS
640 B=0
650 FOR K=1 TO 4
660 IF G(K)<>C(K) THEN 680
670 B=B+1
680 NEXT K
690 RETURN
700 'COMPUTE WHITE PEGS
710 FOR X1=1 TO 4:R(X1)=C(X1):NEXT X1
720 W=0
730 FOR I=1 TO 4
740 FOR J=1 TO 4
750 IF G(I)<>R(J) THEN 790
760 W=W+1
770 R(J)=0
780 GOTO 800
790 NEXT J
800 NEXT I
810 W=W-B
820 RETURN
830 LOCATE #2,6,15:PEN #2,14:PRINT #2,"YOU WIN!!":PEN #2,9
840 GOTO 580
850 PRINT CHR$(233);:PEN 8:RETURN
860 A=A-1:IF A<1 THEN A=1
870 LOCATE #2,14+A,2+P:PEN #2,7:PRINT #2,CHR$(143);:PEN #2,9
880 RETURN
890 INK 0,0:INK 1,4:INK 2,26:INK 3,2:PAPER 1:BORDER 4
900 MODE 1:CLS:PEN 3:LOCATE 10,1:PRINT BAN$;:PRINT CHR$(22);
CHR$(1);
910 LOCATE 11,1:PEN 2:PRINT SHADE$:PRINT CHR$(22);CHR$(0)
920 PRINT:PRINT"The computer selects, at random, a four";
930 PRINT"unit code from the colours red, orange,";

```

```

940 PRINT"yellow, green, blue and pink."
950 PRINT"The object of the game is to find the";
960 PRINT"code within ten guesses.After each guess";
970 PRINT"the computer will tell you if any";
980 PRINT"colours are right, with pegs.
990 PRINT:PRINT"A white peg (";CHR$(124);") means that one
of the";
1000 PRINT"colours is right, but it's position is";
1010 PRINT"wrong."
1020 PRINT"A black peg (";:PEN 0:PRINT CHR$(124);:PEN 2:PRIN
T") tells that one of the";
1030 PRINT"colours and it's position is right."
1040 PRINT:PRINT"eg. Four white pegs would tell you that";
1050 PRINT"you have all the right colours, but in";
1040 PRINT:PRINT"eg. Four white pegs would tell you that";
1050 PRINT"you have all the right colours, but in";
1060 PRINT"the wrong order. Two black and two white";
1070 PRINT"pegs tells that you have the right";
1080 PRINT"colours, two are in the correct position";
1090 PRINT"and two are in the wrong position."
1100 PRINT:PRINT" Press any key to return to the game"
1110 A$=INKEY$:IF A$="" THEN 1110 ELSE 20

```



APOLOGY TO TAPE SUBSCRIBERS

An incorrect version of Amthello was contained on the March (Issue 2) tape. We apologise to all tape subscribers who experienced difficulties in tracing and correcting the problems. The correct version is contained on this month's tape.

Bytes & Pieces

Here are some more hints, one is obvious but often forgotten, the other two may help you out of a problem. If you have any snippets to share with others – send them in.

- Some CPC464 owners may have noticed a problem with some tapes apparently loading at excessive speed, causing bad loads or a Read Error b. This can be caused by the tape going on the wrong side of the spindle in the cassette recorder mechanism instead of between the spindle and the rubber pinch roller.

As the speed of the tape is regulated by the pinch roller, this leads to the tape running through as fast as the mechanism will allow.

Whilst this problem may only be a nuisance when trying to load a previously recorded program, it can be extremely annoying when you have saved the only copy of your program in this fashion, as you may have lost it completely.

However, in the event of this happening, you may be lucky as there is a trick which may save you a lot of time and trouble recreating the program. Try forcing the tape to go on the wrong side of the spindle and attempt to load it. It usually sounds very sick and unstable, but with the incredible load routines in the Amstrad CPC464, it often seems to work and loads the program successfully. If you can get the program to load, insert a new tape immediately and resave.

- Even if you use a good quality tape or disk to save your programs, and check with the CAT function that all is in order, you may still lose the information. But how, you may ask. Well, the data you save is retained on the tape or disk as a very small and weak magnetised area and when placed near a strong magnetic field, the data can be changed or lost, thus leading to faulty loads. For example it is possible to cause damage by merely leaving your saved data on the top, or in front of, a television (usually colour). Other suspect objects are permanent magnets, AC or DC power leads, speakers, power supplies or packs, Transformers, motors or meters. Although dependent upon the strength of the magnetic field, in most cases it should be safe enough to keep your tapes or disks within 6 to 12 inches of doubtful objects.

- The Amstrad manual is rather unhelpful regarding function keys. The codes for the numeric keypad are given but where are the expansion codes 141 to 159? Apparently they are not actually anywhere but must be assigned to the desired keys. For example:

```
KEY DEF 71,1,122,90,150  
KEY 150 "TEST MESSAGE"
```

Entering the above will result in the 'Z' key having its normal functions when unshifted and with Shift or Caps Lock, but when used with CTRL it will give TEST MESSAGE, or whatever else you assign to the key code.

Do your programs make cents?

They could make dollars if published in The Amstrad User

Send us your completed programs on cassette (or disk), if possible with a listing, and, of course, an explanation and instructions on how to run the software. If it is considered suitable for publication we will pay you \$10 for each printed page. If you would like it returned, please include a suitable stamped and addressed envelope or padded bag. Please mail your software to:

Contributions Department, The Amstrad User, Suite 4a, 33-45 The Centreway, Blackburn Road, Mt. Waverley, Victoria 3149.

User Group Information

If you have ever wondered where this magazine is mailed each month, and if there is another CPC464 user 'just around the corner', you may find our analysis by post code of subscriptions so far received quite interesting. First, we take a look at User Group activity.

March has seen another increase in contact points as you will see from the list below. We have also received our first report (one of many we hope) from The Amstrad Computer Club in Adelaide.

Don Buchanan writes:

"The Amstrad Computer Club has formed in Adelaide. We meet at the Grange Primary School every Tuesday evening from 6.30 p.m. until 9.00 p.m. and would like to branch out to other schools as the demand requires. Everybody will be made welcome. Initial enquiries should be made with Don Buchanan on 356 2664 at anytime before 10.00 p.m. (with luck I may be home!). The Club eventually intends to provide a complete range of hardware for members to use on Club

nights and for School use during school hours. Beg, borrow or steal, we have been able to provide two Amstrad computers, one green screen and one colour monitor, a 12 inch Colour TV plus lots of literature for members use. Thanks a lot AWA-Thorn - Adelaide." And thanks a lot Don, we wish the Group every success.

The pages of The Amstrad User are open for any and all reports from User Groups. You may wish to describe your aims or report activities for the month, provide other groups with hints or tips, even program modules to build upon. Whatever you submit, no matter how small, will go to assist building the national information network.

User Group Contact List

<p>QLD</p> <p>Paul Witsen Bulimba (07) 371 9259 Mick O'Regan Gladstone (079) 79 2545</p>	<p>NSW</p> <p>John Patterson Lismore (066) 21 3345 Chris Craven Canowindra (063) 44 1150 Paul Wilson Moruya (044) 74 3160 Frank Humphreys Mummulgum (066) 64 7920</p>
<p>ACT</p> <p>John Payne Phillip (062) 82 2277 Arthur McGuffin Kambah (062) 31 9437</p>	<p>SA</p> <p>Don Buchanan Grange (08) 356 2664 Lindsay Allen Murray Bridge (085) 32 2340</p>
<p>Vic</p> <p>R.A. Russo Richmond (03) 428 4281 Tony Blakemore Nunawading (03) 878 6212 Martin Scragg Pearcedale (059) 78 6949 Don Leith Brunswick (03) 383 1498 Michael Prezans Frankston (03) 781 2158 Mrs. G. Chapman South Clayton (03) 551 4897 Mike McQueen Braybrook (03) 312 5597 Paul Walker Hethmont (03) 729 8657 David Carbone Burwood (03) 29 4135 Sue Kelly Manangatang (050) 35 1402</p>	<p>WA</p> <p>Bob Harwood Cooloongup (095) 27 1777 Dave Andersen 6 Kitchener Rd Merredin, 6415 Graeme Worth Scarborough (09) 341 5211</p>

6001 6019 6025
6110 6111 6156
6164 6167 6168
6169 6225 6353
6415 6430 6722
6743

4020 4034 4053
4055 4059 4061
4109 4102 4121
4122 4210 4281
4305 4314 4455
4503 4650 4680
4700 4701 4720
4744 4805 4807
4814 4850 4874

2094 2099 2141
2145 2147 2153
2211 2221 2290
2291 2305 2306
2357 2390 2400
2428 2430 2444
2448 2450 2470
2478 2480 2518
2528 2537 2560
2594 2640 2720
2795 2804 2806
2820 2849

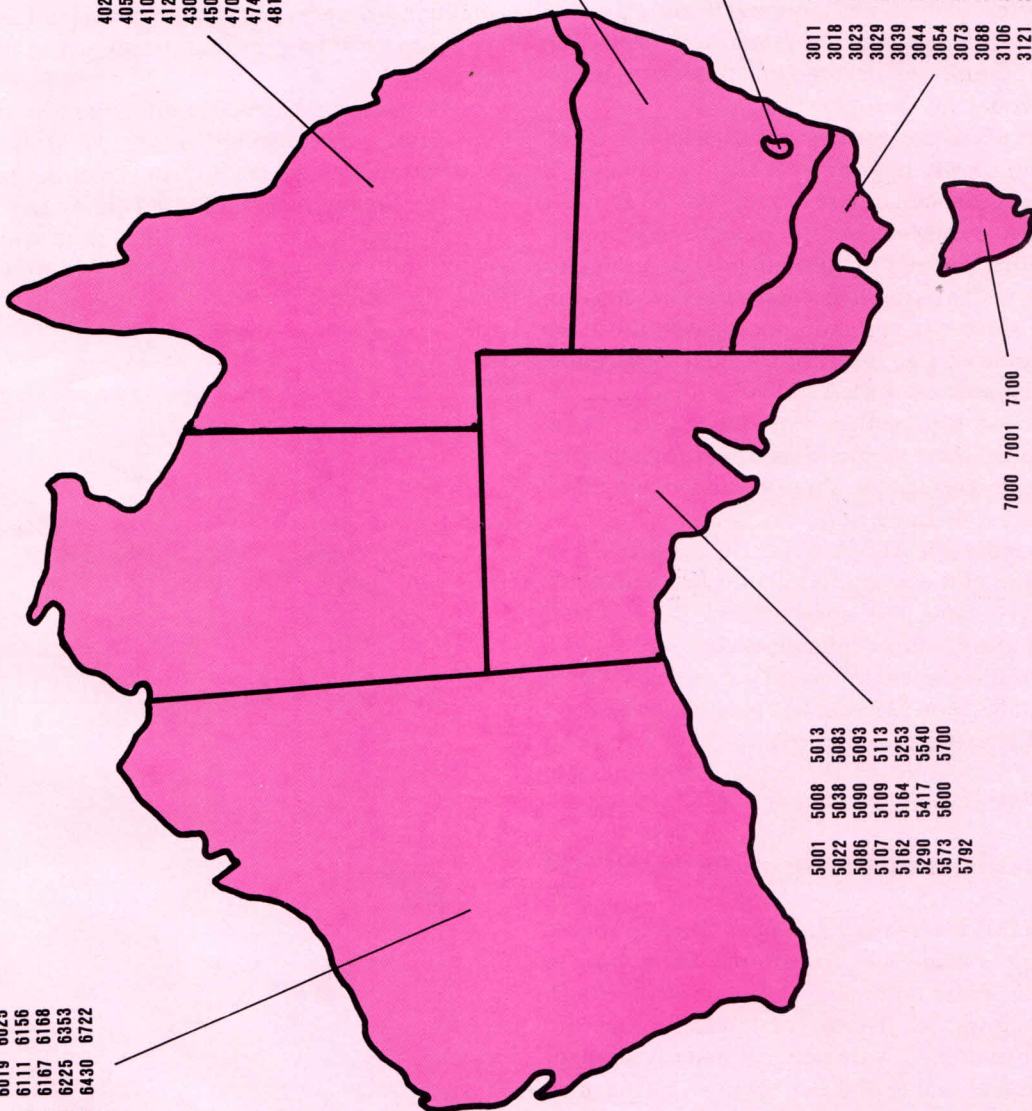
2601 2602 2603
2609 2611 2616
2617 2902 2903

5001 5008 5013
5022 5038 5083
5086 5090 5093
5107 5109 5113
5162 5164 5253
5290 5417 5540
5573 5600 5700
5792

3011 3012 3015
3018 3019 3021
3023 3025 3028
3029 3030 3033
3039 3040 3043
3044 3046 3047
3054 3055 3056
3073 3078 3079
3088 3089 3095
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3121 3128 3131
3132 3133 3146
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3163 3168 3169
3170 3174 3175
3178 3182 3192
3196 3199 3204
3205 3216 3225
3264 3282 3240
3249 3277 3280
3400 3418 3442
3444 3546 3660
3690 3765 3781
3799 3806 3844
3850 3860 3875
3885 3888 3930
3977

7000 7001 7100



Book Reviews

Shane Kelly takes a look at two more paperbacks available for the CPC464.

The Amstrad CPC-464 Advanced User Guide

This book bears a little red stamp on its front cover. The red stamp says "APPROVED FOR CPC-464 OWNERS BY AMSOFT". There are two conclusions to be drawn – one, that AMSOFT genuinely believes this publication to be at least as comprehensive as anything it could put out, or two, that AMSOFT wasn't going to release an Advanced User Guide and decided that this was to be the product that would fill the void.

As far as I can see, it is the first case. This book is the one that takes over where your User Manual finishes. It has clear, concise explanations of areas that most users find confusing, and they are: sound, screen and graphics. There are 40 (forty) listings in this book that are examples of the point the text is trying to get across. For instance, in the section on sorting (a common micro task), there are listings of a bubble sort, an insert sort, a shell sort, a quick sort and an alphabetical sort. You will probably never need any other sort routine than those mentioned above. There are explanations of various data structures including stacks and queues and arrays. There are in fact too many good points to list them all here.

This book has the title ADVANCED USER GUIDE. For the Basic Programmer who wants to know more than just how to write programs, this book is ideal. It deals with some complex ideas (sound, interrupts etc. . .) providing clear and workable explanations and examples.

To the AMSTRAD owner who has progressed beyond the basics and is casting his/her eye to more advanced use, look here for some of the tools to do the job.

RECOMMENDED

40 Educational Games for the Amstrad with the CPC-464

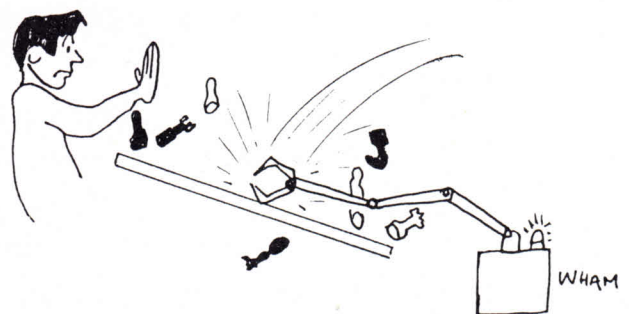
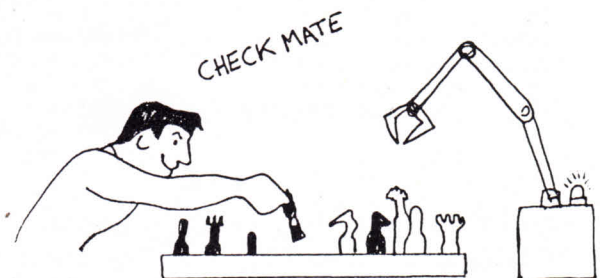
The forward of this book says that is not a "how to" book. The assumption is made that you already know how to use most of the main commands of your AMSTRAD. There then follows 40 listings of "games" that are supposedly "educational". I am not qualified to comment on the "educational" value of these "games", but as most of the geographical ones are British in emphasis and a lot of the others use the "drill and answer" technique that seems to have fallen out of favour with today's educators, I will leave you to draw your own conclusions.

The listings that I type in seemed to work well enough, but the content was not (in my opinion) worth the effort of the typing.

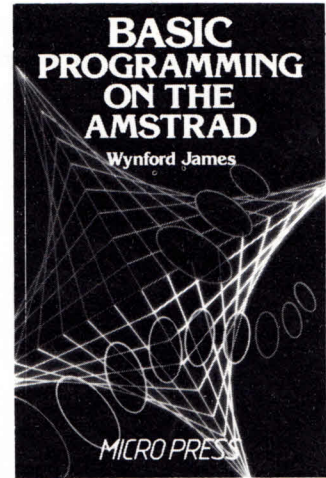
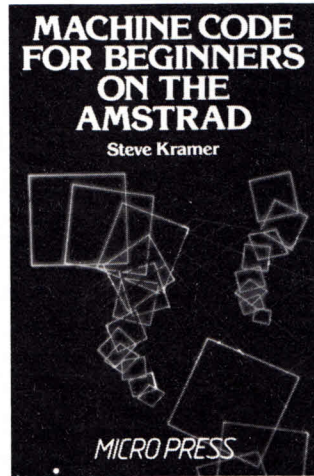
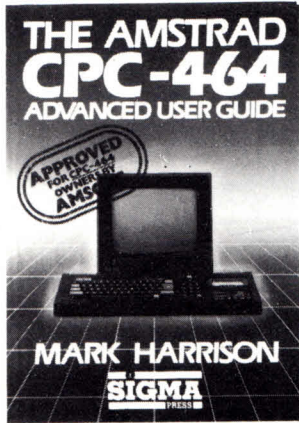
I find it hard to say anything about this book that is positive. The listings use very little of the graphics ability of the machine, they do not inspire favourable comment on their programming style, and it would seem to me that you don't need a computer to play most of these games anyway.

The book has a nice cover and there are screen shots of the games. The listings are readable and meaningful variable names are used throughout the programs.

I can't really recommend this book to you, but if you are in need of some justification as to why you bought your computer (and you have children), buy a copy of this for leaving beside your computer when guests call.



SPECIAL OFFER TO SUBSCRIBERS



The book assumes that you have got your 464 working and have already done some simple programming. But, even at a simple level, the organisation of the book is attractive as it opens with a description of how the 464 works, how it communicates with external devices, and a quick summary of BASIC. There is a comprehensive reference section for you to find an explanation of any BASIC command or keyword in the Amstrad's repertoire.

Other important sections of the book cover: *Strings and characters; Input/Output; Arithmetic; Memory Map; Time, Clocks and Interrupts; Data Structures; Data Processings; Graphics; Sound.*

This book is intended for the beginner wishing to learn how to use Machine Code on the Amstrad CPC 464. It progresses from the concepts of programming in Machine Code, explains the instructions that the Z80 CPU understands and how to use them, and introduces some of the routines in the operating system. Short programs are given to help in entering Machine Code programs, and to inspect and alter or move the contents of part of the memory. Extensive use is also made of the machine operating system allowing results from programs to be seen immediately.

The Amstrad CPC 464 is a powerful new machine with excellent sound and colour graphics facilities. The official Amstrad manual offers a sprint through the facilities of the machine. This book is for the joggers, the walkers and those who are not sure they can even manage to reach the starting line.

The first two chapters are for the complete beginner. The remainder of the book introduces the majority of the BASIC commands available on the Amstrad. The last few chapters deal with topics of more specialised interest such as the use of sound, and how to create files and read data from them. Each chapter contains example programs and exercises.

Normal Price	:	\$17.40	Normal Price	:	\$17.95	Normal Price	:	\$19.95
Subscribers Price:		\$15.65	Subscribers Price:		\$16.15	Subscribers Price:		\$17.95

ORDER FORM

Please supply the following:

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.... copy(ies) Machine Code for Beg. at \$16.15 per copy	\$
.... copy(ies) Basic Programming at \$17.95 per copy	\$
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Mail your order to: The Amstrad User, Suite 4a, 33-45 The Centreway, Blackburn Road, Mt. Waverley, Victoria 3149. Telephone orders accepted for above Credit cards: (03) 233 9227. Please allow 14 days for delivery.


```

2999 '
3000 LOCATE 3,14:PRINT SPACE$(36):RETURN
3997 '
3998 '*MIX WORD.CHECK THAT IT IS MIXED*
3999 '
4000 JUMWRD$ = ""
4001 LENTH=LEN(WORD$)
4010 FOR A=1 TO LENTH
4020 RANDOM= INT( RND*LENTH+1)
4030 RANDOMNO(A)=RANDOM
4040 FOR X=1 TO A
4050 IF RANDOM=RANDOMNO(X-1) THEN 4020
4060 NEXT
4070 JUMWRD$ = JUMWRD$ + MID$(WORD$, (RANDOMNO(A)),1)
4080 NEXT
4090 IF JUMWRD$=WORD$ THEN 4000
4100 RETURN
4997 '
4998 '*** ENTER GUESS. CHECK ANSWER ***
4999 '
5000 Z=INT(40-LEN(JUMWRD$))/2
5010 LOCATE Z,15:PRINT JUMWRD$:PRINT CHR$(7)
5032 LOCATE Z,17:PRINT " "
5040 LOCATE Z-7,17:LINE INPUT"GUESS? ";GUESS$
5045 GUESS$=UPPER$(GUESS$)
5060 IF GUESS$="" THEN 5000
5070 IF GUESS$=WORD$ THEN 6000
5080 COUNTER = COUNTER+1:LOCATE 14,19
5100 PRINT " WRONG! ":PRINT CHR$(7)
5120 IF COUNTER = 7 THEN 9000 (LOSE)
5125 IF COUNTER = 6 THEN 5160
5130 FOR A=1 TO 500:NEXT
5140 LOCATE 14,19:PRINT " TRY AGAIN! ":GOTO 400
5160 FOR A=1 TO 500:NEXT
5161 LOCATE 14,19:PRINT "LAST CHANCE!":GOTO 400
5170 PRINT "LAST CHANCE!":GOTO 400
5997 '
5998 '***** CORRECT ROUTINE *****
5999 '
6000 LOCATE 14,19:PRINT" CORRECT!!! "
6009 FOR I=1 TO 150 STEP 5
6010 SOUND 1,I,5,4
6020 SOUND 1,500+I,4,1
6030 NEXT:GOTO 8000
7997 '
7998 '***** FINISH ROUTINE *****
7999 '
8000 LOCATE Z,15
8010 PRINT WORD$:Z=0
8030 LOCATE 11,21:PRINT"ANOTHER GAME (Y/N)"
8050 SOUND 1,50+INT(RND*50),2,4
8060 FOR A=1 TO 125:NEXT
8070 LOCATE 11,21:PRINT " "
8090 I$=INKEY$:I$=UPPER$(I$)
8100 IF I$="" THEN 8030
8110 IF I$="Y" THEN RUN
8120 IF I$="N" THEN END ELSE 8090
8997 '
8998 '***** LOSE ROUTINE *****
8999 '
9000 LOCATE 14,19
9010 PRINT"YOU LOSE!!!!"
9020 FOR I=1000 TO 3000 STEP 15
9030 SOUND 1,1,2,5:NEXT
9040 GOTO 8000
10020 DATA PONY,PUMA,BEAR,DEER,LION
10030 DATA GOAT,LYNX,FOAL,MOLE,MULE
10040 DATA ORYX,MINK,WOLF,PUMA,IBEX
10050 DATA OXEN,TAHR,HARE,BOAR,FOAL

```



```

10060 DATA SEAL,ZEBU,PUDA,VOLE,PIKA
10070 DATA CHIMP,TIGER,SHEEP,HORSE
10080 DATA MOUSE,DINGO,HYENA,LLAMA
10090 DATA KOALA,MOUSE,ZEBRA,CAMEL
10100 DATA CIVET,DHOLE,ELAND,HOUND
10110 DATA HYRAX,LEMUR,BISON,SHREW
10120 DATA MOOSE,OTTER,RHINO,SAIGA
10130 DATA SKUNK
10150 DATA DONKEY,BADGER,BABOON,MONKEY
10160 DATA BOBCAT,BEAVER,ALPACA,TURTLE
10170 DATA OCELOT,JAGUAR,DESMAN,FENNEL
10180 DATA JACKEL,GIBBON,GOPHER,RABBIT
10190 DATA MARMOT,MARTEN,POSSUM,RACCOON
10200 DATA WALRUS,WEASUL,GEMBOK,AYEAYE
10205 DATA IMPALA
10210 DATA TARSIER,CHEETAH,BUFFALO
10220 DATA CARIBOU,GAZELLE,AGOUTIS
10230 DATA GORILLA,BROCKET,LEAPORD
10240 DATA CHAMOIS,MUNTJAC,DOLPHIN
10250 DATA GIRAFFE,LEMMING,PECCARY
10260 DATA OPOSSUM,WALLABY,TERRIER
10270 DATA RACCOON,GEMSBOK,HAMSTER
10275 DATA GERENUK,MARKHOR,GUEREZA
10277 DATA MANATEE
10280 DATA AARDVARK,MONGOOSE,AARDWOLF
10290 DATA DORMOUSE,ANTEATER,ANTELOPE
10300 DATA BACTRIAN,CAPYBARA,CHIPMUNK
10310 DATA ELEPHANT,SQUIRREL,HEDGEHOG
10320 DATA KANGAROO,PLATYPUS,REINDEER
10330 DATA TORTOISE,BABIRUSA,PANGOLIN
10340 DATA CAPYBARA,MARMOSET,CAPUCHIN
10350 DATA PORPOISE,HAMADRYA,BROCKETS
10360 DATA MULEDEER
20000 '
20010 SYMBOL 241,62,127,255,191,191,187,184,40
20020 SYMBOL 242,120,252,246,254,251,114,114,81
20030 SYMBOL 243,124,254,255,253,253,29,29,20
20040 SYMBOL 244,30,63,111,127,223,78,78,138
20050 A$=CHR$(241)+CHR$(242)
20060 B$=CHR$(244)+CHR$(243)
20070 RETURN

```



Announcing the HELP-DESK

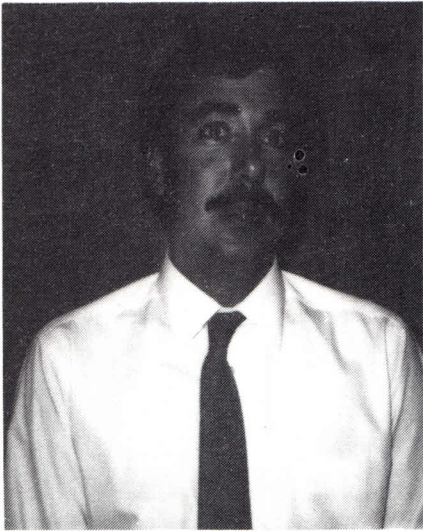
A special service for the novice programmer

Each weekend, between 4 p.m. and 9 p.m. on Saturday and 10 a.m. and 4 p.m. on Sunday (EST), Tony Blakemore has kindly offered to make himself available to answer problems that you may have concerning your CPC464 and related software. For Tony's sake, please keep the calls short and within the prescribed hours as the phone is otherwise used for business purposes.

THE HELP-DESK LINE IS (03) 878 6212

The relieve the pressure, we would welcome volunteers from other States to operate a similar service as soon as possible. Please advise us on (03) 233 9227.

The Man behind the CPC464 launch



John Chandler is the Product Manager of AWA-Thorn and has had the responsibility of ensuring a smooth launch to the CPC464. We managed to drag him away from his busy schedule to answer a few questions.

Q John, since the launch of the CPC464, how well are the sales going, in particular within Australia?

A The sales have been quite amazing and surpassed even our most optimistic predictions. In the first six months of the CPC464's release in the UK the sales reached 200,000 making it the country's No. 1 seller, and the trend here already looks very promising.

Q How widespread is the current dealer network?

A We have dealers covering all of Australia, country and metropolitan areas. Some States achieved good dealer coverage quicker than others. However, all major population areas are now well catered for.

Q For those users who have a green screen unit, is it possible to purchase a colour screen separately?

A At this point we are not selling colour monitors separately but will review the situation if required. The green screen users may purchase the MP-1 power supply modulator to connect the computer to their colour television.

Q Why did Amstrad choose an unconventional joystick which requires a second joystick to "piggy-back" the first?

A The joystick is a standard 9-pin type commonly used. Amstrad decided to provide access for a second joystick on the first, largely to conserve space on the rear of the keyboard.

Q What's so special about Locomotive Basic?

A Locomotive Basic is the most recent and advanced version of Basic yet developed. It is a very versatile, fast and powerful version which contains some exciting new commands and additional facilities. Particularly in its' graphics and sound and use of real time clocks. A complete list of commands may be found in the manual SOFT 157 Basic Specification.

Q The CPC464 has a warranty for 12 months. In the event of a breakdown after that period, where do we get it fixed?

A In the event of a breakdown, the customer may return the computer to the point of purchase and a quick repair and return of the product will be applied.

A Apart from the DMP-1, what other printers are compatible with the CPC464?

A Most printers with a standard Centronics interface are compatible with the CPC464.

Q If anyone has a really technical problem they can't solve, do you offer any kind of support service?

A Yes, we do offer technical support. The customer need only phone his/her nearest branch of AWA-Thorn. If the local office can't give an immediate answer, the question will be relayed to our central office in Rydalmere, where our technical staff will relay a prompt answer back. Alternatively the customer may write direct to Rydalmere at 348 Victoria Road, Rydalmere, N.S.W., 2116. (Phone: (02) 638 8444).

Q Looking ahead, are there any new peripherals in the pipe-line or upgrades to the CPC464, including modems and interfaces?

A Several new peripherals are planned with MODEMS, RS232 interface and network facilities high on the priority.

Q What about software?

A We now have over 200 titles (games, educational and business) available from AMSTRAD. The product is also supported by most other large software houses in Australia with approximately a further 150 titles already available. In addition, let's not forget the 5000 plus titles available on CP/M through the DDI-1 Disk Drive.

Q Finally, how do you see the future of the home computer?

A The Home Computer is the key to the future. By having access to a computer at home, the younger generation are being given a head start in tomorrow's technology where computers will be common place in all aspects of everyday life.

The CPC464 on show in Sydney

Have you ever noticed that if you present a young child with two different coloured lollies and ask him to make a choice, the decision generally comes quite quickly? But present him with 40 or 50 and the decision time increases dramatically. Any prospective purchaser must have been faced with a similar problem at the APC show in Sydney when confronted with offerings from nearly 70 stands.

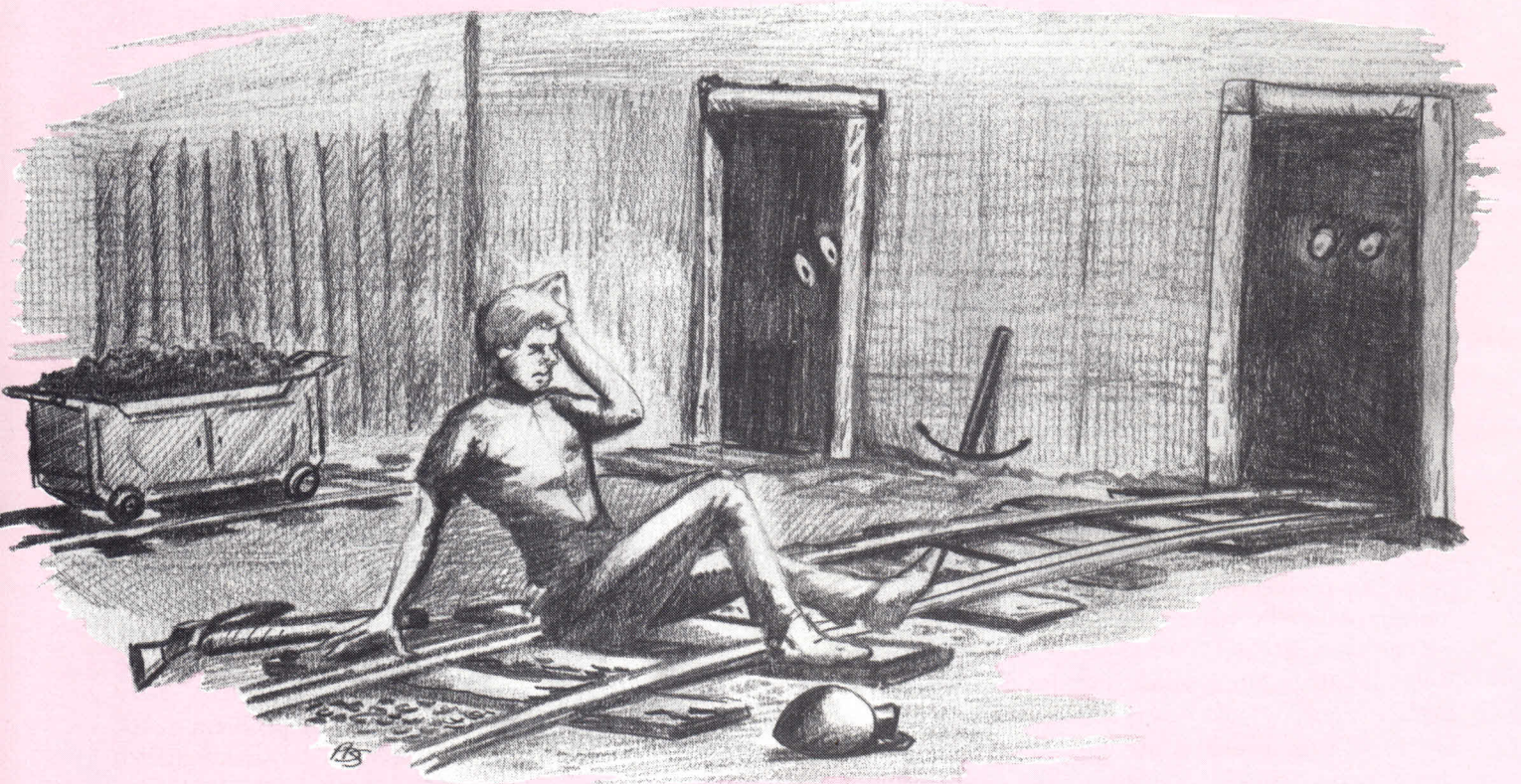
Logically, the process of choosing can be reduced to a minimum by applying the following questions: a) How much do I want to spend and b) what do I want to do with the equipment. This is possibly an oversimplification but it does save a lot of shoe-leather. On the other hand there are a lot of people who enjoy "just looking" for a variety of their own reasons.

Overall, some 35,000 people had visited the show at Centrepont by the time it closed on the 16th March at 5.00. The Amstrad User had a spot on

➔ 31

Down the Mine

Part Two



Now that your fingers have recovered from entering the first part of Down the Mine, we present the second and final part of Philip Riley's adventure game. Tape subscribers will find the complete version on this month's tape.


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2320 GOSUB 4020:GOTO 550
2330 w1=0:w2=0:w3=1:w4=0:yp=33
2340 GOSUB 3950
2350 PRINT"The tunnel ends at a rock wall. The only exit is t
o the west through the narrow tunnel."
2360 GOSUB 4020:GOTO 550
2370 w1=1:w2=1:w3=0:w4=0:yp=34
2380 GOSUB 3950
2390 PRINT"You are in a long straight tunnel that disappear
s into darkness. Rusty railway tracks are bolted to the floo
r, you have to be careful not to trip over them in the gloom
of the tunnel."
2400 GOSUB 4020:GOTO 550
2410 w1=1:w2=1:w3=0:w4=1:yp=35
2420 GOSUB 3950
2430 PRINT"You have come to the junction of several tunnels l
eading North, South and East. On the floor are a set of rai
lway tracks that lead to the south."
2440 GOSUB 4020:GOTO 550
2450 w2=0:w3=1:yp=36:IF b14=1 THEN w1=1:w4=1 ELSE w1=0:w4=0
2460 GOSUB 3950
2470 IF b14=0 THEN PRINT"You walk into a small room. A large
brick wall blocks your way.":GOTO 2490
2480 PRINT"You are in the main part of the mine. to the No
rth is a small tunnel that looks dark and dangerous."
2490 GOSUB 4020:GOTO 550
2500 w1=0:w2=0:w3=1:w4=1:yp=37
2510 GOSUB 3950
2520 PRINT"The tunnel is very wide and high at this point and
as you walk along you imagine that you can almost hear the
men that worked down this mine as they dig."
2530 GOSUB 4020:GOTO 550
2540 w1=0:w2=0:w3=1:w4=0:yp=38
2550 GOSUB 3950
2560 PRINT"The tunnel opens out into a large cavern This was
the last part of the mine to be worked before it was closed d
own. As you look around you can see many small holes in the wa
lls wear the men were starting to tunnel."
2570 GOSUB 4020:GOTO 550
2580 w1=0:w2=1:w3=0:w4=1:yp=39
2590 GOSUB 3950
2600 PRINT"You are in a very dark passage. The roof looks uns
afe and the air smells foul. It may be dangerous to continue
along this passage."
2610 GOSUB 4020:GOTO 550
2620 w1=0:w2=0:w3=1:w4=1:yp=40
2630 GOSUB 3950
2640 PRINT"The tunnel looks to be getting worse. As you walk
you see evidence of many cave in's, and although you are st
ill able to get past them I would recommend that you go back n
ow before it is too late."
2650 GOSUB 4020:GOTO 550
2660 yp=41
2670 PRINT"You walk into a small cavern. As you enter the
roof caves in and crushes you to death. Don't say that I di
dn't warn you about this."
2680 GOTO 4770
2690 w2=1:w3=0:w4=0:yp=42:IF b11=1 THEN w1=1 ELSE w1=0
2700 GOSUB 3950
2710 PRINT"You walk into a small room and you are amazed to
see a toilet sat up against one wall."
2720 GOSUB 4020:GOTO 550
2730 w1=0:w2=1:w3=1:w4=1:yp=43
2740 GOSUB 3950

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2750 PRINT"You are in a huge cavern that has exits to the So
uth, East and West."
2760 GOSUB 4020:GOTO 550
2770 w1=1:w2=0:w3=1:w4=0:yp=44
2780 GOSUB 3950
2790 PRINT"you are in a dark passage, the floor of which is
rather damp. At places the soilon the floor has turned into
thick mud."
2800 GOSUB 4020:GOTO 550
2810 w1=0:w2=1:w3=0:w4=0:yp=45
2820 GOSUB 3950
2830 PRINT"The tunnel ends at a large water tank. As you lo
ok you notice water dripping from a small hole at the bott
om of it. Over the years it has formed a groove inthe floor
and the water trickles down this groove into the passage
to the Sout
2840 GOSUB 4020:GOTO 550
2850 w1=0:w2=1:w3=0:w4=1:yp=46
2860 GOSUB 3950
2870 PRINT"You are in a large cavern the roof of which is
covered with stalatites. This indicates that it is a natura
l cavern that the miners came across when they were digg
ing the mine."
2880 GOSUB 4020:GOTO 550
2890 w1=1:w2=1:w3=0:w4=0:yp=47
2900 GOSUB 3950
2910 IF b10=1 THEN PRINT"You walk into a small slime covered
passage. The remains of a giant dead slug are lying
on the floor.":GOTO 2930
2920 PRINT"You walk into a narrow evil smelling tunnel. Y
our hand brushes against the wall and you notice that the
wall is covered in a thick layer of green slime.It is the
n that you notice the repulsivegiant slug that is blocking y
our path."
2930 GOSUB 4020:GOTO 550
2940 w1=1:w2=0:w3=1:w4=0:yp=48
2950 IF b10=0 THEN PRINT"You try to walk South but the slug
attacks and kills you.":GOTO 4770
2960 GOSUB 3950
2970 PRINT"You are in a small cavern that has been cut out o
f the solid rock. To the North is an evil smelling passage."
2980 GOSUB 4020:GOTO 550
2990 w1=1:w2=0:w3=0:w4=1:yp=49
3000 GOSUB 3950
3010 PRINT"You walk along a tunnel that twists and turns. Th
e walls are solid rock and perfectly smooth as you run y
our hand along them."
3020 GOSUB 4020:GOTO 550
3030 w1=1:w2=1:w3=0:w4=0:yp=50
3040 GOSUB 3950
3050 PRINT"You are now in what the miners called the Rainb
ow Cavern. Called this because the walls are all the colours
of the rainbow. As you walk around the light from your
helmet reflects the colours all over the cavern."
3060 GOSUB 4020:GOTO 550
3070 w1=1:w2=1:w3=1:w4=0:yp=51
3080 GOSUB 3950
3090 PRINT"You walk along a narrow passage until you come
to a junction. Here passages lead off to the North, South
and West."
3100 GOSUB 4020:GOTO 550
3110 w1=0:w2=1:w3=0:w4=1:yp=52
3120 GOSUB 3950
3130 PRINT"You follow a twisting tunnel brushing aside cob
webs and doing your best to avoid the muddy patches on th
e floor."
3140 GOSUB 4020:GOTO 550
3150 w1=0:w2=0:w3=1:w4=0:yp=53
3160 GOSUB 3950

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3170 PRINT"The tunnel suddenly ends at a rock wall.It seems
that this part of the mine was unsafe at one time because th
e miners have used massive pieces of timber to shaw up t
he roof."
3180 GOSUB 4020:GOTO 550
3190 w1=0:w2=1:w3=0:w4=1:yp=54
3200 GOSUB 3950
3210 IF b9=1 THEN PRINT:PRINT"you walk into a small cavern.
To the south you here a loud bang. looking around you
see that the monster has opened the unlocked door. It p
ounces on you and rips you to pieces.":GOTO 4770
3220 PRINT"You are now in a part of the mine that the miner
s would never enter. They claimed that an evil monster
lived in the tunnels to the South of your presentposition.
But you don't believe in monsters do you."
3230 GOSUB 4020:GOTO 550
3240 w1=1:w2=0:w3=0:w4=0:yp=55
3250 IF b9<>2 THEN b9=1
3260 GOSUB 3950
3270 IF b9=2 THEN PRINT"You walk into a small cavern. To the
South is a locked door.":GOTO 3290
3280 PRINT"You walk into a small cavern. Looking South you
see a small dimly lit passage through an open door. Suddenl
y down the passage you see a large monster with blood dri
pping from its fangs rushing towards you."
3290 GOSUB 4020:GOTO 550
3300 w1=0:w2=0:w3=1:w4=1:yp=56
3310 GOSUB 3950
3320 PRINT"You are in a large passage that leads East and
West. The walls are rough and full of jagged edges so as yo
u walk you try to avoid them as much as possible."
3330 w1=0:w2=0:w3=1:w4=1:yp=57
3340 GOSUB 3950
3350 PRINT"You enter a large cavern the walls of which are
black and grimy."
3360 GOSUB 4020:GOTO 550
3370 w1=1:w2=1:w3=0:w4=1:yp=58
3380 GOSUB 3950
3390 PRINT"You walk along a short passage until you come to a
junction. Passages lead North, South and East from this poi
nt."
3400 GOSUB 4020:GOTO 550
3410 w1=0:w2=1:w3=1:w4=0:yp=59
3420 GOSUB 3950
3430 PRINT"You walk along a passage that twists and turns and
even doubles back on itself at one stage."
3440 GOSUB 4020:GOTO 550
3450 w1=1:w2=0:w3=0:w4=1:yp=60
3460 GOSUB 3950
3470 PRINT"The tunnel really seems to twist and turn here
."
3480 GOSUB 4020:GOTO 550
3490 w1=0:w2=1:w3=1:w4=0:yp=61
3500 GOSUB 3950
3510 PRINT"As you walk along the passage you turn many corn
ers as the passage twists and turns."
3520 GOSUB 4020:GOTO 550
3530 w1=0:w2=0:w3=0:w4=1:yp=62
3540 GOSUB 3950
3550 PRINT"The passage ends in a rather small and cramped c
avern. It is no larger than 3 feet in diameter and 10 foo
t high. Rather an anticlimax after all that walking t
hrough the tunnel."
3560 GOSUB 4020:GOTO 550
3570 w1=1:w2=0:w3=1:w4=0:yp=63
3580 GOSUB 3950
3590 PRINT"You walk into a large cavern with a high domed roo
f that looks very impressive."
3600 GOSUB 4020:GOTO 550

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3610 w1=0:w2=0:w4=1:yp=64:IF b6=1 THEN w3=1 ELSE w3=0
3620 GOSUB 3950
3630 IF b6=1 THEN PRINT"You are in a small tunnel with a rus
ty door that is now open.":GOTO 3650
3640 PRINT"You walk into a small tunnel only to find your
way blocked by a large rusty door. Set in the wall way abo
ve your head is a large wooden handle. You would have to b
e very tall to reach that handle."
3650 GOSUB 4020:GOTO 550
3660 w1=1:w2=1:w3=0:w4=1:yp=65
3670 GOSUB 3950
3680 PRINT"You walk into a large cavern that has three exi
ts. They lead North, South and East."
3690 GOSUB 4020:GOTO 550
3700 w1=0:w2=1:w3=1:w4=0:yp=66
3710 GOSUB 3950
3720 PRINT"You walk along a passage that is dark and smell
y. The walls are damp and you start to feel cold."
3730 GOSUB 4020:GOTO 550
3740 w1=1:w2=0:w3=1:w4=1:yp=67
3750 GOSUB 3950
3760 PRINT"The tunnel that you are following is very cold
and damp. The walls are dirty and cold to the touch."
3770 GOSUB 4020:GOTO 550
3780 w1=0:w2=0:w3=0:w4=1:yp=68
3790 GOSUB 3950
3800 PRINT"The tunnel ends suddenly at a blank wall of rock."
3810 GOSUB 4020:GOTO 550
3820 w1=0:w2=1:w3=0:w4=0:yp=69
3830 GOSUB 3950
3840 PRINT"You are in a small chamber cut into the rock. All
around you the rock is yellow and perfectly smooth."
3850 GOSUB 4020:GOTO 550
3860 w1=1:w2=0:w4=0:yp=70:IF b5=1 THEN w3=1 ELSE w3=0
3870 GOSUB 3950
3880 IF b5=1 THEN PRINT"You are in a large cavern. You can s
ee the charred remains of a large fire.":GOTO 3900
3890 PRINT"You walk around a corner and into a brightly
lit chamber. Blocking further progress is a large fire. The
heat is tremendous and you have to draw back quickly b
efore you are burnt."
3900 GOSUB 4020:GOTO 550
3910 w1=0:w2=0:w3=0:w4=1:yp=71
3920 GOSUB 3950
3930 PRINT"You walk into a rather large cavern that has only
one exit to the East."
3940 GOSUB 4020:GOTO 550
3950 CLS #2
3960 PRINT #2:PRINT #2
3970 IF w1=1 THEN PRINT #2,"n ";
3980 IF w2=1 THEN PRINT #2,"s ";
3990 IF w3=1 THEN PRINT #2,"w ";
4000 IF w4=1 THEN PRINT #2,"e ";
4010 PRINT #2:RETURN
4020 PRINT:PRINT"visible objects"
4030 PRINT"-----"
4040 vv=0
4050 FOR t=0 TO 12
4060 IF it(t)=yp THEN PRINT i$(t):vv=1
4070 NEXT
4080 IF vv=0 THEN PRINT"nothing"
4090 RETURN
4100 IF oo>12 THEN PRINT:PRINT"That item cannot be taken.":G
OTO 550
4105 IF yp=it(oo) THEN PRINT:PRINT"you take the ";i$(oo):it(
oo)=72:am=am+1:yh(oo)=1:GOTO 4120
4110 PRINT:PRINT"it isn't here.":GOTO 550
4120 IF z=7 THEN b1=0:b2=0:GOTO 550 ELSE 550
4130 IF yh(oo)=0 THEN PRINT:PRINT"You don't have it.":GOTO 550

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4140 PRINT:PRINT"You drop the ";i$(oo):it(oo)=yp:am=am-1:yh(
oo)=0:GOTO 550
4150 IF yh(2)<>1 AND z=7 THEN PRINT:PRINT"you don't have a "
;i$(2):GOTO 550
4160 IF yp<>1 AND z=7 THEN PRINT:PRINT"you place the ";i$(2)
;" against the wall.":b2=1:it(2)=yp:am=am-1:yh(2)=0:GOTO 550

4170 IF yp=1 AND z=7 THEN PRINT:PRINT"You place the ladder a
gainst the wall ofthe shaft.":b1=1:it(2)=yp:am=am-1:yh(2)=0:
GOTO 550
4180 PRINT:PRINT"You don't have anything to place.":GOTO 550
4190 IF b2=1 AND yp=it(2) THEN PRINT:PRINT"You climb the lad
der. It certainly is a nice view from up here. I think you m
ay as well climb down now.":FOR f=1 TO 4000:NEXT:PRINT"Thats
better I like my feet on solid ground.":GOTO 550
4200 IF b1=1 AND yp=it(2) THEN PRINT:PRINT"You climb the lad
der up the mine shaft and escape. Well done you managed to
getout alive.":END
4210 PRINT:PRINT"You have nothing to climb.":GOTO 550
4220 IF yp=45 AND z=73 THEN PRINT:PRINT"It has a tap on it."
:GOTO 550
4230 IF yh(0)=1 AND z=1 THEN PRINT:PRINT"It has a light on i
t and amazing has it may seem the light still works.":GOTO 5
50
4240 PRINT:PRINT"I see nothing unusual.":GOTO 550
4250 IF yp=45 AND z=76 THEN PRINT:PRINT"You turn on the tap
and water pours out.":b3=1:GOTO 550
4260 PRINT:PRINT"You have nothing to turn.":GOTO 550
4270 IF yp=45 AND z=34 AND b3=1 THEN PRINT:PRINT"You fill th
e bucket up with water.":b4=1:GOTO 550
4280 IF yp=45 AND z=34 AND b3=0 THEN PRINT:PRINT"You cannot
fill the bucket at the moment.":GOTO 550
4290 PRINT:PRINT"You can't do that at the moment.":GOTO 550
4300 IF yp=70 AND b4=1 AND z=70 THEN PRINT:PRINT"You throw t
he water over the fire, putting it out and allowing you
to continue.":b5=1:GOTO 3860
4310 IF b4=0 AND z=70 THEN PRINT:PRINT"You have no water to
throw.":GOTO 550
4320 IF yp=70 AND b4=1 AND yh(11)=1 AND z=34 THEN PRINT:PRIN
T"you throw the bucket and water spills out, putting out t
he fire.":b5=1:it(11)=yp:am=am-1:yh(11)=0:GOTO 3860
4330 IF b4=1 AND yh(11)=1 AND z=34 THEN PRINT:PRINT"You thro
w the bucket and water pours out":am=am-1:b4=0:it(11)=yp:yh(
11)=0:GOTO 550
4340 IF z=34 AND yh(11)=1 THEN PRINT:PRINT"You throw the buc
ket.":it(11)=yp:yh(11)=0:am=am-1:GOTO 550
4350 IF yp=47 AND yh(6)=1 AND z=19 THEN PRINT:PRINT"You thro
w the slug pellets at the slug. It instanly shrivels up and
dies.":b10=1:yh(6)=0:am=am-1:GOTO 550
4360 IF yp=16 AND z=31 AND yh(10)=1 AND b16=0 THEN PRINT:PRI
NT"you throw the stones at the mirrors. They instantly sh
atter into a thousand tiny fragments.":b16=1:yh(10)=0:it(10
)=yp:am=am-1:GOTO 550
4370 IF yp=16 AND z=31 AND yh(10)=0 AND b16=0 THEN PRINT:PRI
NT"You have nothing that can break these mirrors.":GOTO 55
0
4380 IF b4=1 AND z=70 THEN PRINT:PRINT"you throw the water a
ll over the floor.":b4=0:GOTO 550
4390 IF yp=64 AND yh(9)=1 AND z=28 THEN PRINT:PRINT"you thro
w the rope over the handle.":yh(9)=0:it(9)=yp:am=am-1:b7=1:G
OTO 550
4400 PRINT:PRINT"you have nothing worth throwing.":GOTO 550
4410 IF yp=64 AND b7=1 AND z=28 THEN PRINT:PRINT"You pull th
e rope and the door slowly creaks open.":b6=1:GOTO 3610
4420 GOTO 4290
4430 IF yp=55 AND z=61 THEN PRINT:PRINT"You shut the door on
the monster, but will that be enough.":b8=1:GOTO 550
4440 GOTO 4290

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4450 IF yp=55 AND yh(8)=1 AND z=61 AND b8=1 THEN PRINT:PRINT
"you padlock the door. I don't think the monster will get yo
u now.":b9=2:GOTO 550
4460 PRINT:PRINT"You can't lock that at the moment.":GOTO 55
0
4470 IF yp=42 AND z=55 AND b11=0 THEN PRINT:PRINT"You flush
the toilet and a hidden door opens to the North.":b11=1:GOT
O 2690
4480 GOTO 4290
4490 IF yp=10 AND yh(1)=1 AND z=43 THEN PRINT:PRINT"You dig
your way through the cave-in. After a short time you break
through and find a passage leading east but just as you s
tep through the roof gives way and you are buried alive.":G
OTO 4770
4500 IF yh(1)=0 THEN PRINT:PRINT"You have nothing to dig wit
h.":GOTO 550
4510 PRINT:PRINT"You have no need to dig that.":GOTO 550
4520 IF yp=6 AND yh(3)=1 AND z=46 THEN PRINT:PRINT"You cut t
hrough the iron bars with the hacksaw.":b12=1:GOTO 1190
4530 IF yh(3)=0 THEN PRINT:PRINT"You have nothing to cut wit
h.":GOTO 550
4540 PRINT:PRINT"You have nothing worth cutting.":GOTO 550
4550 IF yp=27 AND yh(4)=1 AND z=49 THEN PRINT:PRINT"You pole
vault over the pit to the otherside.":ql=ql+1:IF ql=3 THEN
ql=1:GOTO 4570 ELSE GOTO 4570
4560 GOTO 4290
4570 PRINT:PRINT"you are now on the other side of the pit":b
13=1:GOTO 2060
4580 IF yp=27 AND z=49 THEN PRINT:PRINT"You try to jump the
pit but you fail and vanish forever.":GOTO 4770
4590 PRINT:PRINT"You have nothing to jump.":GOTO 550
4600 IF yp=36 AND yh(5)=1 AND z=52 AND b14=0 THEN PRINT:PRIN
T"You smash the wall with the hammer.":b14=1:GOTO 2450
4610 IF yp=36 AND yh(5)=0 AND z=52 AND b14=0 THEN PRINT:PRIN
T"You have nothing to smash it with.":GOTO 550
4620 IF yp=16 AND z=40 AND yh(10)=1 AND b16=0 THEN PRINT:PRI
NT"You throw the stones at the mirrors and they shatter into
a thousand tiny fragments.":b16=1:am=am-1:yh(10)=0:it
(10)=1:GOTO 550
4630 IF yp=16 AND z=40 AND yh(10)=0 AND b16=0 THEN PRINT:PRI
NT"You do not have what it requires to smash this glass.
":GOTO 550
4640 PRINT:PRINT"You have no need to smash anything.":GOTO 5
50
4650 PRINT:PRINT"Please be more specific.":GOTO 550
4660 PRINT:PRINT"How do you think you are going to do tha
t, with your bare hands.":GOTO 550
4670 PRINT:PRINT"it is looked.":GOTO 550
4680 PRINT:PRINT"You put the miners hat onto your head.":GOT
O 550
4690 PRINT:PRINT"its no use crying for help down here nob
ody can here you.":GOTO 550
4700 PRINT:PRINT"So you have given up. What a pathetic foo
l you are.":END
4710 CLS:kk=0
4720 PRINT"You are carrying"
4730 FOR pp=0 TO 12
4740 IF yh(pp)=1 THEN PRINT i$(pp):kk=1
4750 NEXT
4760 IF kk=0 THEN PRINT:PRINT"nothing.":GOTO 550 ELSE GOTO 5
50
4770 PRINT:PRINT"You have failed to escape. Would you lik
e another attempt."
4780 a$=INKEY$
4790 IF a$="y" THEN ERASE i$,it,yh:CLEAR:GOTO 360
4800 IF a$="n" THEN WINDOW 1,40,1,25:CLS:END
4810 GOTO 4780

```

Users' Hot Line

A query concerning saving and retrieving data to cassette in our first issue has generated a great deal of response from other users. We also have requests from two new users for assistance in developing specific software.

□ From George Hauer, Morphett Vale, S.A.

In response to the problem raised by Dave Anderson, the enclosed listing, used in a numeric data saving program can also be used for written programs. Note that this listing is limited to 50 items – see line 7: DIM a\$(50) – but can be changed to suit.

When run, the menu displays three options as follows:

```
Enter Data to Screen = 0
Save Data to Tape   = &
Load Data from Tape = !
```

If '0' is selected, 'number' is displayed at which point type the required data and Enter. The program then asks for verification and if OK will request the next 'number'. Alternatively, if all data is input, an '&' will save the data to tape, or an '!' load previously saved data. Hope this will be of some use and solve your problem.

```
1 REM* WRITTEN BY G.CRAWFORD & G.HAUER
2 REM* DATA TO TAPE SAVING ROUTINE
3 CLS
4 PRINT "Enter Data to Screen = 0"
5 PRINT "Save Data to Tape   = &"
6 PRINT "Load data to Tape   = !"
7 DIM a$(50)
8 n=0
9 n=n+1
10 PRINT "no";n
11 INPUT "number";a$(n)
12 IF a$(n)="0" THEN n=n-1:GOTO 21
13 IF a$(n)="&" THEN n=n-1:GOTO 26
14 IF a$(n)="!" THEN 34
15 PRINT "number inserted ";a$(n)
16 INPUT "OK y/n ";b$
17 IF b$="y" OR b$="Y" THEN 9
18 IF b$="n" OR b$="N" THEN 10
19 GOTO 15
20 END
21 FOR n=1 TO n
22 PRINT a$(n)
23 FOR i=1 TO 50: NEXT i
24 NEXT n
25 GOTO 11
26 OPENOUT"test"
27 FOR n=1 TO n
28 PRINT a$(n)
29 PRINT#9,a$(n)
30 FOR i=1 TO 50 :NEXT i
31 NEXT n
32 CLOSEOUT
33 END
34 OPENIN"test"
35 n=0
36 n=n+1
37 INPUT#9,a$(n)
38 IF EOF=-1 THEN 21
39 GOTO 36
40 CLOSEIN
```

□ From R.F. Thorpe, Buchan, Vic.

Re: User Hot-line – Issue 2, Arthur's example of file handling is, while technically correct, not the simplest solution. It is far better to use "WRITE#9" instead of "PRINT#9" because the "WRITE" command will automatically insert the necessary field delimiters, i.e. commas between fields and quotes around string fields. Thus in Arthur's examples lines 10 and 20 would become:

```
10 OPENOUT "DATA":WRITE#9,N,X,O,$,$
20 FOR I=0 TO N:J=1 TO M:WRITE#9,PT(I,J):
NEXT J:NEXT I:CLOSEOUT
```

□ From Mrs. J. Hepburn, Redcliffe, Qld.

Would it be possible to help me develop a game which is based on Multiplication and Division tables from 2 to 12? I know there are a lot of parents with children who get bored learning tables from a book. I have two like that. Made into a game where perhaps a single question or a full table is asked and a clock timing them to see how fast they could answer, would help them enormously.

□ From Trevor Quigley, Townsville, Qld.

What is the possibility of having help in writing a successful program for assisting the selection of a winning horse in various races? Factors which would have to be taken into consideration would be – Distance of race; previous race results of horses; who jockey was (to allow for various gradings of jockeys); conditions of track; length of time between races for horse, etc. I can provide whatever information is required for writing the program. (Anyone want to take a punt at this? Ed).

□ From The Amstrad User

While we are talking about writing programs, can anyone provide us with a print program that will allow us to print the programs published in the magazine in a clearer format. The two criteria are to specify the maximum number of characters to print in each line (so that it can be fitted neatly into a particular width), and to insert spaces equivalent to the number of characters in a line number, on the second and subsequent lines when a wrap-around occurs.

The Fifth Generation

Originally, Arthur Harris had hoped to cover both the fifth generation developments and artificial intelligence (AI) in this article. Examination of the material on AI shows that it is comprehensive enough to form the basis of a separate article for next month.

Much has been made in the Press about the projects in the USA and Japan to be the first to develop the fifth generation computer. The stated aim is to produce a machine which will execute 10,000 million instructions per second. Through the power of this extremely fast machine it is hoped to be able to produce artificial intelligence. Whilst all the noise in the Press concerns USA and Japan, what is happening in Europe? Are they sitting back stunned by all this high-tech development and playing the part of the passive consumer? Three (out of an eventual four) articles in New Scientist throw a little light on these matters.

The first article covers the products unveiled at the International Conference on Fifth Generation Computer Systems, held in Tokyo, early in November, 1984. Six programs and two machines were demonstrated. The six programs are all written in PROLOG. Five of them run on the Personal Sequential Inference (PSI) machine. The sixth runs on the new relational data base machine.

The PSI is a workstation capable of about 30,000 LIPS (Logical Inferences Per Second). Each inference requires up to 300 machine instructions. The final target for this project is an inference computer capable of at least 100 million LIPS.

Demonstration number one was a parsing program which is an essential component of any fifth generation computer, since it allows people to work on the machine in human language. The program takes a sentence and analyses it to produce a syntax tree.

The next demonstration is a comp-

uter version of the child's toy with 8 square "titles" arranged within a larger square. Each "title" has a number on it and from chaos, order must be produced. The difference in the computer version is that it determines the shortest path to produce the ordered arrangement and then moves the squares from location to location as it goes.

The third demonstration takes an input melody and adds the harmonies to it. This is different from a normal synthesiser, where you have to add the harmonies. None of the researchers on this project had had any proper musical training.

The fourth and fifth demonstrations were both "expert" systems. One is a medical expert system, called LOOKS, for diagnosing glaucoma. The other is an experimental, intelligent computer-aided design system. This system takes a design specification and produces a full drawn circuit from it.

The final demonstration is a simple version of a knowledge acquisition system called KAISER. The program runs on the relational database machine which makes access to data up to 1000 times faster than in software.

None of the articles from which this information has been gathered mentions the amounts devoted to the project in Japan. From other sources I believe the figure to be about \$US7000 million, over the 10 year life of the project, from the Government. There is considerable information on the amount of funding from other countries and the projects to which these funds are committed.

Firstly, let us look at the USA. The US Government response to Japan's

fifth generation project comes from the Pentagon in the form of DARPA (Defences Applied Research Projects Agency), which has \$US600 million to spend over the next five years. It supports three projects, all related to military development (one for each service).

Also in the US is a commercial venture involving, at present, 19 corporations called Microelectronics and Computer Technology Corporation (MCC). MCC is a private, profit-making company with no government support. The joining fee is \$US1 million. Further funds will be paid to take part in research programmes. The company will eventually employ 450 research scientists. The annual budget is \$US65 million and 8 projects, lasting 6 to 10 years have been announced.

Now to look at Europe. There is a combined project being run by the EEC, called ESPRIT. The member countries are contributing £UK1000 million over a 10 year period. It involves 110 projects contributed to by 550 companies, universities and institutes. In addition, the member countries have devoted funding to their own projects.

The UK has committed £UK350 million, over a 5 year period to a project called ALVEY. It embodies 93 projects so far, of which 39 are exclusively university based. The largest project, called ASPECT, aims to improve software development tools by automating them as far as possible. I wonder what happened to "The Last One" and its Canadian counterpart. ASPECT has a three year deadline covering specification, design, maintenance of real time programs.

Other projects under the ALVEY umbrella include a computer integrated manufacturing system, a scheme to equip people on the move with communicating computer terminals, a computer system to interpret the rules governing welfare benefits, a listening wordprocessor which responds to spoken commands as well as converting speech to text on the screen and systems that promise to help maintenance in off-shore gas and oil fields.

Also involved are 35 projects connected with design and production of very large scale integrated (VLSI) chips. As would be expected, the Ministry of Defence is the major contributor of research cash.

The ESPRIT project is similar to

ALVEY but has a greater emphasis on computer-aided manufacturing and systems that respond to human languages used in a normal way. ESPRIT is specifically international, in that no project is allowed to be confined to organisations from one country.

In a very offhand manner, a statement in one of the articles shows that the true extent of funding will be at least double the quoted figures. For both ALVEY and ESPRIT, participating organisations have to meet 50% of the costs of the project in which they are involved.

Finally, the only other country mentioned so far is West Germany. From my knowledge of France's involvement in the computer area, I would expect France to be mentioned

in the remaining article. The German Government has committed a budget of DM3000 million (\$A1200 million) to an, as yet, undefined programme.

The funding for programmes by individual countries is in addition to their contributions to the ESPRIT project.

The above indicates that some huge amounts of money (of the order of \$A8000 million) are being devoted to research on the fifth generation computer and AI.

By next month I should have access to the fourth article in the series. I will be able to present information on why so much money is being expended in the search for the "Holy Grail" of computing, AI.

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The Trials of Tony Blakemore

which are scrolled across the screen. By using this method a lot of memory space is saved. In another part of the program e,f,g and h are also redefined. The problem arises when you want to list the program. All words containing the letters including all basic commands and screen displays contain the re-defined characters.

To solve the problem we redefine another key function. This time we will use the number 4 on the numeric keypad. Find a gap in the early part of the listing and enter the following line.

Say line 15 KEY 132," SYMBOL AFTER 240". Again it will not interfere with the program. Follow the same procedure as the previous example. But press 4 and enter. The character set will now return to normal.

By now you should have at least one program running and be starting to enjoy and appreciate the potential of this great machine. Next month I will discuss the more obscure bugs and ways of digging them out.

Don't pass the buck — earn it

LETTERS published in The Amstrad User attract a payment of \$5. We don't mind whether you want to pass on a tip, have a moan, make an observation or whatever — merely put pen to paper and direct your comments to the Editor.

CARTOONS can also earn you \$5. Just make sure they are drawn in black ink on white paper and not folded when you submit them to the Editor, who may well be folded when he sees them.

Please send your letters or cartoons to: The Editor, The Amstrad User Suite 4a, 33-45 The Centreway, Blackburn Road, Mt. Waverley 3149.

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The CPC464 on show in Sydney

the AWA-Thorn stand alongside seven CPC464's. Thousands upon thousands of entries were received for a competition being run by AWA-Thorn, with three winners each becoming the proud owners of a CPC464. All the visitors were given an opportunity to see and use the many pieces of software on display. Despite the natural tendency towards games, an encouraging number of queries related to educational and business applications.

Now and again a swarm of school children landed like locusts and devoured every brochure in sight, but amongst them were some very knowledgeable and enthusiastic programmers. One of the disadvantages for people manning the stands (at least, the popular ones) is that there is not much opportunity to have a look round the rest of the show. We found ourselves in this position, but did manage to slip away once, but no way could we cover all the other stands. As far as competition to the CPC464 is concerned, there isn't any. So you can rest assured that if you own one, you've probably got the best micro configuration within the price range.

3rd Chance

• COMPETITION •

\$2500 worth of prizes to be won over four classes

Class 1
Best overall program
Wins an AWA Video Recorder

Class 2
Best amusement/adventure
Wins a new DD1 disk drive

Class 3
Best educational software
Wins a new DD1 disk drive

Class 4
Best business software
Wins a new DD1 disk drive

How to enter

Think about your program and map it out in a series of events or features. Write the program onto cassette based around these events and check that the program runs as intended. Once you are satisfied, send a copy of the cassette in a suitable envelope along with the following:

- 1 A brief summary of the program in 500 words or less.
- 2 A clear program listing if available.
- 3 A stamped, self addressed envelope of adequate dimensions if you would like your entry returned.
- 4 Your name and address.

You may make as many submissions as you want, but no entrant may win more than one prize.

Conditions of Entry

- 1 All entries must run on a CPC464, and must include a cassette copy of the program (plus loading instructions where necessary), a brief summary of the program and its purpose and, if possible, a full listing.
- 2 All entries must arrive by 15th May 1985, and winners will be printed in the July edition of The Amstrad User.
- 3 The decision of the judges is final.
- 4 It is a condition of entry that all entrants have exclusive ownership of the copyright of the material submitted, and the winners agree to assign all copyright in the winning submissions to The Amstrad User. Where the entrant is more than one individual, then one person must be nominated and empowered to act on behalf
- 5 We, The Amstrad User, may offer to publish programs other than the winners in the magazine or as commercial software, in which case we will agree terms on an individual basis with the author(s) concerned. We reserve the right to amend, alter or revise any program we publish.
- 6 No employees of The Amstrad User or Strategy Publications, or their relatives may enter this competition.
- 7 The Amstrad User cannot be held responsible for any loss or damage to any submission.
- 8 No entrant may win more than one prize.

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bought a CPC464, you'd
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Q.

How many computer magazines would I have to buy to get at least 30 pages of information and program listings for the new Amstrad CPC464?

A.

On average, most popular magazines will devote 2½ pages to the AMSTRAD CPC464. This means you will need to buy 12 magazines at a cost of around \$40 per month, or **\$480 per year!**

Q.

Surely there must be a more sensible and cheaper way of getting the information I need?

A.

There is.
THE AMSTRAD USER is a brand new monthly publication packed with articles, reviews, listings, hints etc. for Amstrad users only, and costs just **\$30 a year.**

Q.

How can I get a copy delivered to my home each month with an optional cassette containing all the program listings?

A.

By completing and returning this order.

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