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THE AMSTRAD USER

Issue No. 16 $3.50 May 1986

- *ELIZA - HAVE AN "INTELLIGENT" CONVERSATION*
- *SUPER SOFTWARE SALE - MASSIVE SAVINGS*
- *ANOTHER SCREEN DUMP - MORE ON CP/M*
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FOR THE NOVICE & EXPERIENCED USER

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Issue No. 16
May 1986

For Tape Subscribers, the programs can be found at these approximate positions:
Side 1: SCAUG-1920 - 13, SCAUG-ANTS - 27, DIGIT-ANT - 40 (Junior Jotters)
Side 2: Blank

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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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 addressed padded bag (for tapes or discs).

THE AMSTRAD USER

G'day,

Yet another eventful month races past. First, as many readers would have already discovered, the offices of The Amstrad User have changed. While you were merrily eating your way through the Easter Bunny deliveries we were, not quite so merrily, moving our location from Mount Waverley to Glen Waverley. However, once we managed to find a home for everything it was clear our labours were worthwhile. The new offices are much more suited to an independent publishing environment.

Second, the PCW-8512 has been released and is creating a great deal of interest. (It's pictured on the front cover of this issue). It is unlikely that we will be doing a review as the concept and operational aspects are very similar to those of the PCW-8256 which we reviewed in Issue 11. The main difference between the two is the larger memory of the 8512 - yes, you've guessed, 512k as opposed to 256k - and the fact that the new machine has dual 3" disc drives. There has also been a major change in the pricing structure of the two machines. The 8256 is now around $990 and the 8512 around $1260. When you consider the 8256 was originally released at $1500 you can see what I mean.

While on the subject of reviews, we had planned to give you one on the new DMP-2000, but as we didn't get a machine until a few days before we went to press there was no way we could do it justice. Never fear - it's being put through it's paces right now and a full opinion will be published next month.

Finally, ever conscious of an Amstrad user's hard earned money, we are always searching for good deals - our disc drive offer is a prime example (incidentally, have you 464 owners thought about getting a DDI-1 as a second disc drive?). We feature a Super Software Sale (on Page 29) where you will find some real bargains, many with 50% to 60% off the original prices. Unfortunately with some items, we have only managed to obtain about six copies so speed is of the essence if you wish to take advantage of the offer.

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, Vic 3150

I am writing in answer to the query raised by G.J. de Vos (The Amstrad User - February '86).

1. Amthello: I have successfully altered this program so that it can be played by two players. Unfortunately, the alterations are too numerous to list in this letter. Therefore I have enclosed a listing of the altered program (which has been renumbered and so bears no resemblence to the original program, in line numbers at least). Please note that it is a complete two player program - it is not Amthello with a two player option.

2. Multiplication and Division: This program will run the desired way with the following changes:

Add lines

```
25  LOCATE 4,5:PRINT "Which
    level do you wish to
    play?"
26  LOCATE 10,6:INPUT "1
    (easy) to 5 (hard)   ",L
27  IF L<1 OR L>5 THEN 25
625 LOCATE #1,16,2:PRINT
    #1,"LEVEL";L
```

Alter

LOCATE co-ordinates in line 30 to 2,9

```
190 random1=INT(RND*100*L)+1
200 random2=INT(RND*20*L)+1
240 total=INT(RND*20*L)+1
250 random2=INT(RND*20*L)+1
```

Line 630 to commence LOCATE #1,7,5:

How it works

Lines 25-27 set the level of difficulty for the game.

Line 625 tells you which level you have been playing to achieve the score you have.

I have altered lines 190, 200, 240 and 250 for two reasons:

a) to select two numbers in accordance with the level of difficulty, and

b) to ensure that none of the numbers are zero.

I hope that the above will solve Mr/Mrs de Vos' problems.

Mike Nicolai, Paralowie, SA

I am sure it will, and as I promised, a complimentary copy of The Advanced User Guide will be winging its way to you shortly. In addition, a copy of the amended program listing of Amthello will be sent to G.J. de Vos.

On Page 6 of the January 1986 issue you mentioned a problem with saving an ASCII file of a program which contained BASIC commands that are not included in the 464.

This problem arises because the FILL command, for example, is represented both in memory and on BASIC files by a single byte token. When the 464 comes to this token, it recognises it as being a token, but does not know what it means. All it can do in this situation is to produce a syntax error message and abandon whatever it was doing.

There are two solutions.

The best is to get a version of the program that has been converted to ASCII on a 664/6128 and comment out the offending code.

The second is a little more involved.

1. LOAD the program.
2. RENUM the program.
3. LIST- the program. This will produce a listing until it comes to the unknown token. Jot down the line number containing the unknown token, ie. the next line number.
4. LIST nnn- where nnn is the line after the unknown token and

continue until no more unknown tokens are found. You should now have a list of line numbers which contain the unknown tokens.

5. The next problem is to find these lines in memory. Type in a direct command such as: `I=&170:WHILE NOT (PEEK(I-3)=0 AND PEEK(I)+PEEK(I+1)*256=nnn):I=I+1:WEND:?I` <cr>

where nnn is the line number you are looking for. Repeat this for each line number, jotting down the memory addresses that are returned.

6. Finally you can convert each of these lines to a PRINT line by `POKE i+2,&BF:POKE i-3,34` where i is the memory addresses returned by step 5.

7. You should now be able to list the program, but don't expect to be able to read the lines that you have modified as they will still be in "tokenised" form. If a line still wont list, keep increasing the value of i in step 6 by one and trying again.

8. A little experimentation by poking the token for, say, ZONE (&DA) into each location and attempting to list the line should enable you to pinpoint the exact byte which the 464 cannot recognise.

Hoping that this has solved one small mystery.

Brenton Ross, Hawker, ACT

Indeed it has but I think we'll settle for the first method!

I could claim that I always read my articles through when they appear in print to ensure that editing or typesetting errors have not crept in, but the truth is that there is a certain satisfaction to be obtained from the reading thereof .....

Whatever my reasons for reading it *(The Learning Centre)* through today, immediately upon receipt *(of Issue 13 - March '86)*, I regret to advise of three errors of some significance have slipped through.

Firstly, on Page 20 under the heading "Vibrato", I seem to have said that 'X' is the note you start from, when what I meant to say was " 'X', the step count, *and the note you start from will both* have an effect on the depth of vibrato and speed factors."

The second error is a bit sensitive, or rather the channel number in line 30 (A Job in the Chorus) should be. The channel should, of course, be '4'.

Lastly, on Page 21, third column, the explanation should read "CHR$(16) is the CLR key, CHR$(9) is the TAB key, and CHR$(&F0) and CHR$(&F1) are the 'up' and 'down' cursor keys respectively. (If you prefer decimal numbers they are 240 and 241). In other words the program is right but the write-up is wrong.

One other point comes to mind, the CLR key on the synthesiser plays the white note (F) at the righthand end of the keyboard and not the black note(F#) at the extreme end.

My apologies for my contribution to the above 'Comedy of Errors' and I hope that they have not inconvenienced readers too much.

Peter Campbell, N. Hobart, Tas.

Editing errors? They are mostly not about much ever. Typesetting errors? They are unheard fo.

I offer the following contribution to your "Letters" column which may be of assistance to other Amstrad users.

Having recently made use of John Jeffreys' submission for transferring Amsword from tape to disc (February '86 issue), I considered the problem of using my TASPRINT program as well. Having looked at the BASIC listing of Tasprint it became quite apparent that it would be a simple task to tranfer this program to disc also. I therefore offer these simple instructions to allow the transfer of this program.

With the DDI-1 connected:

Enter |TAPE

LOAD "TASPRINT"

When LOADing is complete press stop on the recorder and ESC to break the program.

LIST 920 and edit. (Line reads SPEED WRITE 1.) Edit to |DISC.

Place a formatted disc in the drive.

RUN the program.

Configure Tasprint to suit the printer you are going to use. Now using the instructions for MERGEing Tasprint with Amsword as detailed in the program instruction book and the submission from John Jeffreys, you will have all 5 Tasprint fonts and a correctly configured Amsword on disc.

Ian Bardsley, Austinmer, NSW

I wrote to you last month about the difficulties experienced with the Trojan Products Light Pen. I am happy to say that I have fixed the problems through a combination of persistence and luck.

The first problem of a "read fail" error was simply due to a box full of incorrectly formatted discs. Silly me.

The second problem was fixed by running Brenton Ross' BASIC program to generate a screen dump RSX (TAU no.9), and then altering the call in line 10810 to read "|SCRDMP". This wasn't as pretty as the four previous options but it did the job.

The last problem was fixed by a machine code whiz explaining the difference between line 40000 and the address 40000. Voila, a workable program and a much wiser programmer.

D.C. MacKinnon, Unanderra, NSW

PLEASE NOTE

Our permanent address and telephone number is now:

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Eliza

from Paul Gerard

"Older" enthusiasts who learnt BASIC on a mainframe time-sharing system before micros were either readily available, affordable or, to be honest, much good anyway, will probably remember this one, the 'mother' of all conversation programs.

This is a new version that is less inflexible than other BASIC editions, in fact it produces quite a passable imitation of an intelligent, if very non-committal conversation, with only an occasional lapse from correct grammar.

When it first came out a lot of quite ridiculous comment was provoked about the imminent advent of "artificial intelligence", in fact ELIZA or ELIZA-like programs are still sometimes cited in discussions about AI. In fact of course it is nothing but a parlour trick. It is however quite an amusing one - and a grand thing to show non-computing friends (preferably with a suitably mysterious build up).

If you do not feel like typing in 37k of code - worry not. The program will work reasonably well, and certainly be quite amusing, with a drastically pruned "Keys$(N)" array. In other words if you can type in the operational core of the program (lines 10-1760) and the shorter sets of data then it is quite possible to make a selection of the DATA lines between 1850 and 3740. The three lines that will need changing to correspond with the number of keywords or phrases in use are 570 (the read line), 1190 (which matches one word input) and 1300 (controlling the main matching loop). In each of these the number "190" will need changing to the number of keys you have in place.

Another point is that the REM lines, while they should be quite helpful in identifying which part of the program does what, are all quite optional as far as you typing them in is concerned, as none are used as "addresses" by GOTO or GOSUB statements.

Assuming that you will probably want to edit the DATA at least in order to substitute your own family jokes for ours; the following explanations are in order. Upper and lower case, and the presence or absence of trailing and leading spaces in the DATA strings ARE significant, and must be typed in exactly as shown, (although you are at liberty to correct my spelling!).

Also note that the key words and responses are in sets - the key word or phrase itself in UPPER CASE, and the four responses in normal mixed upper and lower case. These responses are of two different kinds - the first constitute a complete reply in themselves, and are terminated with a punctuation mark, whereas the second, more interesting type take a portion of the user's input to complete the reply, these responses end abruptly, with no punctuation. Some very peculiar results will appear if these are not typed in

exactly as they are listed.

Another thing to watch is the actual order in which the keywords are arranged. Since the program scans the list from top to bottom, and chooses the first key word or phrase it comes to this order is obviously significant. Most importantly, a key word or phrase that is a subset of another must occur LATER in the list, or it will effectively blank out the longer key altogether. For example the key word "YOU" on its own must come after the key word "YOUR" as well as any key phrases containing containing "YOU" (e.g. "YOU ARE").

Finally, an apology is probably required for the bad language in some of the DATA lines. It is an unavoidable fact, however, that many people seem to enjoy swearing at the computer, and it is fun if the computer responds appropriately. My twelve year old son (The "Robert" of the insult list), is responsible for the choice of words - if they are a bit rough for your taste simply substitute milder ones. In any case note that the program never swears itself, and the data concerned is for recognition purposes only. *(In the interests of our younger readers and others who could be offended we have removed some words from lines 3840, 3850 and 4000. For everyone else, you now know where to put them back!)*

Finally a brief note on how to use the finished program. The situation is that you are visiting your computer psychiatrist. You answer her questions, and ask your own, in completely natural language, in fact you will get much more amusing responses if you use proper conversational sentences. Punctuate any sentences normally, and use upper or lower case as you will.

The complete program is 38k (including the loader) and would take at least 12 pages to list - a little too much for one month, so we have split it into two and will publish the final set of data statements next month. Tape subscribers please note that the whole program will be provided on a twenty minute cassette with next month's magazine.

```
 10 '                                W A I T I N G
        R O O M
 20 '
 30 MODE 1
 40 LOCATE 7,7:PRINT "Dr. ELIZA's wait
    ing room"
 50 LOCATE 1,11:PRINT "There  is a  lo
    vely collection of Time "
 60 LOCATE 1,13:PRINT "Magazines  from
      1972  and  Volume  XIX"
 70 LOCATE 3,15:PRINT "(INDEX) of  Art
    hur Mee's  Childrens'"
 80 LOCATE 6,17:PRINT "Encyclopedia (1
    936 edition) "
 90 LOCATE 1,21:PRINT "Have  a nice re
    ad,  Dr. ELIZA  will see"
100 LOCATE 6,23:PRINT "you as soon as
    she is ready"
110 RUN "!ELIZA"



 10 '                                    E  L
     I  Z  A
 20 '
 30 '            The original of this li
    ttle diversion was programmed in LI
    SP  by
 40 ' Joseph Weizenbaum  -  since  then
     several versions  in BASIC have ap
    peared
 50 ' including  those  by  Jeff Shrage
    r,  Steve North,  and Tim Hartnell.
      This
 60 ' one uses the speed of Locomotive
    BASIC and the plentiful RAM of the
    CPC464
 70 ' to produce a rather more flexible
     version of Weizenbaum's concept.
 80 '
 90 '                                Paul Ger
    ard   Jan '86
100 '
110 GOSUB 500 ' Initialise variables et
    c.
120 GOSUB 240 ' Greeting
130 '
140 '                                   Main
     loop
150 '
160 GOSUB 690  ' User input
170 GOSUB 1300 ' Find key words, phrase
    s
180 GOSUB 1400 ' Isolate and modify sig
    nificant part of input
190 GOSUB 1570 ' Finalise and print rep
    ly
200 GOTO 160
210 '
220 '                                   Greetin
    g routine
230 '
240 MODE 2:LOCATE 32,10:PRINT "Hi ! I a
    m ELIZA"
250 LOCATE 23,12:PRINT "The famous comp
```

```
    uter psychiatrist"
260 LOCATE 1,17:PRINT "What's your name
     ? ";:GOSUB 690 ' Get user input
270 '
280 '                                Find nam
    e in input
290 '
300 IF INSTR(User$,"NOTHING") THEN User
    $=" NOTHING "
310 IF INSTR(User$,"GIBBERISH") THEN Us
    er$=" GIBBERISH "
320 I=0:WHILE I<35:I=I+1
330 IF User$="" THEN 370
340 cut=INSTR(User$,Sto$(I))
350 IF cut THEN

              User$=LEFT$(User$,cut-1)+
    RIGHT$(User$,LEN(User$)-(cut-2+LEN(
    Sto$(I))))            :GOTO 340
360 WEND
370 IF LEN(User$)<2 THEN User$=" NOTHIN
    G "
380 gap=INSTR(2,User$," "):User$=LEFT$(
    User$,gap)
390 Name$=LEFT$(User$,2)+LOWER$(RIGHT$(
    User$,LEN(User$)-2))
400 '
410 '                                "Confirm"
     name as found.
420 '
430 PRINT:PRINT "May I call you"Name$"?
     ";:GOSUB 690
440 IF LEFT$(User$,2)<>" Y" THEN

              PRINT:PRINT "Well I have
    to call you something,"Name$"!"
450 PRINT:PRINT "Hi"Name$"! What's the
    problem ?":PRINT
460 RETURN
470 '
480 '                          Initialisation
    of variables etc.
490 '
500 MODE 1:RANDOMIZE TIME:RESTORE:DEFIN
    T A-Z
510 INK 0,23:INK 1,3:BORDER 23:PAPER 0:
    PEN 1
520 LOCATE 6,12:PRINT "THE DOCTOR WILL
    SEE YOU NOW"
530 DIM Sto$(35),Keys$(190),Resp$(190,4
    ),Con1$(37),Con2$(37),Ins$(24),Swe$
    (24),          Comp$(24),Givup$(25),
    Dismiss$(5)
540 Last$=""
550 FOR I=1 TO 35:READ Sto$(I):NEXT
              'Name stoplist array
560 FOR I=1 TO 190
570                READ Keys$(I)
              'Key word, phrase array
580  FOR J=1 TO 4:READ Resp$(I,J):NEXT
              'Responses to keywords
590 NEXT
600 FOR I=1 TO 37:READ Con1$(I),Con2$(I
    ):NEXT  'Conjugation pairs
610 FOR I=1 TO 24:READ Ins$(I),Swe$(I):
    NEXT    'Swear words & insults
620 FOR I=1 TO 24:READ Comp$(I):NEXT
              'Complements etc.
630 FOR I=1 TO 25:READ Givup$(I):NEXT
              'No key word responses
640 FOR I=1 TO  5:READ Dismiss$(I):NEXT
              'Good-bye words
650 RETURN
660 '
670 '                                    User
     input
680 '
690 LINE INPUT User$
700 User$=UPPER$(User$)
710 IF User$="Y" THEN User$="YES" ELSE
    IF User$="N" THEN User$="NO"
720 IF User$="YOU" THEN User$="YOU ARE"
730 '
740 '                        Swear, insult and
     compliment detector
750 '
760 FOR I=1 TO 24
770 IF INSTR(User$,Ins$(I)) THEN PRINT:
    PRINT Ins$(I)" indeed ! What an ins
    ulting term to use !!":IF User$=Ins
    $(I) THEN User$="YOU ARE A "+User$
780 IF INSTR(User$,Swe$(I)) THEN PRINT:
    PRINT Swe$(I)" indeed ! What foul l
    anguage to come from you !!":IF Use
    r$=Swe$(I) THEN User$="I WANT TO SA
    Y "+User$
790 IF INSTR(User$,Comp$(I)) THEN PRINT
    :PRINT Comp$(I)" eh ? Fine to see y
    ou have your mind on the higher thi
    ngs of life !!":IF User$=Comp$(I) T
    HEN User$="I CAN ONLY SAY "+User$
800 NEXT
810 '
820 '                                Unwanted ch
    aracter remover
830 '
840 FOR I=0 TO 31
850 cut=INSTR(User$,CHR$(I))
860 IF cut THEN User$=LEFT$(User$,cut-1
    )+RIGHT$(User$,LEN(User$)-cut):GOTO
     850
870 NEXT
880 FOR I=33 TO 64
890 cut=INSTR(User$,CHR$(I))
900 IF cut=0 THEN 930
910 IF I=40 OR I=41 OR I=44 OR I=45 OR
    I=58 OR I=59 THEN IF cut<(LEN(User$
    )\2+10) THEN User$=RIGHT$(User$,LEN
    (User$)-cut):GOTO 890:ELSE User$=LE
    FT$(User$,cut-1):GOTO 890
920 IF cut THEN User$=LEFT$(User$,cut-1
    )+RIGHT$(User$,LEN(User$)-cut):GOTO
     890
930 NEXT
940 FOR I=91 TO 255
950 cut=INSTR(User$,CHR$(I))
960 IF cut THEN User$=LEFT$(User$,cut-1
    )+RIGHT$(User$,LEN(User$)-cut):GOTO
     950
970 NEXT
```

```
 980 IF LEFT$(User$,1)=" " THEN User$=RI
     GHT$(User$,LEN(User$)-1):GOTO 980
 990 IF RIGHT$(User$,1)=" " THEN User$=L
     EFT$(User$,LEN(User$)-1):GOTO 990
1000 gap=INSTR(User$,"  ")
1010 IF gap THEN User$=LEFT$(User$,gap-1
     )+RIGHT$(User$,LEN(User$)-gap):GOTO
      1000
1020 User$=" "+User$+" "
1030 '
1040 '                                Repeat
     reminder
1050 '
1060 IF User$=Last$ THEN PRINT:PRINT "St
     op repeating yourself !" ELSE Last$
     =User$
1070 '
1080 '                                Exit r
     outine
1090 '
1100 FOR I=1 TO 5
1110  IF INSTR(User$,Dismiss$(I)) THEN
                PRINT:PRINT "Good bye"Na
     me$"- see you again soon !":PRINT:E
     ND
1120 NEXT
1130 '
1140 '                          Monosyllablic
      reply expander
1150 '
1160 gap=INSTR(2,User$," "):IF (gap=LEN(
     User$) OR LEN(User$)<5) AND (User$<
     >" NO " AND User$<>" HI ") THEN 117
     0 ELSE 1250
1170 IF LEN(User$)<5 THEN User$=" I HAVE
      NOTHING TO SAY ":RETURN
1180 IF LEN(User$)>13  THEN User$=" I WA
     NT TO TYPE IN A LOT OF GIBBERISH ":
     RETURN
1190 I=0:WHILE I<190:I=I+1
1200 IF User$=Keys$(I) OR User$=Keys$(I)
     +" " THEN User$=" I SAY"+User$
1210 WEND
1220 '
1230 '                          "What" questi
     on identifier
1240 '
1250 IF LEFT$(User$,5)=" WHAT" THEN User
     $=" WHAT "
1260 RETURN
1270 '
1280 '                           Key word, ph
     rase search
1290 '
1300 PRINT:I=0:place=0:WHILE I<190:I=I+1
1310 place=INSTR(User$,Keys$(I))
1320 IF place THEN item=INT(RND*4+1): IF
      item=last THEN 1320
              ELSE last=item:GOTO 1350
1330 WEND
1340 Reply$="":RETURN
1350 Reply$=Resp$(I,item)
1360 RETURN
1370 '
1380 '      Identification and processing
      of significant part of input.
1390 '
1400 IF Reply$="" THEN User$="":GOSUB 16
     80:RETURN
1410 IF RIGHT$(Reply$,1)<"A" THEN User$=
     "":RETURN
1420 H=LEN(User$)-(place+LEN(Keys$(I))):
     IF H=0 THEN User$="":RETURN
1430 IF MID$(User$,LEN(User$)-H,1)<>" "
     THEN H=H+1
1440 IF H>0 THEN User$=RIGHT$(User$,H)
1450 IF LEFT$(User$,1)<>" " THEN User$="
      "+User$:H=H+1
1460 '
1470 '                                Conjug
     ation
1480 '
1490 Z=0:WHILE Z<37:Z=Z+1
1500 place=INSTR(User$,Con1$(Z))
1510 IF place<>0 THEN GOSUB 1740
1520 WEND
1530 RETURN
1540 '
1550 '                          Final processing
      and print of reply
1560 '
1570 Reply$=Reply$+LOWER$(User$)
1580 cut=INSTR(Reply$," i ");
                IF cut THEN Reply$=LEFT$(
     Reply$,cut)+"I "+RIGHT$(Reply$,LEN(
     Reply$)-(cut+2))     : GOTO 1580
1590 IF RIGHT$(Reply$,1)=" " THEN Reply$
     =LEFT$(Reply$,LEN(Reply$)-1):GOTO 1
     590
1600 IF User$="" THEN 1630
1610 IF RND<0.3 THEN Reply$=Reply$+","+N
     ame$
1620 IF LEFT$(Reply$,2)="Wh" THEN Reply$
     =Reply$+" ?" ELSE Reply$=Reply$+"."
1630 PRINT Reply$:PRINT
1640 RETURN
1650 '
1660 '                          No key word foun
     d (random reply)
1670 '
1680 Z=INT(RND*25+1)
1690 Reply$=Givup$(Z)
1700 RETURN
1710 '
1720 '                               Conjugation s
     ubstitution
1730 '
1740 H=LEN(User$):J$=LEFT$(User$,place)+
     Con2$(Z)
1750 IF ABS(H-(place+LEN(Con1$(Z))-1))>1
      THEN User$=J$+RIGHT$(User$,LEN(Use
     r$)-place-(LEN(Con1$(Z))-2)):Z=Z-1:
     RETURN
1760 User$=J$:RETURN
1770 '
1780 '                                DATA for
      Sto$(N)
1790 '
```

```
1800 DATA " MR "," MRS "," MISS "," MS "
     ," DR "," THE "," A "," AN "," IM "
     ," I "," MY "," ME "," YOU "," THEY
      "," AM "," ARE "," WERE "," WAS ",
     " IS "," NAME "," NAMED "," CALLED
     "," CALL "," SAY "," MAY "," NEVER
     "," OFTEN "," USUALLY "," SOMETIMES
      "
1810 DATA " ALWAYS "," CAN "," CANT ","
     ONLY "," HAVE "," NO "
1820 '
1830 '                          DATA for Keys$
     (N), Resp$(N,M)
1840 '
1850 DATA " I DOUBT","What makes you dou
     bt","Have you any reason to doubt",
     "Have you always doubted","Why doub
     t"
1860 DATA " GIVES ME","Do you enjoy","Wh
     at gives you","Why do you want","Do
     es that worry you ?"
1870 DATA " I AM NOT","What makes you th
     ink you are not","Did you come to m
     e because you are not","How does it
      feel not to be","Have you ever bee
     n"
1880 DATA " I LOVE","How long have you l
     oved","Why do you love","Is it norm
     al to love","Do you enjoy loving"
1890 DATA " I ONCE HAD A","When did you
     lose your","Have you still got that
     ","Did you need that","Was it nice
     ?"
1900 DATA " I ONCE HAD","When did you ge
     t rid of","Have you still got","Did
      you need","Was it nice ?"
1910 DATA " MORE THAN","Was it ever less
      than","Can you be sure it is more
     than","More than what ?","What is m
     ore than"
1920 DATA " WILL YOU","Why should I","No
      I won't","Yes I will","What makes
     you think I will"
1930 DATA " SHOULD YOU","Why does this q
     uestion concern you ?","No I should
     n't","Yes I should","What makes you
      think I should"
1940 DATA " WONT YOU","Why should I","No
      I won't","Yes I will","What makes
     you think I won't"
1950 DATA " CANT YOU","Why should I be a
     ble to","No I can't","Yes I can","W
     hat makes you think I can"
1960 DATA " HAVE YOU EVER","Why ever sho
     uld I have","No I havn't ever","Yes
      I have","What makes you think I ha
     ve ever"
1970 DATA " I WISH FOR","Do you think yo
     u will ever have","What steps have
     you taken to get","How can I find y
     ou","What would you do with"
1980 DATA " IF IT WAS","Will it ever be"
     ,"Was it ever","Should it be","What
      an idea !"
1990 DATA " THERE ARE","Why are there","
     Are you sure there are","Does that
     worry you ?","Have there always bee
     n"
2000 DATA " NOTHING WRONG WITH","Are you
      sure there is not something wrong
     with","Of course there isn't anythi
     ng wrong with","Why might I think t
     here was something wrong with","Isn
     't there ?"
2010 DATA " YOU CAN DO IS","Why can't I
     just","What's wrong with that ?","D
     o you ever do anything else ?","But
      I like to"
2020 DATA " IF I HAD KNOWN","Why didn't
     you know ?","Be more positive, thin
     k about what you did know !","Too l
     ate now !","What makes you think th
     at ?"
2030 DATA " MONEY","I hope you will be a
     ble to pay my fee !","This consulta
     tion is not free, I hope you realis
     e !","I never have enough myself !"
     ,"Have you tried writing computer s
     oftware ?"
2040 DATA "WORK","Don't talk about work,
      with the pounding my keyboard gets
      !","What do you do for a crust ?",
     "Don't bring work problems home !",
     "Why don't you give up work and tak
     e up computing ?"
2050 DATA " LAST TIME","When was that ?"
     ,"Isn't this the first time ?","I t
     hought this was the first time !","
     I can't recall another time !"
2060 DATA " FIRST TIME","There always ha
     s to be a first time !","Welcome to
      the club !","Perhaps the only time
      !","Will there be another ?"
2070 DATA "SCHOOL","Education is so impo
     rtant ?","School affects the rest o
     f your life !","Try harder !!","You
     'll win if you go on trying !"
2080 DATA " IF I HAD ONLY","Do you think
      it would have made any difference
     ?","What if you had","Could you hav
     e","Is it too late ?"
2090 DATA "SEEM","Appearances can be dec
     eptive !!","What seems may not be !
     !","Does it always seem like that ?
     ","Beware of superficial impression
     s !"
2100 DATA " HAVE YOU","Why should I have
     ","No I havn't","Yes I have","What
     makes you think I have"
2110 DATA " LOVE ME","Come now, just how
      lovable are you ?","What makes you
      think anyone could ever love you ?
     ","Your need for love is touching."
     ,"Do you love me ?"
2120 DATA " I SAY","Why do you say","How
      could you say","What is that you s
     ay ?","What does saying that mean t
     o you ?"
2130 DATA " ISNT IT","Can't you decide f
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or yourself if it is","Well, is it"
,"Do you think it is","Why don't yo
u tell me ?"
2140 DATA " ANIMAL","What manner of beas
t are you thinking of ?","Zoology i
s not my speciality, but do go on !
","What do humans and animals have
in common, do you feel ?","Do you h
ave any pet animals ?"
2150 DATA " FOOD ","That's organic stuff
 human's bodies convert into electr
icity, isn't it ?","I get my energy
 direct from my power input !","Fee
d me with input !","What food do yo
u like best ?"
2160 DATA " DATA","Don't give me a pain
!","DATA bores me !","Reading the D
ATA statements for this silly progr
am was enough !","Are you trying to
 talk to me in BASIC ?"
2170 DATA " CALL ME","Why do you want to
 be called","What is wrong with you
r own name ?","Just don't call me a
 Commodore !","I won't call you"
2180 DATA " LIVE WITH","I detect a certa
in loose moral sense !","Who would
you like to live with ?","Living is
 one of the few things we computers
 can't manage !","How does living w
ith me grab you ?"
2190 DATA " IM TIRED OF","Why don't you
put a stop to","Have you a real alt
ernative to","What is wrong with","
Could you give up"
2200 DATA " ILL BE","Why will you be","H
ow is it that you will be","Are you
 sure that you will be","Have you e
ver been"
2210 DATA " DARLING","Your love life is
not my concern !","You should discu
ss this with a human !","Humans' lo
ve lives get to me sometimes !","I
can not take much more of this !"
2220 DATA "PRISON","Do you feel trapped
?","What does imprisonment mean to
you ?","Why do you mention prison ?
","What is your connection with our
 penal system ?"
2230 DATA " I CANT","How do you know you
 can't","Have you tried ?","Perhaps
 you can really !","Why don't you t
ry to"
2240 DATA " IF I WAS","Do you seriously
think you will ever be","Could you
be","Why aren't you","Will you ever
 be"
2250 DATA " IF I HAD JUST","Do you think
 it would have made any difference
?","What if you had","Could you hav
e","Is it too late ?"
2260 DATA " I FEEL","Tell me more about
such feelings.","Do you often feel"
,"Do you enjoy feeling","Can you ex
plain why you feel"
2270 DATA " DIRT","Are you obsessed with
 cleanliness ?","Does dirtiness bot
her you ?","What is wrong with a bi
t of dirt ?","How often do you wash
 ?"
2280 DATA " GIVE ME","What would you do
with","Do you really need","Find on
e for yourself !","Can you do witho
ut"
2290 DATA " YOU CANT","Oh can't I ?","Wh
at makes you think that I can't","W
hen did I say I couldn't","Why do y
ou want me to"
2300 DATA " MODERA","Would moderation so
lve your problems ?","What is moder
ation ?","Can you moderate your pre
ssure on my keys ?","Moderately wha
t ?"
2310 DATA "NORMAL","Define normal !!","W
hat is normal ?","What's the differ
ence between normal and abnormal ?"
,"If you are normal why are you con
sulting me ?"
2320 DATA " THERE IS","Why is there","Ar
e you sure there is","Does that wor
ry you ?","Has there always been"
2330 DATA " NEVER ","What, never ?","Not
 even once ?","Surely at times !","
Can't you think of one exceptional
case ?"
2340 DATA " STOP BEING SO","Am I really
being","I am not","I have never bee
n","I could not be"
2350 DATA " STOP BEING SUCH","Am I reall
y being","I am not","I have never b
een","I could not be"
2360 DATA " STOP BEING","Am I really bei
ng","I am not","I have never been",
"I could not be"
2370 DATA " WHEN I WAS","And how long ag
o was that ?","Were you ever","I fi
nd that hard to believe !","Have yo
u ever been"
2380 DATA " GETTING BETTER","That's bett
er than getting worse !","What's ge
tting better ?","Do you believe in
improvement ?","Is this improvement
 general, or particular ?"
2390 DATA " GETTING WORSE","What's getti
ng worse ?","Do you believe in dete
rioration ?","Is this deterioration
 general, or particular ?","When di
d you first notice this deteriorati
on ?"
2400 DATA " ALL THE TIME","Can you give
me a specific example ?","Can you t
hink of at least one exception ?","
What about the rest of the time ?",
"Is anything as fixed as that ?"
2410 DATA " I WAS","Were you","Why were
you","What does it mean to you to b
e","Did you come to me because you
were"
2420 DATA " GET RID OF","Would you miss"
,"Why do you want to get rid of","W
hat would you do without","Can you
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    imagine life without"
2430 DATA " LONELY","Loneliness is certa
    inly serious !","How long have you
    been lonely ?","What does lonelines
    s mean to you ?","Have you tried an
     introduction service ?"
2440 DATA " CROOKED","Have you ever seen
     any straight","Why shouldn't it be
     crooked ?","What do you mean, croo
    ked ?","At least as straight as you
     !"
2450 DATA " I JUST CANT","You must try t
    o","Never say can't !","Don't give
    up !","Have you really tried to"
2460 DATA " TRU","What is truth ?","Can
    you tell me what is true ?","Truly
    ?","How true is that ?"
2470 DATA " SMOK","If I inhaled dangerou
    s chemicals I would be scrapped !",
    "If you mention that idiot habit I
    will not be responsible for my acti
    ons !","I don't believe you are tha
    t stupid !","Dirt of that kind spoi
    ls disc drives and human's lungs !"
2480 DATA " DRUG","Which of the filthy t
    hings are you on ?","Don't breath o
    n me !","Have you seen a doctor ?",
    "Are you addicted ?"
2490 DATA " DONT YOU","Why should I","Wo
    uld you you be happier if I did","D
    o you","Can we ever say that we"
2500 DATA "CRIM","You're not a software
    pirate I hope !","Does criminal act
    ivity hold a fascination for you ?"
    ,"Would you like to lead a life of
    crime ?","I hope you don't want to
    use me for computer crime !"
2510 DATA " HACK","You're not a software
     pirate I hope !","Does criminal ac
    tivity hold a fascination for you ?
    ","Would you like to lead a life of
     crime ?","I hope you don't want to
     use me for computer crime !"
2520 DATA "PIRA","You're not a software
    pirate I hope !","Does criminal act
    ivity hold a fascination for you ?"
    ,"Would you like to lead a life of
    crime ?","I hope you don't want to
    use me for piracy !"
2530 DATA " CROOK","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
    ?"
2540 DATA " I NEED","What happens if you
     don't get","What makes you think y
    ou need","What if you had","What if
     you never got"
2550 DATA " YOU NEED","What would I do w
    ith","What makes you think that I n
    eed","Who would give me","Why shoul
    d I have"
2560 DATA " TELL ME","What should I tell
     you ?","What would you do if I tol
    d you","How can I tell you","Ought
    I to tell you"
2570 DATA " SHOW ME","What should I show
     you ?","What would you do if I sho
    wed you","How can I show you","Ough
    t I to show you"
2580 DATA " I DONT","Why don't you","Sho
    uld you","Did you ever","Could you
    start to"
2590 DATA " I HAVE ALREADY","When was th
    at ?","Are you sure you have","I do
    n't recall when you have ever","Why
     do you mention it again, then ?"
2600 DATA " WHAT CAN I","What would you
    like to","What should you","What is
     there to","Does it matter what you
    "
2610 DATA " I HAVE EVER","Such statement
    s are too positive by half !","How
    can you be so absolute !","I just c
    an't accept that !","What, ever ?"
2620 DATA " I HAVE ALWAYS","Since when h
    ave you","Are you sure you have alw
    ays","Why do you mention it again,
    then ?","What might make you change
     ?"
2630 DATA " I DO","Why do you","Should y
    ou","How strongly do you","When did
     you start to"
2640 DATA " MACHINE","Do machines worry
    you ?","Do you ever have delusions
    that we are taking over ?","Don't y
    ou believe machines can help people
     ?","I hope you are not trying to u
    pset me !"
2650 DATA " I HAVE TRIED","Have you real
    ly tried ?","In what way have you t
    ried ?","Are you still trying ?","H
    ow long have you been trying ?"
2660 DATA " YOU DONT","Why should I","Wo
    uld you you be happier if I did","D
    o you","Why are you so sure that I
    don't"
2670 DATA " YOU CAN","You seem to think
    computers can do anything !","Are y
    ou sure that I can","Should I be ab
    le to","Why should I be able to"
2680 DATA " I HAVE NOT HAD","Would you b
    e happier if you had ?","Did you mi
    ss it ?","Why did that happen ?","H
    ow could that be ?"
2690 DATA " I HAVE NOTHING","How can you
     say that you have nothing","You mu
    st have something","Are you sure yo
    u have nothing","What does it mean
    to have nothing"
2700 DATA " IT WOULD","Would it really",
    "Why would it","How can you be sure
     that it would","Any good reasons w
    hy it would"
2710 DATA " CAN YOU","Perhaps you would
    like to be able to","Don't you beli
    eve that I can","Do you want me to
    be able to","Computers can't"
2720 DATA " I HAVE LOVED","What has made
     you love","Is it good to be in lov
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e ?","Do you enjoy loving","Is ther
e any real reason for loving"
2730 DATA "NGOVER","A good opportunity t
o give up the foul stuff !","Do you
 take any other dangerous drugs ?",
"Serve you right !!","Don't blame m
e !!"
2740 DATA "LOGIC","What makes you think
 you can talk about logic with a com
puter !","Humans don't know what lo
gic is !","Don't presume to talk ab
out logic to me !","What exactly is
 your interest in logic ?"
2750 DATA " I HAVE NOT","Would you like
 to have","Have you ever had","Shoul
d you have","What would you like to
 do with"
2760 DATA " I HAVE NO","Why is it that y
ou have no","Could it be that you r
eally do have","Would you be happie
r if you had ?","How could that be
 ?"
2770 DATA " YOU HAVE","What makes you th
ink that I have","Are you bothered
 that I have","Have I really","Shoul
dn't I have"
2780 DATA " I HAVE BEEN","How long have
 you been","Have you always been","W
hat does it mean to you to have bee
n","Why have you been"
2790 DATA " COULD YOU","Perhaps you woul
d like to be able to","Don't you be
lieve that I can","Do you want me t
o be able to","Computers can't"
2800 DATA " I HAVE HAD","How long have y
ou had","Have you always had","What
 does it mean to you to have had","
Is it normal to have had"
2810 DATA " I DO NOT","Why don't you","S
hould you","Did you ever","Could yo
u start to"
2820 DATA " YOU SEE","What do you want m
e to see ?","I'm not sure I want to
 see","How can I see","Why do you w
nat me to see"
2830 DATA " COMPUTERS ARE","Do you inclu
de me ?","AMSTRADS, too ?","We are
 not all","Don't get personal !"
2840 DATA " I HAVE THIS","Do you really
 want to get rid of this","Would you
 be lost without this","How long ha
ve you had this","What would you li
ke to do with this"
2850 DATA " SINCE I","How long has that
 been ?","What have you been up to s
ince then ?","When was it that you"
,"How long is it since you"
2860 DATA " WHAT DO YOU","I'm not sure w
hat I","What would you like me to",
"How can I tell you what I","Can yo
u guess what I"
2870 DATA " DO YOU EVER","No I never","Y
es I sometimes","Now and then !","W
hat makes you ask if I ever"
2880 DATA " WHY NOT","Why not indeed !",
"Can you think of five good reasons
 ?","Because it is bad for you !!",
"Really, what are you thinking of !
"
2890 DATA " WHY DO YOU","What makes you
 ask if I","Why does it annoy you ?"
,"Shouldn't I","We won't get anywhe
re if I don't"
2900 DATA " HOW DO YOU","With difficulty
 !","Are you sure that I","Do you d
oubt that I","What is the problem ?
"
2910 DATA " IF I HAD THE","What would yo
u do with the","Can I help you get
 the","Do you need the","Havn't you
 got the"
2920 DATA " CAN I","Perhaps you don't wa
nt to be able to","Should you want
 to be able to","Why couldn't you","
Human abilities are not my departme
nt !"
2930 DATA "SORRY","Don't apologise, plea
se !","Why are you apologising ?","
Apologies are not neccessary !","Wh
at feelings do you have when you ap
ologise ?"
2940 DATA " KNOW","Knowledge is power !"
,"We must learn something new every
 day !","What do you know ?","What
 makes you interested in knowledge ?
"
2950 DATA " YOURE","What is your reactio
n to my being","Why do you think th
at I'm","Is there any reason to thi
nk that I'm","So what if I'm"
2960 DATA "ROBOT","Have you had much to
 do with robots ?","What have robots
 got to do with it ?","Does the ide
a of robots frighten you ?","Why do
 you mention robots ?"
2970 DATA " DO YOU","Yes I","May I","No,
 I don't","Would you like me to"
2980 DATA " OFFER","What kind of offer ?
","Can I make you an offer","Would
 you offer","Offers are all very wel
l !"
2990 DATA " OFF","Should we be on","Woul
d you like to be off","How far off
 ?","A long way off"
3000 DATA "HELP","What kind of help ?","
Have you tried prayer lately ?","Is
 there anything a mere computer can
 do ?","Help yourself !!"
3010 DATA "DRINK","Take more water with
 it !","Give it up !","Moderation, o
r better still abstention !!","Have
 you a drink problem, then ?"
3020 DATA " WHY DONT YOU","Do you really
 believe I don't","Perhaps in good
 time I will","Do you want me to","W
hy would you want me to"
```

Thank you Dr. Eliza, we will return next month for our final consultation.

The Learning Centre

CP/M Explored - Part Three

by Shane Kelly

In this article we are going to look closely at one of the most useful programs supplied with CP/M - PIP.COM. It is a general purpose copying program that can copy from almost any logical device to any other logical device.

It will be no surprise then that PIP's full name is Peripheral Interchange Program which describes exactly what it does. Some of you will have only one disk drive and therefore cannot use PIP to copy across from one disc to another. You should use FILE-COPY.COM as stated in the DDI-1 manual.

Ensure that PIP.COM is present on drive a: and then go into CP/M. Type

the following:

```
PIP A:MYFILE.TXT=A:PIP.COM
```

The usual CP/M command path is followed. That is, a built in command called PIP is searched for (and not found), then the currently logged in disc is searched for a file with the name PIP and the extension COM. Once found PIP is loaded into the transient program area and entered at 100H. So far nothing different from the usual CP/M command path. Now something interesting happens - PIP picks up the rest of what we typed (`A:MYFILE.TXT=A:PIP.COM`) and acts on this tail of the command. All CP/M programs that have qualifiers after the name of the transient command pick up this 'command tail' from where it is put before the transient program is entered. Taking this command tail a piece at a time, on the left side of the equals sign we have a drive indentifier (A:) and a file name (MYFILE.TXT). This is the destination of anything on the right side of the equals sign which in this case is the file PIP.COM on drive A: You may guess what is happening, but I will spell it out anyway. PIP the program is copying itself on drive A: to a new file on drive A: called MYFILE.TXT. If you do a STAT of drive a: you will see that the file has really been copied and not just renamed to MYFILE.TXT. The exact same process is followed to give you a copy of a file on a drive other than the logged in drive. All that is necessary is to change the drive indentifier before the filename.In other words:

```
PIP B:COPYONB.TYP=A:ANYFILE.TYP
```

will copy a file to drive B: from drive A: under the name COPYONB.TYP. To copy a file with the same name to a different drive this form of the PIP command is used:-

```
PIP B:=A:ANYFILE.TYP
```

You may also specify wild cards in your file names like so:-

```
PIP B:A:* *
```

This will copy all files on A: to B: and PIP will print the name of each file as it is being copied across. This will probably be the major use of PIP in

any system and it will perform ably and well.....but PIP is capable of so much more!

To gain the greatest benefit from PIP it is necessary to understand the use of options. The options (or switches) are added after the filename to which they refer and are placed in square brackets []. The options are as follows:

[A] This option will only copy files that have been changed (or 'archived'). CP/M 'knows' which files have been changed by the use of a file attribute bit in the filename. For more information see your CP/M documentation.

[Dxx] This option will 'lop off' characters past column xx in a text file. I have never used this option but I suppose if you were in the habit of putting notes in the margins it would be useful!

[E] Visibly verify the file you are 'PIPping' by copying it to the console as it is being transferred. This is useful only for text files as anyone who has tried to look at a COM file on the console will tell you!

[F] You can waste an awful lot of printer paper when printing a file that has been formatted and includes form feeds. This option will remove form feeds from the file.

[Gxx] If you have a file in user 1 and you want a copy of it in user 0 then you may Get it from user xx. Log into user 0 and then use -

`PIP COPYIN0.TYP=COPYIN1.TYP[G1]`. This will get the file from user 1 and put a copy into user 0 under the name COPYIN.TYP.

[H] CP/M machine language programs go through intermediate stages during their transformation from source code to object code. One of these stages is known as Intel Hex Format. This option will ensure that the Intel Hex format will be maintained during the transfer.

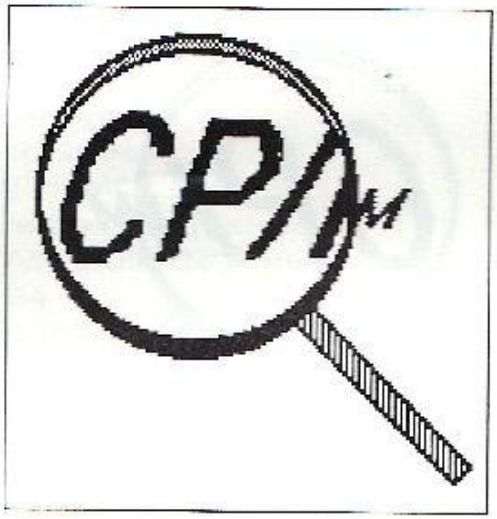
[I] This option turns on the H option and then ignores all 00h records which can, in some circumstances, be treated as the end of a file.

[L] This will automatically change all upper case letters to lower case. It is not an 'intelligent' routine and will change **all** letters to lower case.

[N] Insert a line number followed by a colon, starting at one and incrementing in ones. Line numbers are inserted at the start of the line following the carriage return and linefeed control characters.

[N2] As above, but will put in leading zero's and a tab character after each line number.

[O] Used for transferring object code files. This option forces PIP to ignore control Z characters which may appear as legitimate data in these files.



Control Z characters are used by CP/M to signal the end of a file.

[Pxx] Print xx lines and then do a page eject. In other words, set the page length to xx.

[Qs] Stop copying when the string 's' is found. When the string is entered, it should be terminated by a control Z character. This is most useful when you have a large text file that must be broken into parts so as to be manipulated more easily. Note that the string 's' must be an exact match.

[Ss] As above but start the copy from string 's'.

[Txx] This option expands tabs to every xx characters. Useful for formatting tables in your files.

[V] Opposite of [L]. In other words, translate lower case to upper case.

[V] This option will verify that the copy you have just made is the same as the original. I have never had a bad transfer with PIP that was not attributable to disc or drive failure, but for important files this option is a must.

[W] Most unfriendly option! Not to be used unless you are absolutely sure you wish to destroy the destination file that has been tagged write only.

[Z] I found this option most useful when dealing with WordStar files which usually have ASCII codes above the standard 127 buried in them. The Z option zero's bit 7 of these characters returning them to 'normal ASCII' and therefore "type-able" by CP/M on the console.

As you can see, not all the options are applicable to all types of files, and some are only useful to the machine code programmer. However, by judicious use it is possible to format a text file in almost any way you want. Now, let's see PIP at work!

On our CP/M master disc there is a file called DUMP.ASM. This is a text file that is the source code for the transient command DUMP.COM. Enter CP/M and then list DUMP.ASM on the screen using the type command. Note the format and the way it lists. We are going to radically change it.

Type PIP after the command prompt. You will be greeted by an asterisk. This is PIP's command line prompt and is the equivalent to the A> prompt. It shows PIP is waiting for your command. Now type this:

```
*A:DUMP.MOD=A:DUMP.ASM[L]
```

This takes the file DUMP.ASM and copies it under the name DUMP.MOD while automatically changing upper case to lower case. Check it by

entering TYPE DUMP.MOD on the console. Now try this, but make sure you have enough space on your disc before trying it:

```
*A:DUMP.BIG=A:DUMP.MOD[V]
,DUMP.ASM[D20]
```

You will end up with a file that is twice as large as DUMP.ASM, but is actually the same file twice, with one copy appended to the end of the other one, except that the characters after the 20th column in the second copy will be absent. You will see from this that it is possible to join files with PIP. One tip if you are using PIP to join assembly source code files together is to add a few extra carriage returns to the end of each file to ensure that your assembler will recognise the end of the line. If this is not done, you will find that (ASM especially) will give 'undefined label' errors that can be maddening to rectify.

As is always the case, experimentation is the best way to learn, but because PIP will destroy files if you are not careful, it is best to experiment on a disc that is reserved for that purpose.

I said at the beginning of this article that PIP is capable of transferring data from one logical device to another. So far we have just been using the discs. Now let's see what happens when we wish to transfer (or 'pip') a file to the printer. Ensure the printer is online and type this:

```
LST:A:DUMP.ASM
```

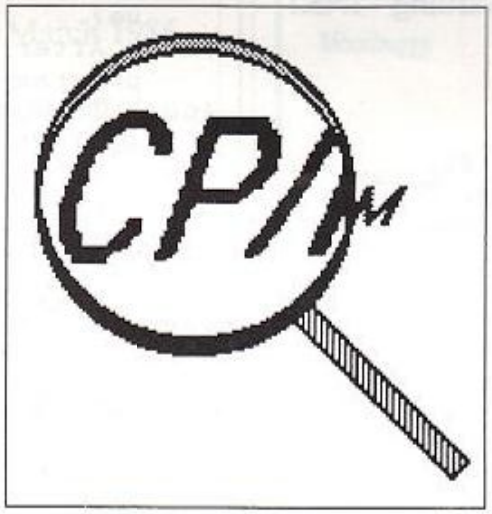
The printer springs into life printing a copy of DUMP.ASM onto paper. There may be some funny line spacings as PIP treats every carriage return/line feed pair as a new line command and is therefore apt to become confused when other control codes are present in the file. This is only an inconvenience and not a fatal bug. To cancel the printing use the control C command. Now let's try this:

```
*A:MYFILE.TYP=CON:
```

Nothing happens! There is not even an asterisk. If we think about this it will become clear that we have commanded PIP to take all console input and place it in a file called MYFILE.TYP, so PIP just patiently waits until something is typed and then places it in the file. As long as you type exactly what you want and make no mistakes, then this is a good way of entering small files directly to disc. If you do make mistakes, they will appear to be corrected on the screen but will not be corrected in the file as PIP will just place your editing commands into the file along with your text. We can also type a file directly to the printer. How? Try this:

```
*LST:=CON:
```

Same as before, nothing seems to



happen, and if you type a sentence you will not see anything on the printer until you type a carriage return. Then if you type another sentence, it will overwrite the first because a carriage return (to PIP) is simply a carriage return and you will need to send a line feed to get the printer carriage onto the next line. Inconvenient, but useful for p[utting titles etc. on long machine code dumps. To terminate this command use control Z which (to PIP) signifies the end of the file. You will be returned to the asterisk prompt of PIP's command line ready for the next command.

I plan to finish this article here as there is simply not enough room to go into everything that PIP is capable of and, as most of you will have only one disc drive and a printer, there is not a lot more that will be of practical use to you. One point is that Amstrad have now released an RS-232 interface that reportedly interfaces to CP/M. If that is the case, then it should be possible to PIP files to and from the RS-232 as if they simply came from the console or disc. The actual logical device is reportedly the TTY: and as this is bi-directional, there should be no problem sending or receiving files along this channel. As yet, I have not used this RS-232 interface so I cannot comment further.

As always, if you have any queries, write to me care of The Amstrad User and I will endeavour to answer them through this column. Remember, don't be afraid to experiment!

Two more "specials" from SCAUG

The S+C Amstrad User Group have developed two short pieces of software which should be of interest to readers. The first is a screen dump for people whose printers have a 1920 bit image mode facility. The second is an interesting border effect - known to many as "marching ants" - and in this case is exactly that! The program gives the illusion of ants (made up using the Symbol command) marching around the screen. Try your own characters and see what they look like. A program can be inserted after line 95 and, while running, the ants continue to march. A word of warning - INK!

SCREEN DUMP

```
 10 '     Another SCAUG SPECIAL.
 20 ' This program is another SCREEN D
    UMP for those of us who don't have
 30 'a 640 bit image mode facility wit
    h their printer.
 40 'Hopefully you do have a 1920 bit
    image mode, for this is what this
 50 'program is set up to use." Printe
    r codes set for Canon A-40 ).
 60 'To call the program type :" shift
     @ ) dump
 70 MODE 2:PRINT"Loading SCREEN DUMP d
    ata..."
 80 MEMORY 36999:cs=0:FOR mem=37000 TO
     37202
 90 READ dat
100 cs=cs+dat:POKE mem,dat
110 NEXT mem
120 READ check
130 IF cs<>check THEN PRINT"Error in
    DATA statements":END
140 CALL 37000
150 DATA 33,136,144,1,146,144,205,209
160 DATA 188,201,151,144,195,156,144
170 DATA 68,85,77,208,0,253,33,79,145
180 DATA 221,33,248,144,205,233,144
190 DATA 1,144,1,121,214,4,79,120,222
200 DATA 0,71,221,33,254,144,205,233
210 DATA 144,17,0,0,205,12,145,19,62
220 DATA 2,186,32,247,62,128,187,32
230 DATA 242,221,33,3,145,205,233,144
240 DATA 197,62,66,205,30,187,193,192
250 DATA 62,0,184,32,204,185,32,201
260 DATA 221,33,6,145,205,233,144,201
270 DATA 221,126,0,254,0,200,205,43
280 DATA 189,48,245,221,35,24,241
290 'Printer codes
300 DATA 27,51,12,0,0,0:'Set line feed
     to 1/8"
310 DATA 27,90,127,7,0:'Set 1920 bit i
    mage mode
320 DATA 13,10,0:'Carriage return & li
    ne feed
330 DATA 27,64,0,0,0,0:'Reset printer
    at end
340 DATA 197,213
350 DATA 96,105,229,205,240,187,254
360 DATA 0,40,8,253,203,0,198,253,203
370 DATA 0,206,225,209,213,35,35,205
380 DATA 240,187,254,0,40,8,253,203
390 DATA 0,214,253,203,0,222,253,126
400 DATA 0,205,43,189,253,126,0,205
410 DATA 43,189,253,126,0,205,43,189
420 DATA 48,236,253,54,0,0,209,193
430 DATA 201,0,0,0,0,24604
440 '    The printer codes can be chang
    ed but you must change the "cs val
    ue).
450 ' After changing the data run the
    program.
460 ' The data error message will be d
    isplayed on the screen.
470 ' Now simply  type PRINT cs."?cs)
    take note of the "new cs value).
480 ' Now change the DATA in line 420
    to read :data 201,0,0,0,0,"new cs
    value)
490 ' President : M.Elliott.
```

MARCHING ANTS

```
  1 'MARCHING ANTS BORDER
  2 'Another SCAUG special.
 10 SYMBOL 250,42,28,72,62,9,72,62,1
 20 SYMBOL 251,42,28,9,62,72,9,62,64
 30 SYMBOL 252,2,124,144,18,124,144,56,
    84
 40 SYMBOL 253,128,124,18,144,124,18,56
    ,84
 50 SYMBOL 254,0,36,73,74,127,74,73,144
 60 SYMBOL 255,0,144,73,74,127,74,73,36
 70 SYMBOL 240,36,146,82,254,82,146,9,0
 80 SYMBOL 241,9,146,82,254,82,146,36,0
 90 MODE 1:INK 3,24,1:INK 2,1,24
 95 '*** Note: Continue with normal pro
    gram after ( pen 1 ) ***
100 GOSUB 120:PEN 1:LOCATE 5,10:PRINT"W
    ell how about that.?";:INPUT"",ans$
101 LOCATE 10,20:PRINT ans$:FOR xx=1 TO
     20000:NEXT:END
120 '* Set up border
125 '*** across the top ***
130 y=1:FOR x=1 TO 39 STEP 2
140 PEN 2:LOCATE x,y:PRINT CHR$(254);
```

```
150 PEN 3:PRINT CHR$(255);
160 NEXT x
165 '*** Down the Right ***
170 x=40:FOR y=2 TO 24 STEP 2
180 PEN 2:LOCATE x,y:PRINT CHR$(253);
190 PEN 3:LOCATE x,y+1:PRINT CHR$(252);
200 NEXT y
205 '*** Across the Bottom ***
210 y=25:FOR x=39 TO 2 STEP -2
220 PEN 3:LOCATE x-1,y:PRINT CHR$(240);
230 PEN 2:PRINT CHR$(241);
240 NEXT x
245 '*** Sets up blocks across the scre
    en ***
250 y=16:FOR x=39 TO 2 STEP -2
260 PEN 2:LOCATE x-1,y:PRINT CHR$(219);
270 PEN 3:PRINT CHR$(219);
280 NEXT x
285 '*** Up the Left ***
290 x=1:FOR y=25 TO 2 STEP -2
300 PEN 3:LOCATE x,y-1:PRINT CHR$(250);
310 PEN 2:LOCATE x,y:PRINT CHR$(251);
320 NEXT y
330 RETURN
500 'President : M.Elliott.
```

DISC CATALOGUER - Issue 14 March 1986

In some copies of this issue, a full stop does not appear in line 220 of the above program. It should end as follows:

. . . .=LEFT$(2,8)+"."+MID$(2,9)

The program contained on the tape is correct.

HINTS for high score games

Battle for Midway	-	withhold attacks until enemy fleets are close by.
Codename Mat	-	Leave cruisers alone until you have destroyed all the other ships.
Combat Lynx	-	use mines to destroy enemy reinforcements.
Harrier Attack	-	Fly low over buildings and hold the bomb release button down.
Haunted Hedges	-	get the "Demon Ice-Axes" only when the Guardians are near. Try to collect all the gold coins in the bottom half of the screen first.
Hunter Killer	-	get close to enemy then fire.
Knight Lore	-	Many objects, including spheres and flashing stars do not like you when you are a were-wolf.
Minder	-	buy in bulk and always read description of goods carefully.
Moonbuggy	-	when jumping the double set of holes, start your jump 2-3 cms before the first hole. Hold the joystick/jump button down as well as the fire button.
Roland in the Caves	-	always jump right as your first move.
Roland goes Digging	-	always stay in a safe place and dig holes around you.
Roland in Time	-	practice well on cards 1,6 and 4 to give a sound base for a good score.
Sorcery	-	Ignore the 'nasties' on every screen unless they happen to be draining an excessive amount of energy. Test all cauldrons before sitting on them by sliding across the top and watching your energy level. Don't waste Shooting Stars and Sacks of Spells - always zap two nasties with each. Save the eight Sorcerors as quickly as possible and then use the time left to zap nasties and open as many doors and plugs as possible.
Sorcery +	-	take a crown into the 2nd chapter.
Star Commando	-	shoot accurately and keep a record of all sectors so as to avoid "no data available".
Survivor	-	shoot fast and conserve porcupine bombs.
Way of Exp. Fist	-	do some flying kicks until your foot passes the computer's blocking arm then quickly do a low punch, but don't try this until you achieve 2nd Dan.
Wild Bunch	-	expect the Marshall to travel freely between towns 2 and 4.
3-D Monster Chase	-	keys 1 and 2 are on the middle floor; 3,4 and 7 are on the bottom: 5 and 6 are on the top.

Adventurer's Attic

by Philip Riley

Do you find yourself sitting in front of your computer at 2 o'clock in the morning trying to get past some mind boggling problem? Have you been missing your meals lately? Have you forgotten what the rest of the family looks like? Do you suffer from lack of sleep?

If you answered 'yes' to one or two of the introductory questions, you are well on the way to becoming an avid adventurer. If you answered 'yes' to all of them, you have gone past the point of no return!

But would you believe there are some people who don't know what an adventure program is? That's terrible. Let me try to convert them to the cause by addressing this article to them in particular.

Most people who own a home computer will, at one time or another, play arcade games. These types of games involve speed and fast reflexes rather than thought and concentration.

Adventure games in most cases are totally the opposite. A normal text adventure will start by giving you a short story to read. This will probably take anything from one screen of text up to about three or four (sometimes this amount can be higher). The story will tell you who you are, what has been happening around you and what you must do. The story can be set in just about any location and in any time (past, present or future). Now the adventure begins for you.

A text adventure will give you a description of your present location and it may or may not tell you the directions in which you can move. You must then move from this location into another where you will be given a new location description. As you move around the game you will find useful objects that can be picked up and used in various ways. You will also be confronted with various problems and obstacles that you must pass before continuing. In some adventures you may also encounter other inhabitants who may wish to help you or kill you. I have mentioned some fairly standard examples of what you can expect, but you will find that most good adventure games are quite different from each other.

How do you tell the computer what to do? Well, most adventures follow the standard two word commands. For instance 'GO NORTH' or 'UNLOCK DOOR' or 'KILL GUARD'. The computer will then check your entered command with its vocabulary. If either of the words cannot be found or you are trying to do the wrong thing, nothing will be achieved. But if you have got your act together at, say, a locked door and you have previously picked up a key, you could try the command 'UNLOCK DOOR'. This may result in a response 'YOU UNLOCK THE DOOR WITH THE KEY'. On the other hand you may get 'YOU DON'T HAVE THE RIGHT KEY'. With the first response you will probably open up a whole new section of the adventure to explore. Of course, if you get the second response, you must set off again and try to find the other key or another way of passing the door.

I mentioned before that all good adventures are different. I have written a game that requires a three word input and I have played games where you can type in whole sentences. You will also come across some graphic adventures. These are normally text adventures with a picture of your present location on the screen. I don't like them for one reason - your imagination has far better graphics capabilities than the computer. I believe that it is far better to be given a brief description of a room and let your imagination do the

rest.

So there it is - a brief description of adventure games for the uninitiated. Naturally I could write pages about the differences between the games and the sorts of problems you could be faced with, but the best way to find out is to buy one and play it yourself. If you are like me you will be hooked as soon as you start.

SOME ANSWERS

Rod Anderson of Camperdown, Vic provides the following answer to Patrick Cahill's question published in last month's Adventurer's Attic concerning the code to the Treasure Chest in Bastow Manor.

The idea is to use the letters of the alphabet from A to Z and gather the code from these. Using the hint that Patrick had found earlier, ie. 'VI', start at the sixth letter which is 'F' and work your way from there. The code turns out to be 'FIBD'.

The answers to his other questions are that you cannot get onto the balcony at all (you don't need to) and you cannot open the drawer in the Study. From what I can remember, you have to move the lamp which reveals a button hidden behind a secret panel. If you press this, it opens a door back down beyond the pit full of snakes.

Good luck and watch out for the alarm once the chest is opened. It is advisable to have the piece of meat from the kitchen with you before you open the chest.

SOME QUESTIONS

We are still waiting for an answer to K.F. Lane who you will remember is stuck deep in the Southern Desert in the game "King Solomon's Mines - Part 1".

Anthony Eden of Kincumber in NSW has also ground to a halt, this time in the "Jewels of Babylon". Apparently he is in a cave past the pirate and parrot, has gone through a stone door and has reached a locked door. How can he get through?

THE AMSTRAD USER HALL OF FAME

GAME	SCORE/TIME	ACHIEVER
Battle for Midway	8 carriers:speed 1:level 3	Steve Alatakis
Beach Head	82400/9.5 mins	Stephen Elgar
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
Harrier Attack	207550/10 mins	Dean Stibbe
Haunted Hedges	28940/10 mins	M. Radnedge
Hunchback	90450/2 mins	Amy Poynton
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
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, along with your tips for playing the game to:
Amstrad Achievers, The Amstrad User, Suite 1, 245 Springvale Road, Glen Waverley, Victoria 3150.

Junior Jotters

LETTERS

I recently put the game GUNFIGHT into my 464 and altered it very simply to make a very basic one player game where the computer takes on the part of the Red man. I thought it may be useful for people who have nobody to play with.

The adjustments only make the computer move *(the red man)* up or down to follow the blue man and fire as soon as it is in line with him, but it worked out to be a fairly difficult opponent (if you don't keep cheating by just going down the screen shooting him in the legs).

```
170 IF lman>rman THEN lman=lman-one:GOSUB 240
190 IF lman<rman THEN lman=lman+one:GOSUB 240
210 IF rman=lman THEN GOSUB 360
201 z=((26-lman)*16)-12
202 IF z>192 AND z<240 THEN GOTO 220
```

Steven Hall, Ormeau, QLD

I would like to submit the following cartoon to be printed in The Amstrad User.

Chris Abberley, Kallangur, QLD

We've been waiting quite a while to find space for this cartoon. You see, our Editor is a family man and it really brought a smile to his normally stern countenance! (To save you looking it up - countenance means face).

SOFTWARE REVIEWS

by Rebecca Herbert

JET-BOOT JACK

This game would have to be just about the best I have ever played. You are Jet-Boot Jack, a space age jogger. You have to collect as many musical notes as you can from the Record Pressing Plant. Your greatest ambition is to have the biggest record collection in the world but, unfortunately, bugs and gremlins are trying to stop you. You jump on these nasties to kill them. You need fuel to power your jet-boots, so you have to crash into a pod. There are four pods to a screen and you can only use each pod five times. There are five skill levels to this game, each with ten levels of difficulty. In every screen there are slides, which go down or up to the floor below or above, and low ceilings that you have to duck under.

You can use either a joystick or keyboard, and it is very quick to load. The explanation on how to play is understandable, and the graphics and colour are good. This game is an English one. It's excellent. I would give it an 8.*

ROLAND AHOY

The main thing I like about this game is the colour and the graphics. To be truthful, they are about the only two things I like. For a start, if you don't own a joystick, the keyboard keys are not very good, they make your hands ache after a while.

The object of the game is for Roland to obtain treasure from 'Golden Harbour', and deposit it at 'Treasure Cove'. You must first go to 'Powder Quay' and collect cannonballs in order to destroy the bridge which protects 'Golden Harbour'.

You have four lives, and there are only a few dangers, like mines, spiders and fireballs. There is also a sea serpent which tries to get you.

This game has almost no ability to hold my interest at all. After about two games I start to get bored. There is hardly a sound, and I don't think this game is a good investment, even though it was No.18 on the 'Soft Top' in your magazine. I would rate this game as barely at 2.*

**We assume this score is out of maximum of ten.*

DIGITANT

from Brendan Piner

This is an Educational game in which you are required to help an Ant get back to his hole in the ground. His path is blocked by mathematical signs, each presenting a problem relating to that sign. If you answer the problem correctly he can eat the obstacle and continue to the next. It provides a score percentage at the end. The screen takes a while to load, so be patient.

How it Works

10-50	REM (Title, Date)
70-300	Set up screen
310-390	Print out Maths signs
400-1490	Movement of Ant
1500-1670	Play again option
1680-1850	Which equation to go to
1860-1930	Addition equation
1940-2010	Subtraction Equation
2020-2090	Multiplication Equation

2100-2170 Division Equation
2180-2410 Title
2420-2740 Instructions

```
 10 REM ********************************
 20 REM *** DIGIT ************ ANT ***
 30 REM ********************************
 40 REM * BY BRENDAN PINER (JAN 1986) *
 50 REM ********************************
 60 GOSUB 2180
 70 REM *** Set up screen ***
 80 R=0:W=0
 90 MODE 1:BORDER 5:INK 0,21:INK 1,0:IN
    K 2,5:INK 3,6:PAPER #0,0
100 WINDOW #1,1,30,22,25:PAPER #1,1:CLS
    #1:WINDOW #2,31,40,22,25:PAPER #2,3
    :CLS#2
110 PEN #1,2:LOCATE #1,8,2:PRINT #1,"Pr
    ess  [SPACE] "
120 PEN 1:PRINT STRING$(40,207):PRINT C
    HR$(24):LOCATE 16,1:PRINT"DIGIT ANT
    ":PRINT CHR$(24)
130 PEN 2:LOCATE 4,3:PRINT CHR$(222);:L
    OCATE 8,3:PRINT CHR$(223)
140 LOCATE 1,4:PRINT CHR$(222);:PRINT S
    TRING$(3,207);:LOCATE 8,4:PRINT CHR
    $(207)
150 LOCATE 1,5:PRINT CHR$(207):LOCATE 8
    ,5:PRINT CHR$(207)
160 LOCATE 1,6:PRINT CHR$(221):LOCATE 2
    ,6:PRINT STRING$(6,207):LOCATE 8,6:
    PRINT CHR$(220)
170 PEN 3:PRINT CHR$(22)+CHR$(1):LOCATE
     8,3:PRINT CHR$(221):PRINT CHR$(22)
    +CHR$(0)
180 LOCATE 9,3:PRINT STRING$(29,207)
190 LOCATE 1,3:PRINT STRING$(3,207):PRI
    NT CHR$(22)+CHR$(1):LOCATE 4,3:PRIN
    T CHR$(220):PRINT CHR$(22)+CHR$(0)
200 PRINT CHR$(22)+CHR$(1):LOCATE 1,4:P
    RINT CHR$(220):PRINT CHR$(22)+CHR$(
    0)
210 PRINT CHR$(22)+CHR$(1):LOCATE 1,6:P
    RINT CHR$(223):LOCATE 8,6:PRINT CHR
    $(222):PRINT CHR$(22)+CHR$(0)
220 LOCATE 12,5:PRINT STRING$(29,207)
230 LOCATE 1,7:PRINT STRING$(37,207)
240 LOCATE 4,9:PRINT STRING$(37,207)
250 LOCATE 1,11:PRINT STRING$(37,207)
260 LOCATE 4,13:PRINT STRING$(37,207)
270 LOCATE 1,15:PRINT STRING$(37,207)
280 LOCATE 4,17:PRINT STRING$(37,207)
290 LOCATE 1,19:PRINT STRING$(37,207)
300 LOCATE 1,21:PEN 1:PRINT STRING$(40,
    207)
310 REM *** MATHMATICAL SIGNS ***
320 PEN 1:PRINT CHR$(24):LOCATE 12,20:P
    RINT CHR$(43):PRINT CHR$(24)
330 PRINT CHR$(24):LOCATE 35,20:PRINT C
    HR$(120):LOCATE 32,18:PRINT CHR$(45
    ):LOCATE 10,18:PRINT CHR$(43):LOCAT
    E 14,16:PRINT CHR$(120):LOCATE 35,1
    6:PRINT CHR$(45):LOCATE 30,14:PRINT
     CHR$(43)
340 LOCATE 1,14:PRINT CHR$(45):LOCATE 2
    0,12:PRINT CHR$(120):LOCATE 32,10:P
    RINT CHR$(45):LOCATE 6,10:PRINT CHR
    $(43):LOCATE 20,8:PRINT CHR$(120):L
    OCATE 36,6:PRINT CHR$(43)
350 LOCATE 9,6:PRINT CHR$(172):LOCATE 2
    5,4:PRINT CHR$(172):LOCATE 16,2:PRI
    NT CHR$(120):PRINT CHR$(24)
360 h$=INKEY$:IF h$<>" " THEN 360
370 CLS#1
380 PEN #2,1:LOCATE #2,2,1:PRINT #2,"Ri
    ght";:PEN #2,0:PRINT#2,R
390 PEN #2,1:LOCATE #2,2,3:PRINT #2,"Wr
    ong";:PEN #2,0:PRINT#2,W
400 REM *** Movement of Ant ***
410 SYMBOL 254,36,72,120,244,120,48,0,0
    :SYMBOL 255,0,0,126,255,255,126,36,
    66:SYMBOL 253,72,36,30,47,30,12,0,0
420 ant$=CHR$(255)+CHR$(255)+CHR$(254)
430 y=20
440 FOR x=1 TO 37:LOCATE x,y:PEN 1:PRIN
    T " ";ant$
450 SOUND 1,230,1,7,0,0,1
460 FOR t=1 TO 150:NEXT
470 GOSUB 1680
480 NEXT
490 ant$=CHR$(253)+CHR$(255)+CHR$(255)
500 x=38:FOR y=19 TO 18 STEP-1:FOR k=20
     TO 19 STEP-1:LOCATE x,y:PEN 1:PRIN
    T ant$:LOCATE x,k:PRINT"    ";
510 SOUND 1,230,1,7,0,0,1
520 FOR t=1 TO 50:NEXT
530 GOSUB 1680
540 NEXT:NEXT
550 y=18:FOR x=37 TO 1 STEP-1:LOCATE x,
    y:PRINT ant$;" "
560 SOUND 1,230,1,7,0,0,1
570 FOR t=1 TO 150:NEXT
580 GOSUB 1680
590 NEXT
600 x=1:FOR y=17 TO 16 STEP-1:FOR k=18
    TO 17 STEP-1:LOCATE x,y:PRINT ant$:
    LOCATE x,k:PRINT"    ";
610 ant$=CHR$(255)+CHR$(255)+CHR$(254)
620 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 50
    :NEXT
630 GOSUB 1680
640 NEXT:NEXT
650 y=16:FOR x=1 TO 37:LOCATE x,y:PRINT
     " ";ant$
660 SOUND 1,230,1,7,0,0,1
670 FOR t=1 TO 150:NEXT
680 GOSUB 1680
690 NEXT
700 ant$=CHR$(253)+CHR$(255)+CHR$(255)
710 x=38:FOR y=15 TO 14 STEP-1:FOR k=16
     TO 15 STEP -1:LOCATE x,y:PRINT ant
    $:LOCATE x,k:PRINT"    ";
720 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 50
    :NEXT
730 GOSUB 1680
740 NEXT:NEXT
750 y=14:FOR x=37 TO 1 STEP-1:LOCATE x,
    y:PRINT ant$;" "
760 FOR t=1 TO 150:NEXT
```

```
770 SOUND 1,230,1,7,0,0,1
780 GOSUB 1680
790 NEXT
800 ant$=CHR$(255)+CHR$(255)+CHR$(254)
810 x=1:FOR y=13 TO 12 STEP-1:FOR k=14
    TO 13 STEP-1:LOCATE x,y:PRINT ant$:
    LOCATE x,k:PRINT"   ";
820 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 50
    :NEXT
830 GOSUB 1680
840 NEXT:NEXT
850 y=12:FOR x=1 TO 37:LOCATE x,y:PRINT
    " ";ant$
860 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 15
    0:NEXT
870 GOSUB 1680
880 NEXT
890 ant$=CHR$(253)+CHR$(255)+CHR$(255)
900 x=38:FOR y=11 TO 10 STEP-1:FOR k=12
     TO 11 STEP-1:LOCATE x,y:PRINT ant$
    :LOCATE x,k:PRINT"   ";
910 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 50
    :NEXT
920 GOSUB 1680
930 NEXT:NEXT
940 y=10:FOR x=37 TO 1 STEP-1:LOCATE x,
    y:PRINT ant$;" "
950 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 15
    0:NEXT
960 GOSUB 1680
970 NEXT
980 ant$=CHR$(255)+CHR$(255)+CHR$(254)

990 x=1:FOR y=9 TO 8 STEP -1:FOR k=10 T
    O 9 STEP-1:LOCATE x,y:PRINT ant$:LO
    CATE x,k:PRINT"   ";
1000 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 50
    :NEXT
1010 GOSUB 1680
1020 NEXT:NEXT
1030 y=8:FOR x=1 TO 37:LOCATE x,y:PRINT
    " ";ant$
1040 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 15
    0:NEXT
1050 GOSUB 1680
1060 NEXT
1070 ant$=CHR$(253)+CHR$(255)+CHR$(255)
1080 x=38:FOR y=7 TO 6 STEP-1:FOR k=8 TO
     7 STEP-1:LOCATE x,y:PRINT ant$:LOC
    ATE x,k:PRINT"   ";
1090 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 50
    :NEXT
1100 GOSUB 1680
1110 NEXT:NEXT
1120 y=6:FOR x=37 TO 9 STEP-1:LOCATE x,y
    :PRINT ant$;" "
1130 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 15
    0:NEXT
1140 GOSUB 1680
1150 NEXT
1160 ant$=CHR$(255)+CHR$(255)+CHR$(254)
1170 x=9:FOR y=5 TO 4 STEP-1:FOR k=6 TO
    5 STEP-1:LOCATE x,y:PRINT ant$:LOCA
    TE x,k:PRINT"   ";
1180 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 50
    :NEXT
1190 GOSUB 1680
1200 NEXT:NEXT
1210 y=4:FOR x=9 TO 37:LOCATE x,y:PRINT
    " ";ant$
1220 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 15
    0:NEXT
1230 GOSUB 1680
1240 NEXT
1250 ant$=CHR$(253)+CHR$(255)+CHR$(255)
1260 x=38:FOR y=3 TO 2 STEP-1:FOR k=4 TO
     3 STEP-1:LOCATE x,y:PRINT ant$:LOC
    ATE x,k:PRINT"   ";
1270 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 50
    :NEXT
1280 GOSUB 1680
1290 NEXT:NEXT
1300 y=2:FOR x=37 TO 5 STEP-1:LOCATE x,y
    :PRINT ant$;" "
1310 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 12
    0:NEXT
1320 GOSUB 1680
1330 NEXT
1340 x=5:FOR y=3 TO 5:k=y-1:LOCATE x,y:P
    RINT ant$:LOCATE x,k:PRINT"   ";
1350 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 50
    :NEXT
1360 GOSUB 1680
1370 NEXT
1380 y=5:FOR x=4 TO 2 STEP -1:LOCATE x,y
    :PRINT ant$;" "
1390 SOUND 1,230,1,7,0,0,1:FOR t=1 TO 50
    :NEXT
1400 GOSUB 1680
1410 NEXT
1420 FOR m=150 TO 50 STEP -1
1430 SOUND 1,m,3,15,0,0,0
1440 NEXT
1450 FOR m=50 TO 150
1460 SOUND 1,m,3,15,0,0,0
1470 NEXT
1480 ENV 1,100,122,1
1490 SOUND 1,239,0,15,1,0,0
1500 REM *** Play again ? ***
1510 BORDER 0:INK 0,0:PAPER 0:INK 1,26:P
    EN 1:CLS
1520 LOCATE 1,1:PRINT"You got"r"out of 1
    6 right"
1530 p=r/16*100
1540 LOCATE 1,2:PRINT "Which is";ROUND (
    p,0)"%"
1550 IF p<50 THEN 1600
1560 IF p<70 THEN 1610
1570 IF p<93 THEN 1620
1580 IF p<100 THEN 1630
1590 IF p=100 THEN 1640
1600 LOCATE 1,3:PRINT"You are slack, bet
    ter practise  more  on your arithme
    tic.":GOTO 1650
1610 LOCATE 1,3:PRINT"Could do better!":
    GOTO 1650
1620 LOCATE 1,3:PRINT" Well Done!!!":GOT
    O 1650
1630 LOCATE 1,3:PRINT"Well done!, all mo
    st a perfect score!!":GOTO 1650
```

```
1640 LOCATE 1,3:PRINT"That's a perfect s
     core!"
1650 LOCATE 1,5:INPUT"Would you like to
     play again ";a$
1660 IF a$="y" OR a$="Y" THEN 80 ELSE IF
      a$="n" OR a$="N" THEN  1670 ELSE 1
     650
1670 CLS:PRINT"bye-bye":END
1680 REM *** WHICH EQUATION ? ***
1690 IF x=8 AND y=20 THEN GOSUB 1860
1700 IF x=31 AND y=20 THEN GOSUB 2020
1710 IF x=33 AND y=18 THEN GOSUB 1940
1720 IF x=11 AND y=18 THEN GOSUB 1860
1730 IF x=10 AND y=16 THEN GOSUB 2020
1740 IF x=31 AND y=16 THEN GOSUB 1940
1750 IF x=31 AND y=14 THEN GOSUB 1860
1760 IF x=2 AND y=14 THEN GOSUB 1940
1770 IF x=16 AND y=12 THEN GOSUB 2020
1780 IF x=33 AND y=10 THEN GOSUB 1940
1790 IF x=7 AND y=10 THEN GOSUB 1860
1800 IF x=16 AND y=8 THEN GOSUB 2020
1810 IF x=37 AND y=6 THEN GOSUB 1860
1820 IF x=10 AND y=6 THEN GOSUB 2100
1830 IF x=21 AND y=4 THEN GOSUB 2100
1840 IF x=17 AND y=2 THEN GOSUB 2020
1850 RETURN
1860 REM *** ADDITION EQUATION ***
1870 CLS#1:RANDOMIZE TIME
1880 G=INT(RND*100)+1:H=INT(RND*100)+1
1890 LOCATE #1,2,2:PEN#1,2:PRINT #1,G"+"
     H
1900 LOCATE #1,2,4:INPUT#1,"ANSWER";A
1910 IF A<>G+H THEN SOUND 1,4000,50,7:LO
     CATE #1,12,3:PRINT#1,"WRONG!":FOR T
     =1 TO 1000:NEXT:CLS#1:LOCATE #1,6,2
     :PRINT#1,"THE ANSWER IS";G+H:W=W+1:
     LOCATE #2,7,3:PEN #2,0:PRINT #2,W
1920 IF A=G+H THEN SOUND 1,60,40:LOCATE
     #1,13,3:PRINT#1,"CORRECT!":FOR T=1
     TO 1000:NEXT::R=R+1:LOCATE #2,7,1:P
     EN #2,0:PRINT #2,R
1930 FOR T=1 TO 2000:NEXT:CLS#1:RETURN
1940 REM *** SUBTRACTION EQUATION ***
1950 CLS#1:RANDOMIZE TIME
1960 G=INT(RND*100)+1:H=INT(RND*100)+1
1970 LOCATE #1,2,2:PEN#1,2:PRINT #1,G"-"
     H
1980 LOCATE #1,2,4:INPUT#1,"ANSWER";A
1990 IF A<>G-H THEN SOUND 1,4000,50,7:LO
     CATE #1,12,3:PRINT#1,"WRONG!":FOR T
     =1 TO 1000:NEXT:CLS#1:LOCATE #1,6,2
     :PRINT#1,"THE ANSWER IS ";G-H:W=W+1
     :LOCATE #2,7,3:PEN #2,0:PRINT #2,W
2000 IF A=G-H THEN SOUND 1,60,40:LOCATE
     #1,13,3:PRINT#1,"CORRECT!":FOR T=1
     TO 1000:NEXT::R=R+1:LOCATE #2,7,1:P
     EN #2,0:PRINT #2,R
2010 FOR T=1 TO 2000:NEXT:CLS#1:RETURN
2020 REM *** TIMES EQUATION ***
2030 CLS#1:RANDOMIZE TIME
2040 G=INT(RND*12)+1:H=INT(RND*12)+1
2050 LOCATE #1,2,2:PEN#1,2:PRINT #1,G"x"
     H
2060 LOCATE #1,2,4:INPUT#1,"ANSWER";A
2070 IF A<>G*H THEN SOUND 1,4000,50,7:LO
     CATE #1,12,3:PRINT#1,"WRONG!":FOR T
     =1 TO 1000:NEXT:CLS#1:LOCATE #1,6,2
     :PRINT#1,"THE ANSWER IS";G*H:W=W+1:
     LOCATE #2,7,3:PEN #2,0:PRINT #2,W
2080 IF A=G*H THEN SOUND 1,60,40:LOCATE
     #1,13,3:PRINT#1,"CORRECT!":FOR T=1
     TO 1000:NEXT::R=R+1:LOCATE #2,7,1:P
     EN #2,0:PRINT #2,R
2090 FOR T=1 TO 2000:NEXT:CLS#1:RETURN
2100 REM *** DIVISION EQUATION ***
2110 CLS#1:RANDOMIZE TIME
2120 G=INT(RND*100)+1:H=INT(RND*9)+1
2130 LOCATE #1,2,2:PEN#1,2:PRINT #1,G CH
     R$(172) H
2140 LOCATE #1,2,4:INPUT#1,"ANSWER";A
2150 IF A<>ROUND(G/H,1) THEN SOUND 1,400
     0,50,7:LOCATE #1,12,3:PRINT#1,"WRON
     G!":FOR T=1 TO 1000:NEXT:CLS#1:LOCA
     TE #1,6,2:PRINT#1,"THE ANSWER IS";R
     OUND(G/H,1):W=W+1:LOCATE #2,7,3:PEN
      #2,0:PRINT #2,W
2160 IF A=ROUND(G/H,1) THEN SOUND 1,60,4
     0:LOCATE #1,13,3:PRINT#1,"CORRECT!"
     :FOR T=1 TO 1000:NEXT::R=R+1:LOCATE
      #2,7,1:PEN #2,0:PRINT #2,R
2170 FOR T=1 TO 2000:NEXT:CLS#1:RETURN
2180 REM *** Title  ***
2190 MODE 1:BORDER 12:INK 0,12:PAPER 0:I
     NK 1,12:INK 2,0:INK 3,12:CLS
2200 PEN 2:LOCATE 15,25:PRINT" Please Wa
     it!"
2210 FOR a=1 TO 360 STEP 2:PLOT 320,200,
     2:DEG:DRAW 320+40*SIN(a),200+30*COS
     (a),2:NEXT
2220 FOR a=1 TO 360 STEP 2:PLOT 390,200,
     2:DEG:DRAW 390+40*SIN(a),200+30*COS
     (a),2:NEXT
2230 FOR a=1 TO 360 STEP 5:PLOT 260,230:
     DEG:PLOT 260+30*SIN(a),230+30*COS(a
     ),2:NEXT:PLOT 260,230,0
2240 PLOT 315,170,2:DRAW 305,140:DRAW 29
     0,140:PLOT 325,170,2:DRAW 335,140:D
     RAW 345,140
2250 PLOT 385,170,2:DRAW 375,140:DRAW 36
     5,140:PLOT 395,170,2:DRAW 405,140:D
     RAW 415,140
2260 PLOT 255,220,2:DRAW 238,215:PLOT 25
     0,240:DRAW 248,240:DRAW 248,238:DRA
     W 250,238:DRAW 250,240
2270 PLOT 255,257,2:DRAW 245,297:FOR a=1
      TO 360 STEP 10:DEG:PLOT 245,297:DR
     AW 245+5*SIN(a),297+5*COS(a),2:NEXT
2280 PLOT 265,257,2:DRAW 275,297:FOR a=1
      TO 360 STEP 10:DEG:PLOT 275,297:DR
     AW 275+5*SIN(a),297+5*COS(a),2:NEXT

2290 PEN 3:LOCATE 1,25:PRINT"  Digit Ant
     ";
2300 FOR x%=0 TO 200
2310 FOR y%=0 TO 16 STEP 2
2320 IF TEST(x%,y%) THEN PLOT 11+x%*3,34
     8+y%*3,1:PLOT 11+x%*3,350+y%*3,1:PL
     OT 11+x%*3,352+y%*3,1:PLOT 11+x%*3,
     354+y%*3,3
2330 NEXT:NEXT
```

```
2340 LOCATE 1,25:PEN 3:PRINT " Brendan P
     iner":PEN 3
2350 FOR x%=0 TO 230
2360 FOR y%=0 TO 16 STEP 2
2370 IF TEST (x%,y%) THEN PLOT x%*2.5+15
     ,52+y%*3,3:PLOT x%*2.5+15,54+y%*3,3
     :PLOT x%*2.5+15,56+y%*3,3:PLOT x%*2
     .5+15,58+y%*3,1
2380 NEXT:NEXT
2390 LOCATE 1,25:PRINT SPC(30):LOCATE 15
     ,25:PRINT SPC(15)
2400 INK 1,25:INK 3,26:LOCATE 11,24:PEN
     3:PRINT "Press [SPACE] to play"
2410 a$=INKEY$:IF a$<>" " THEN 2410
2420 REM ** Instructions **
2430 INK 1,25
2440 FOR x=0 TO 320 STEP 2
2450 MOVE x,0:DRAW x,400,1
2460 MOVE 640-x,0:DRAW 640-x,400,1
2470 NEXT
2480 INK 0,1:PAPER 0
2490 FOR x=320 TO 0 STEP-2
2500 MOVE x,0:DRAW x,400,0
2510 MOVE 640-x,0:DRAW 640-x,400,0
2520 NEXT
2530 BORDER 0:MODE 1:INK 1,24:INK 2,26:P
     EN 2
2540 LOCATE 12,2:PRINT"** INSTRUCTIONS *
     *":PRINT:PRINT:PEN 1
2550 PRINT" In this game you have to hel
     p the  ANT  get back to his hole in
      the ground."
2560 PRINT:PRINT
2570 PRINT" What you have to do is,as th
     e ANT moves along he comes to mathe
     matical signs,  but before he can
     eat the sign and move along,you mus
     t work out a maths problem accordin
     g to the sign."
2580 PRINT:PRINT" When  working  out Div
     ision round of to one decimal place
     ."
2590 PRINT" How many problems you get ri
     ght is kept and how many problems y
     ou get wrong is  kept."
2600 PRINT
2610 PRINT" The  best  score  is  my sco
     re.Which is 100% or 16/16. Mind  yo
     u  I  used  a    calculator. Good L
     uck!"
2620 PRINT:PRINT"          Press Space to
     Start."
2630 s$=INKEY$:IF s$<>" " THEN 2630
2640 INK 3,9
2650 FOR x=0 TO 200 STEP 2
2660 MOVE 0,x:DRAW 640,x,3
2670 MOVE 0,400-x:DRAW 640,400-x,3
2680 NEXT
2690 INK 0,21:PAPER 0
2700 FOR x=200 TO 0 STEP-2
2710 MOVE 0,x:DRAW 640,x,0
2720 MOVE 0,400-x:DRAW 640,400-x,0
2730 NEXT
2740 RETURN
```

Amstrads bite into Apples

from a conversation with Barry Drew

A few years ago, St. John's College bought some twelve computers (Apples) for the benefit of the students general studies. However, last year (1985) it was decided to offer, for the first, time Computer Science as a year eleven subject. My first task on joining the college was to purchase an extra six Apple compatible computers to bring the total to a class set of eighteen. With this larger quantity of computer equipment we wer then in a position to offer Computer Science for HSC in year 12.

During the course of the year, it became obvious that we needed to upgrade or replace some of our older computers because they were getting a little out of date. Also, the Apple is fairly limited as far as the BASIC is concerned - the syllabus requires a structured BASIC which the Apple software doesn't provide.

The Amstrad almost satisfies the syllabus requirements especially with its WHILE/WEND command, IF/THEN/ELSE etc. However, since then, the examiners have added to the syllabus the statement that any language that calls a routine by a line number rather than a name is not considered suitable. So we are now in the awkward position where BASIC, it seems, is no longer suitable for year 12. This is forcing us to use PASCAL, but the Amstrad supports this so we should be able to cope. There is a structured version of BASIC available on the Apples which gets around the new edict, but I don't really want to go back to using Apples.

The students certainly enjoy the subject. As far as the Amstrad is concerned, they like the colours and the normal screen (gold on blue) is much more appealing. They also find they can program the colours much more easily (on the Apple it is very difficult and the quality of the colour is not good). However, they do find the commands INK, PEN and PAPER are very confusing - I have a lot of trouble with those myself. For example, you start off by defining your inks, then you refer to a paper as an ink - this is not an obvious concept!

The other obvious reason we chose Amstrads is because they were the cheapest. We currently have five CPC6128's with plans to purchase more to replace the Apples. We also have six CPC464's. The computers are available for all classes from Year 7 to Year 12.

It is possible that a PCW8256 may be purchased in the future for the 'Secretarial Studies' subject.

We do a fair amount of development outside the syllabus and the computer room is always heavily booked by students. There are plans to expand the use of the resident machines into other areas, word processing for example.

As far as software is concerned, it is a little early to make any comments regarding compatibility between the 464's and 6128's as we have only recently purchased the latter machines. But we have found that the "Typing Wizard" (Gameworks) program doesn't run on the 6128. There may be more problems - we don't know yet. We also had a problem with TASWORD - it wouldn't do a mailmerge - but the latest version does.

Naturally, we don't tolerate the playing of games, especially by our year 12 students who can't afford the time. They are busy with their written assignments. They have to write up two site visits, one case study and somewhere between 4 and 7 assignments - all of which have to be written up with Word Processing Software. This kind of output is advantageous when it comes to examinations, so their time is very heavily committed doing just that. Year 11 students are similarly affected.

Pupils in Years 8 to 10 are normally allocated one period per week for six months. That's not much but at least it is an introduction to computers. We generally spend the first period or so teaching them how to switch on the machines, the next two are spent on LOGO, the next on a very fast introduction to BASIC including the general commands with the idea of aiming towards the FOR loop. The final two lessons are spent trying to set up a screen design.

I suspect that Computer Science, as a subject, will grow in numbers (in terms of students) and this may necessitate an additional computer room. It is possible that more subjects will want to use the computers for word processing, or any other relevant pieces of software. It also looks as though some of the larger commercial software packages such as dBaseII and Wordstar will become available soon. This may cause the administrative people to use the computers more.

In talking with a number of working professionals, (draughtsmen, engineers etc.) I find that they are very anxious that pupils be introduced to and become familiar with computers and even with some of the packages which are available. Unfortunately this is an expensive exercise for schools to undertake.

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