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Hoky Poky!

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ED'S NOTES

HOT STUFF FROM THE EDITOR'S DESK!

Hello dear members,

Sorry for the delay, but I hope it was worth it. As you can see I have had
a bit of a change around, a different cover, and Ed's Notes header, which
were done by Ronald de Bruin of Holland, cheers Ron. The cover was his
entry for the Cover Comp. Mentioning comps, theres one this issue, details
below.

Well I've done what many people said would have been impossible, I've kept
the Magazine running for One Year, so Happy Birthday C16/C116/+4 computing
Monthly, and many thanks to those members that wish the same. Also many
thanks to 98% of members that Re-Subscribed, unfortunetly we lost Graham
Terry of Scunthorpe, because he has bought a C64, and I wished him all the
best and thanked him for being with us. Also we lost Clair Deamer, yes,
the only Girl/Lady C16/+4 owner we had, she has bought an Amiga, and I wish
her well with it.

Right down to the nitty gritty. I've devised a payment system that could
speed up the time for you to get the mag, it only applies to monthly
subscribers, here goes. The system is that you pay each month £1 as usual,
but this £1 is for the issue after, ie, your paying one month in advance
for each magazine. So to get the system running smoothly please send £2
for the May and June issues, and in the may issue you then send one pound
for the July issue, then when you get the June issue you then pay for the
August issue, so I'm getting the money in advance, which will speed up the
processing of mags no end, so please send £2 for May and June and we will
so how it goes from there.

Last month, ah yes, a bit of a cock up if you ask me, the first month that
I put in an Index, and it goes wrong, sorry about that folks, I got mixed
up when making the master copy, this issue is perfect though (touch wood).

COMPETITION

Right all I want you to do is write a program in either Machine Code or
Basic, it can be long or short, Display graphics, play music, do
mathematical calculations, I don't care, but send them in on either Tape or
Disk and with a Written/Printed copy of the program, and instructions of
what the program does and if possible a description of what part of the
program does what, the closing date is September 1st 1990, so you've got
loads time, so getting typing and entering, multiple entries are allowed.
Well whats the prize I hear you ask, well the lucky winner gets 6 issues of
the magazine absolutly free, not an offer to be refused by some people!!

Send entries to:- Roy Robinson (COMP 2), 112 Cliff Road, HORNSEA,
N.HUMBERSIDE, HU18 1JE. Tel 0964-534611

I must remind you all, that I can not send any disks/tapes back unless the
correct postage stamps are enclosed along with a note saying you want them
back, this is because it gets expensive!!!!

One last note, I've stopped printing the members list at the moment,
because I'm re-organising the database, maybe in June it will be
continued!!

Bye !

QUIXAVER EXPLAINED
NEXT MONTH!

Dear Roy,

The program below is my version of a 'MOIRE', and maybe the info might be of use to somebody.

Peter Appleby, NOTTS.

P.S I had the misfortune on my C16, that the 'HOT PLUG' on the Power Supply Unit lead into the computer became fractured. The computer cost me £10.35 to repair, (what a ripoff). So warn all the members to look after there P.S.U's. By the way if it should happen to me again can anybody do it cheaper?

Thanks for the prog Peter, you definetly were RIPPED OFF. The plug on my C16 PSU has gone mnay times and I've repaired it myself for about £2 or less in all, if it happens again contact me, the same applies to other members, if anything happens to your C16/+4 contact me and I'll try and repair it, like I did with Kevin Williams +4, I replaced the computers RAM for new RAM and he was please that it worked afterwards (NOT AS PLEASED AS I WAS THOUGH, PHEEW!!). So remember don't pay repair prices until you've contacted me, you could save some money!!

```
10 COLOR 4, 1, 0: COLOR 0, 1, 0: COLOR 1, 4, 7
15 GRAPHIC 1, 1
20 FOR S=0 TO 320 STEP +3
30 DRAW 1, S, 0 TO 160, 100
40 NEXT S
50 FOR T=0 TO 200 STEP +3
60 DRAW 1, 160, 100 TO 320, T
70 NEXT T
80 FOR E=320 TO 0 STEP -3
90 DRAW 1, 160, 100 TO E, 200
100 NEXT E
110 FOR V=200 TO 0 STEP -3
120 DRAW 1, 160, 100 TO 0, V
130 NEXT V
140 CHAR 1, 14, 24, "PRESS SPACE BAR", 1
150 GET A$: IF A$="" THEN 150
160 GRAPHIC3, 0
170 GET A$: IF A$="" THEN 170
180 GRAPHIC CLR
210 GRAPHIC 1, 1
220 X=1: Y=318
230 FOR X=1 TO 318 STEP +5
240 DRAW 1, X, 1 TO 318, 199
250 NEXT X
260 T=318: P=199
270 FOR T=318 TO 1 STEP -5
280 DRAW 1, T, 199 TO 1, 1
290 CHAR 1, 14, 24, "PRESS SPACE BAR"
300 GET A$: IF A$="" THEN 300
310 A=INT(16*RND(1))+1
320 B=INT(8*RND(1))
330 COLOR 1, A, B
340 NEXT T
350 END
```

3

Dear Roy,
I'm sending you a program that was originally for the Oric. Line 150 can
be used in the different functions, hope its of use to someone.

Peter Appleby, NOTTS.
This is a very nice prog, Pete, many thanks, please send more!! (ED)

```
0 REM *********
1 REM *3D PLOT*
2 REM *********
3 REM
10 GRAPHIC 2,1
20 COLOR 0,1:COLOR 1,2
30 H=300: V=199
40 X1=H/2: X2=X1*X1: Y1=V/2: Y2=V/4
100 FOR XO TO X1
110 X4=X*X: L=-Y1
120 A=SQR(X2-X4)
130 FOR I=-A TO A STEP V/10
140 R=SQR(X4+I*I)/X1
150 F=(1-R)*SIN(18*R)
160 Y=I/5+F*Y2
170 IF Y<=L THEN 200
180 L=Y: Y=Y1-Y
190 DRAW 1,X1-X,Y: DRAW 1,X1+X,Y
200 NEXT I: NEXT X
210 END
```

BELOW ARE DIFFERENT VARIATIONS TO BE TRIED BY REPLACING LINE 150 WITH:-
150 F=(R-1)*COS(8*R), 150 F=(R-1)*EXP(R/2), 150 F=(1-R)*EXP(COS(12*R))
150 F=(1-R)*EXP(SIN(12*R))

Dear Roy,
Enclosed find the routine for Bleeping Keys. All keys except SHIFT,
CONTROL will bleep. I hope it is of some use to somebody.
Best wishes, Harry Hooyen, WOLVERHAMPTON.
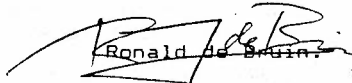
```
0660   JSR $FF9F        KEY BLEEPER
0663   LDA $EF          ENTER IN MACHINE MONITOR
0665   BEQ $0686        WHEN ENTERED GO BACK INTO BASIC
0667   LDA #$50         (type X) RETURN.  TO ACTIVATE:
0669   STA $FF0E        POKE 786,96: POKE 787,6 (RETURN)
066C   LDA $FF12
066F   ORA #$03         ALL KEYS WILL BLEEP.  IF AFTER RESETTING
0671   STA $FF12        COMPUTER TYPE IN THE POKES AGAIN.
0674   LDA #$FD
0676   STA $04FC        TO SAVE TYPE,
0679   LDA #$FF         S"KEY BEEPER",01,0660,0689. 08 FOR DISK.
067B   STA $04FE
067E   LDA $FF11
0681   ORA #$18
0683   STA $FF11
0686   JMP $CE42
0689   ???
```

Dear Roy,

As you asked in the mag, here is my translation of te advertisement.
I did my best to translate it as good as possible, although some
words made me puzzle. At school we donot learn all those computer
term, neither in English nor in German. Also in dictionairies most
of these terms are not to found. Anyway this is mainly what it's all
about, I think. Greetings,

Ronald de Bruin.

TRANSLATION OF THE GERMAN "PAGE-SETTER" ADVERTISEMENT:

At last there is a fully operational Desk Top Publishing program for
the Plus/4, allowing you to create an entire page directly on screen,
using both characters and graphic artworks of your own choice.
Unlike other DTP-programs for the Plus/4, it has WYSIWYD-facilities
(What You See Is What You Do).
Apart from the usual graphic functions, the program offers a possi-
bility that others programs cannot: step by step enlargement and
reduction of the pictures!

-Various forms of type-setting:
 in blocks, irregular or centered.
-Graphics can be placed where you
 want them.
-Border- and column-facilities.
-Free text-flow around pictures.

            -Multi-functional drawing-editor.
            -Pixel-type drawing or line-,
             box-, window-, circle-, ellipse-
             and polygonal-drawing.
            -Various block-functions.
            -Copy- erase- mirror- and switch-
             functions.
            -Enlargement and reduction functions.

                        -Mobile magnifying-function.
                        -Entire page view
                        -Printing facilities for MPS-803,
                         Epson and compatibles printers.
                        (*should also run on MPS-801, 1200
                         and 1230, Seikosha VC-types,
                         General Electric and Citizen 120D)
                        -2 drive operation facilities.
                        -Directory-functions.
                        -Graphic reduction facilities.

The program is fully in Machine Code. Of course a manual is included
(Only in German!). Program-disk contains several character sets and
graphic demos.
Other character sets and a tool for creating your own characters will
be available soon, as well as a wedge for use with the CAD/DTP-programs
"Create Page!" and "Botticelli".

DISK ONLY
(REGISTERED V COPY-PROTECTED)

5

Dear Roy,
  Here is the book I promised. Besides that I did have a go
at the translation for the Page Setter (incidentaly it is in
german). Sorry I could not make out the meaning of three
words: 'Flattersatz', 'Komprimierung' and 'Botticelli'.
              PAGE SETTER.
  At last here are one useful programme for Plus/4, that can
be used to put together one full page of text with charming
script   and   inbuilt graphics. Not as programmes until now,
every move can be instantly seen on the screen. Even
complete overwiew of the page can allways be obtained.
Besides next to many usual graphic functions, there is also
a possibility included, that no other programme can show for
the small Plus/4, t.i. enlarge and reduce graphics in small
steps.
  Direct text input with any punctuation marks as required.
  Blockletters, Flattersatz (could be italics) or centring.
  Inclusion of nice graphics.
  Freely definable margins and multicolumn tabulating.
  Easy picture transfer.
  Multifunction graphic editor.
  Pixel drawing or drawing of lines, squares, circles,
elipses and multicornered figures.
  Many inbuilt functions: Copy, erase, mirror, turn, reduce,
enlarge.
  Moving a magnifier over full page.
  Complete wiew of completed page.
  Print with MPS 803 or 6313 printer in Epsom mode.
  Two-floppy operation possible.
  Directory function.
  'Komprimierung' (don't know this) of graphics.
  The programme is fully in Machine Code. Of   course,
instructions are included, to enable use of all functions.
On the diskette are several script samples and same graphics
demos.
  In preparation: Furher scripts, Tool for defining own
characters, interface to create page and 'Botticelli' (could
possibly be spreadsheet?).

  Hope it's of any use. This is the best I could manage.
Maybe Mr R. de Bruin can do better? Hope, that You know the
name and address of the advertiser. Also price of the
product. Seems to be a good utility.

  V.Berzins
  193 Gorsemoor Rd.   *Bill.*
  Heath Hayes
  Cannock
  WS2 5HR

  P.S.For next Year count me in as a yearly subsciber (please
send form with the next mag.)

MR PHILIP SAUNDERS
C16 POKES
90 Oakbank
Fieldway
New Addington
Croydon
Surrey
CR0-9EF

PLEASE READ !

Wednesday 9th May 1990

Dear Roy Robinson,

Did you manage to get my advertisment in the bumber issue.   Also
what is the progress on the following:-

1) C16 BOOK RENTAL   *(It's getting there , ED).*
2) C16 P.D. SOFTWARE

On a different view a friend of mine <u>Mr</u> <u>Darren</u> <u>Martin</u> <u>Broad</u> read
your   review   on   <u>TASKFORCE</u>.   He has asked me   if   you   and   your
readers.   Can come up with a concept and graphics for a game   by
JUNE   1990 (if poss).   And get alot of response he will   consider
coming out of retirement to do the programming.

If   for any reason you don't believe me he can be contact at   the
following address/telephone number:-

Mr Darren Martin Broad
Calle Artesania
No3 2oI
37007
Salamanca
SPAIN .

or <u>Tel</u> <u>:</u> <u>010</u> <u>34</u> <u>23</u> 23 22 <u>34</u>.   But please phone at   11pm English
Time   to   be sure of contacting him. But note he   is   only
staying in spain until the end of MAY 90.

Any response should be sent to me direct, but envelopes should be
marked <u>ATTENTION</u> <u>MR</u> <u>D</u> <u>BROAD</u>.   In JUNE 90 any response will
be given to Mr Broad personally.

Yours

MR PHILIP SAUNDERS
C16 POKES

P.S Could you please send me your Software For Sale list.
PPS So push you readers if you want another C16 game.

1

MEMBERS PLEASE REPLY TO THIS LETTER NOW !

LISTVARS for the COMMODORE C-16/+4

LISTVARS for the C-16/+4 will list out the names and types of all BASIC variables that have been used (by a program or in direct mode) since the machine was last cleared. It lives on the top four lines of the text screen, 'windowed off' for it, so it doesn't reduce the available BASIC memory space or interfere with any existing BASIC program; and provided that running the BASIC program doesn't alter the 'windowing' of the screen, it won't disturb LISTVARS.

GETTING IT IN

First press '<CLEAR>[cursor down four times]<ESC>T' to reserve the top four lines of the screen. Then go into MONITOR and enter LISTVARS, using either 'M C00 C9F' or 'A C00 …' according to taste — you'll see the top four lines of the screen fill up as you go — and finally save it with 'S"LISTVARS",1,C00,CA0' (for tape; change '1' to '8' for disc).

Now go into BASIC and enter 'SYS3072<RETURN>'; the screen below LISTVARS should clear to three blank lines and the 'READY.' prompt. Next, create some variables (including arrays) in direct BASIC mode by entering a few lines such as

'DIMJK(0),LM%(0),NO$(0),P(0),Q%(0),R$(0):AB=0:CD%=0:EF$="":<RETURN>'

Then enter 'SYS3072<RETURN>' again, and LISTVARS should list all the simple variables followed (in reverse characters) by all the arrays.

LOADING IT

✱ ✱ ✱ This applies to a normal tape save; it probably applies to a normal disc save (information would be welcome!), but it *doesn't* apply to a tape QUIXAVE, which is much simpler to use than the normal save [advertisement!]. ✱ ✱ ✱

Loading LISTVARS in direct BASIC mode corrupts the BASIC pointers, so load it from MONITOR (use 'L"LISTVARS"<RETURN>'); make sure the cursor isn't too low down the screen, because if the screen scrolls you'll lose LISTVARS. When loading has finished, enter '6C00'; this runs LISTVARS, which automatically reserves its four lines of screen and returns you to direct BASIC mode.

RUNNING IT

You run LISTVARS with 'SYS3072<RETURN>'.

You can load and run any BASIC program either before or after loading LISTVARS, and neither will affect the other provided that the BASIC program doesn't alter the windowing of the screen. If anything does corrupt LISTVARS you'll see it happen on the screen, and then you'll just have to load LISTVARS again.

HARD COPY

To send the output of LISTVARS to the printer, use

'OPEN4,4:CMD4,"<heading>":SYS3072<RETURN>'

and LISTVARS will close the file (without printing 'READY.') before returning you to direct BASIC mode.

IF YOU HAVE QUIXAVER

Save LISTVARS in MONITOR with 'S"LISTVARS",FF,C00,CA0'; load it with an ordinary direct BASIC 'LOAD' — no final ',1' — and it will auto-run, reserving its four lines of screen in the process and returning to direct BASIC mode as usual.

```
. 0C00   20 4F FF   JSR $FF4F

>0C03 13 13 11 11 11 11 1B 54 : ■■■■■■■■
>0C0B 93 0D 00 A6 2D A5 2E 86 : ■■■&-.■

. 0C0E   A6 2D      LDX $2D
. 0C10   A5 2E      LDA $2E
. 0C12   86 03      STX $03
. 0C14   85 04      STA $04
. 0C16   E4 31      CPX $31
. 0C18   E5 32      SBC $32
. 0C1A   B0 5C      BCS $0C78
. 0C1C   38         SEC
. 0C1D   8A         TXA
. 0C1E   E5 2F      SBC $2F
. 0C20   AA         TAX
. 0C21   A5 04      LDA $04
. 0C23   E5 30      SBC $30
. 0C25   08         PHP
. 0C26   90 05      BCC $0C2D
. 0C28   A9 12      LDA #$12
. 0C2A   20 D2 FF   JSR $FFD2
. 0C2D   A9 20      LDA #$20
. 0C2F   AA         TAX
. 0C30   20 D2 FF   JSR $FFD2
. 0C33   A0 01      LDY #$01
. 0C35   B1 03      LDA ($03),Y
. 0C37   10 02      BPL $0C3B
. 0C39   A2 24      LDX #$24
. 0C3B   29 7F      AND #$7F
. 0C3D   48         PHA
. 0C3E   D0 05      BNE $0C45
. 0C40   A9 20      LDA #$20
. 0C42   20 D2 FF   JSR $FFD2
. 0C45   88         DEY
. 0C46   B1 03      LDA ($03),Y
. 0C48   10 01      BPL $0C4B
. 0C4A   E8         INX
. 0C4B   29 7F      AND #$7F
. 0C4D   20 D2 FF   JSR $FFD2
. 0C50   68         PLA
. 0C51   20 D2 FF   JSR $FFD2
. 0C54   8A         TXA
. 0C55   20 D2 FF   JSR $FFD2
. 0C58   A9 20      LDA #$20
. 0C5A   20 D2 FF   JSR $FFD2
. 0C5D   A5 03      LDA $03
. 0C5F   28         PLP
. 0C60   B0 09      BCS $0C6B
. 0C62   69 07      ADC #$07
. 0C64   AA         TAX
. 0C65   A5 04      LDA $04
. 0C67   69 00      ADC #$00
. 0C69   90 A7      BCC $0C12
. 0C6B   18         CLC
. 0C6C   A0 02      LDY #$02
. 0C6E   71 03      ADC ($03),Y
. 0C70   AA         TAX
```

```
. 0C71  C8        INY
. 0C72  A5 04     LDA $04
. 0C74  71 03     ADC ($03),Y
. 0C76  90 9A     BCC $0C12
. 0C78  A9 0D     LDA #$0D
. 0C7A  20 D2 FF  JSR $FFD2
. 0C7D  20 E7 FF  JSR $FFE7
. 0C80  4C FB 86  JMP $86FB
```

```
>0C83 20 20 0C 09 13 14 16 01 :
>0C8B 12 13 20 02 19 20 05 0C :
>0C93 0A 20 20 28 13 19 13 33 :
>0C9B 30 37 32 29 20 20 20 20 :

>0C00 20 4F FF 13 13 11 11 11 :
>0C08 11 1B 54 93 0D 00 A6 2D :
>0C10 A5 2E 86 03 85 04 E4 31 :
>0C18 E5 32 B0 5C 38 8A E5 2F :
>0C20 AA A5 04 E5 30 08 90 05 :
>0C28 A9 12 20 D2 FF A9 20 AA :
>0C30 20 D2 FF A0 01 B1 03 10 :
>0C38 02 A2 24 29 7F 48 D0 05 :
>0C40 A9 20 20 D2 FF 88 B1 03 :
>0C48 10 01 E8 29 7F 20 D2 FF :
>0C50 68 20 D2 FF 8A 20 D2 FF :
>0C58 A9 20 20 D2 FF A5 03 28 :
>0C60 B0 09 69 07 AA A5 04 69 :
>0C68 00 90 A7 18 A0 02 71 03 :
>0C70 AA C8 A5 04 71 03 90 9A :
>0C78 A9 0D 20 D2 FF 20 E7 FF :
>0C80 4C FB 86 20 20 0C 09 13 :
>0C88 14 16 01 12 13 20 02 19 :
>0C90 20 05 0C 0A 20 20 28 13 :
>0C98 19 13 33 30 37 32 29 20 :
```

THIS MAGAZINE NEEDS YOUR ARTICLES!!

PROGRAMS

REVIEWS

SO SEND THEM TO:—
ROY ROBINSON, 112 CLIFF ROAD, HORNSEA N. HUMBERSIDE, HU18 1JE.
TELEPHONE: 0964-534611 after 6pm but not on Friday Night.

O R E L S E !!!

IN FACT ANYTHING TO DO WITH THE
C16/C116/+4 IS MOST WELCOME..

REVIEW:
=======

Game reviewed:SUMMER EVENTS
Publisher   :ANCO
Price   :£5.50
Reviewer   :Matthew Newton-Lewis, West Sussex

Summer Events is a sporting compilation of seven athletic events. These
include: Pole vault, Weight lifting, Skeet shooting, Platform diving,
Cycling, Javelin and swimming. Also on the game it gives you adverts,
introduction, opening ceremony, closing ceremony and medal ceremonies.
    This game is mainly aimed at having at least one joystick but it helps a
lot is you have two.
    The graphics and sound are really good for an amiga let alone a C16. The
controls are a bit mudley and hard to get used to but after a few games it
comes as second nature.
    All the events are good with only a couple of exeptions. This game is not
so pleasing one player but as you can have upto four you don't often play it
alone.
    Its a bit boring waiting for all the events to load so if you have a disk
drive get the disk version which is only available with the coupon inside the
tape version.
    £5.50 sounds a lot pay and it is a lot to pay. I think you should get your
money worth if you have paitence to play as the game takes at least half an
hour min. To play

Ratings out of 10:

GRAPHICS   : 9
SOUND   : 8
PLAYABILITY : 9
V.F.M.   : 9
OVERALL   : 9

Please send me Vol 2 Issues 2 & 3 of 'C16/C116/+4 COMPUTING MONTHLY'.

I enclose a PO/CHEQUE for the value of £2.00.

NAME & ADDRESS:

SIGNED: _____

The above form should only be filled in by those who order the mag monthly,
not by those who subscribe yearly. Monthly subscribers can photocopy the
form so you don't chop up the mag, but please send it when ordering the
issue required as it saves me a lot of time and you will get your mag much
more quickly.

* This month I am only sending a small part of the programme and when it is
* entered you will not be able to run it as all the subroutines required
* are missing,first load the programme,both parts,I assume you have saved
* it in two parts as I do because the main code is from $4000 to $57BF and
* the data is from $B000 to $C2FF.
* Then type in D4112 and press return,position the cursor over the 'B' of
* the 'BRK' command in line $4112 and enter the programme as listed.
* This is the explanation.
```
4112-4114 Load 'A' register with sprite number and store it in $E5 (sprite
*              number register).
4116-4118 Load sprite address high byte (page number where sprite data is to
*              found) in 'A' register and store it in $D1.
411A       Gosub create sprite and print it on the screen.
411D       Move sprite across screen (this is the dreaded BLOOPING BUG)
4120-4128 Do the same for the next sprite (this is our hero BUG BLASTER)
412B-412E These two instructions form the main loop of the programme.
B000-B7FF This is the sprite definition data area for all but the end sprite
*              each sprite occupies one page (block of 255 bytes) of data,it is NOT
*              the end of the world if you get some of it wrong but the sprites
*              may look a bit odd when they are displayed,you can always correct
*              this as you go.
```
* After you have entered the code type in FB000 B7FF 00 this will clear,fill
* with 00 or zeros,all the the sprite data area and save a lot of typing,now
* enter all the sprite data. If have any problems or suggestions why not
* write in to the magazine?.............................PETER CRACK..........

```
. 4112  A2 00      LDX #$00            . 4122  86 E5      STX $E5
. 4114  86 E5      STX $E5             . 4124  A9 B7      LDA #$B7
. 4116  A9 B0      LDA #$B0            . 4126  85 D1      STA $D1
. 4118  85 D1      STA $D1             . 4128  20 A0 4C   JSR $4CA0
. 411A  20 A0 4C   JSR $4CA0           . 412B  20 B8 42   JSR $42B8
. 411D  20 F0 4A   JSR $4AF0           . 412E  4C 2B 41   JMP $412B
. 4120  A2 0E      LDX #$0E            . 4131  EA         NOP
```

CON'T →

```
>B000 00 00 00 2C 00 00 00 00 :...,....
>B008 02 BD 40 00 00 00 0A FF :.=@....
>B010 50 00 00 00 2B FF D4 00 :P...+T.
>B018 00 00 AB FF D5 00 00 00 :..+U...
>B020 AF FF F5 00 00 02 AF FF :./u.../
>B028 F5 40 00 0A BF FF FD 40 :u@..?}@
>B030 00 0A BF FF FD 40 00 0A :..?}@..
>B038 BF FF FD 50 00 0A FF FF :?}P..
>B040 FD 50 00 2A FF FF FF 54 :}P.*T
>B048 00 0A FF FF FF 54 00 2A :..*T.*
>B050 FF FF FF 54 00 2B FF FF :T.+
>B058 FF 54 00 AB 5F FF F5 D5 :T.+_uU
>B060 00 AB 55 FF 55 D5 00 AF :.+UUU./
>B068 FF FF FF D5 00 AF 82 FF :U./.
>B070 82 F5 00 AF 82 FF 82 F5 :.u./..u
>B078 00 AF FF FF FF F5 00 AB :./u.+
>B080 FF FF FF F5 00 AB FF 7D :u.+}
>B088 FF D5 00 2B FF EB FF D4 :U.+kT
>B090 00 2A FF FF FF D4 00 2A :.*T.*
>B098 EF FF FB D4 00 2A EF FF :o{T.*o
>B0A0 FB 54 00 0A F5 55 5F 50 :{T..uU_P
>B0A8 00 0A B5 28 5F 50 00 0A :..5(_P..
>B0B0 BD 00 7D 50 00 0A BF 55 :=.}P..?U
>B0B8 FD 50 00 02 AF FF FD 40 :}P../}@
>B0C0 00 02 AF FF F5 40 00 00 :../u@..
>B0C8 AB FF F5 00 00 00 2B FF :.+u...+
>B0D0 D4 00 00 00 0A FF 50 00 :T....P.
>B0D8 00 00 02 BD 40 00 00 00 :...=@...
>B0E0 00 2C 00 00 00 00 00 00 :.,......
>B0E8 00 00 00 00 00 00 00 00 :........
>B0F0 00 00 00 00 00 00 00 00 :........
>B0F8 00 00 00 00 00 00 00 00 :........
>B100 00 00 0B D0 00 00 00 2B :...P...+
>B108 D4 00 00 00 AF F5 00 00 :T.../u..
>B110 02 BF FD 40 00 02 BF FD :.?}@..?}
>B118 40 00 0A FF FF 50 00 0A :@..P..
>B120 FF FF 50 00 0A FF FF 50 :P..P
>B128 00 2B FF FF D4 00 2B FF :.+T.+
>B130 FF D4 00 2B FF FF D4 00 :T.+T.
>B138 2B FF FF D4 00 2B FF FF :+T.+
>B140 D4 00 AA AF FF D5 00 AF :T.*/U./
>B148 FF FF F5 00 AF FF FF F5 :u./u
>B150 00 AF FF FF F5 00 AF FF :./u./
>B158 F5 55 00 2B FF FF D4 00 :uU.+T.
>B160 2B FF FF D4 00 2B FF FF :+T.+
>B168 D4 00 2B FF FF D4 00 2B :T.+T.+
>B170 FF FF D4 00 2B FF FF D4 :T.+T
>B178 00 0A FF FF 50 00 0A FF :..P..
>B180 FF 50 00 0A FF FF 50 00 :P..P.
>B188 02 BF FD 40 00 02 BF FD :.?}@..?}
>B190 40 00 00 AF F5 00 00 00 :@../u...
>B198 2B D4 00 00 00 0B D0 00 :+T....P.
>B1A0 00 00 00 00 00 00 00 00 :........
>B1A8 00 00 00 00 00 00 00 00 :........
>B1B0 00 00 00 00 00 00 00 00 :........
>B1B8 00 00 00 00 00 02 00 00 :........
>B1C0 00 00 00 00 00 00 00 00 :........
>B1C8 00 00 00 00 00 00 00 00 :........
>B1D0 00 00 00 00 00 00 00 00 :........
>B1D8 00 00 00 00 00 00 00 00 :........
>B1E0 00 00 00 00 00 00 00 00 :........
>B1E8 00 00 00 00 00 00 00 00 :........
>B1F0 00 00 00 00 00 00 00 00 :........
>B1F8 00 00 00 00 00 00 00 00 :........
>B200 00 00 24 00 00 00 BD 00 :..$...=.
>B208 00 02 FF 40 00 0A FF 50 :..@..P
>B210 00 0B FF D0 00 2B FF D4 :..P.+T
>B218 00 2B FF D4 00 2F F4 00 :.+T./t
>B220 2F E7 F4 00 AF BD F5 00 :./gt./=u
>B228 00 AA FF F5 00 BF C3 FD :.*u.?C}
>B230 00 BF C3 FD 00 AF FF 55 :.?C}./U
>B238 00 AF BD F5 00 2F E7 F4 :./=u./gt
>B240 00 2F FF F4 00 2B FF D4 :./t.+T
>B248 00 2B FF D4 00 0B FF D0 :.+T..P
>B250 00 0A FF 50 00 02 FF 40 :..P..@
>B258 00 00 BD 00 00 00 24 00 :..=...$.
>B260 00 00 00 00 00 00 00 00 :........
>B268 00 00 00 00 00 00 00 00 :........
>B270 00 00 00 00 00 00 00 00 :........
>B278 00 00 00 00 00 00 00 00 :........
>B280 00 00 00 00 00 00 00 00 :........
>B288 00 00 00 00 00 00 00 00 :........
>B290 00 00 00 00 00 00 00 00 :........
>B298 00 00 00 00 00 00 00 00 :........
>B2A0 00 00 00 00 00 00 00 00 :........
>B2A8 00 00 00 00 00 00 00 00 :........
>B2B0 00 00 00 00 00 00 00 00 :........
>B2B8 00 00 00 00 00 00 00 00 :........
>B2C0 00 00 00 00 00 00 00 00 :........
>B2C8 00 00 00 00 00 00 00 00 :........
>B2D0 00 00 00 00 00 00 00 00 :........
>B2D8 00 00 00 00 00 00 00 00 :........
>B2E0 00 00 00 00 00 00 00 00 :........
>B2E8 00 00 00 00 00 00 00 00 :........
>B2F0 00 00 00 00 00 00 00 00 :........
>B2F8 00 00 00 00 00 00 00 00 :........
>B300 00 02 C0 00 0B D0 00 2F :..@..P./
>B308 F4 00 2D F4 00 2F F4 00 :t.-t./t.
>B310 BF 7D 00 BF FD 00 BF DD :?}.?}.?.
>B318 00 BB FD 00 BF F5 00 BE :.;}.?u.>
>B320 FD 00 2F F4 00 2F B4 00 :}./t./4.
>B328 2F F4 00 0B D0 00 02 C0 :/t..P..@
>B330 00 00 00 00 00 00 00 00 :........
>B338 00 00 00 00 00 00 00 00 :........
>B340 00 00 00 00 00 00 00 00 :........
>B348 00 00 00 00 00 00 00 00 :........
>B350 00 00 00 00 00 00 00 00 :........
>B358 00 00 00 00 00 00 00 00 :........
>B360 00 00 00 00 00 00 00 00 :........
>B368 00 00 00 00 00 00 00 00 :........
>B370 00 00 00 00 00 00 00 00 :........
>B378 00 00 00 00 00 00 00 00 :........
>B380 00 00 00 00 00 00 00 00 :........
>B388 00 00 00 00 00 00 00 00 :........
>B390 00 00 00 00 00 00 00 00 :........
>B398 00 00 00 00 00 00 00 00 :........
>B3A0 00 00 00 00 00 00 00 00 :........
>B3A8 00 00 00 00 00 00 00 00 :........
>B3B0 00 00 00 00 00 00 00 00 :........
>B3B8 00 00 00 00 00 00 00 00 :........
>B3C0 00 00 00 00 00 00 00 00 :........
>B3C8 00 00 00 00 00 00 00 00 :........
>B3D0 00 00 00 00 00 00 00 00 :........
>B3D8 00 00 00 00 00 00 00 00 :........
>B3E0 00 00 00 00 00 00 00 00 :........
>B3E8 00 00 00 00 00 00 00 00 :........
>B3F0 00 00 00 00 00 00 00 00 :........
>B3F8 00 00 00 00 00 00 00 00 :........
```

```
>B400 00 3C 00 7D 00 EB 00 FF :.<.}.k.
>B408 00 FF 00 EB 00 7D 00 3C :..k.}.<
>B410 00 00 00 00 00 00 00 00 :........
>B418 00 00 00 00 00 00 00 00 :........
>B420 00 00 00 00 00 00 00 00 :........
>B428 00 00 00 00 00 00 00 00 :........
>B430 00 00 00 00 00 00 00 00 :........
>B438 00 00 00 00 00 00 00 00 :........
>B440 00 00 00 00 00 00 00 00 :........
>B448 00 00 00 00 00 00 00 00 :........
>B450 00 00 00 00 00 00 00 00 :........
>B458 00 00 00 00 00 00 00 00 :........
>B460 00 00 00 00 00 00 00 00 :........
>B468 00 00 00 00 00 00 00 00 :........
>B470 00 00 00 00 00 00 00 00 :........
>B478 00 00 00 00 00 00 00 00 :........
>B480 00 00 00 00 00 00 00 00 :........
>B488 00 00 00 00 00 00 00 00 :........
>B490 00 00 00 00 00 00 00 00 :........
>B498 00 00 00 00 00 00 00 00 :........
>B4A0 00 00 00 00 00 00 00 00 :........
>B4A8 00 00 00 00 00 00 00 00 :........
>B4B0 00 00 00 00 00 00 00 00 :........
>B4B8 00 00 00 00 00 00 00 00 :........
>B4C0 00 00 00 00 00 00 00 00 :........
>B4C8 00 00 00 00 00 00 00 00 :........
>B4D0 00 00 00 00 00 00 00 00 :........
>B4D8 00 00 00 00 00 00 00 00 :........
>B4E0 00 00 00 00 00 00 00 00 :........
>B4E8 00 00 00 00 00 00 00 00 :........
>B4F0 00 00 00 00 00 00 00 00 :........
>B4F8 00 00 00 00 00 00 00 00 :........
>B500 00 03 C0 00 0B F0 00 2F :..@..p./
>B508 FC 00 2F FC 00 20 0C 00 :!./!. ..
>B510 B0 0F 00 70 0D 00 B0 0F :0..p..0.
>B518 00 70 0D 00 B0 0F 00 70 :.p..0..p
>B520 0D 00 20 0C 00 2F FC 00 :.. ../!.
>B528 2F FC 00 0B F0 00 03 C0 :/!..p..@
>B530 00 00 00 00 00 00 00 00 :........
>B538 00 00 00 00 00 00 00 00 :........
>B540 00 00 00 00 00 00 00 00 :........
>B548 00 00 00 00 00 00 00 00 :........
>B550 00 00 00 00 00 00 00 00 :........
>B558 00 00 00 00 00 00 00 00 :........
>B560 00 00 00 00 00 00 00 00 :........
>B568 00 00 00 00 00 00 00 00 :........
>B570 00 00 00 00 00 00 00 00 :........
>B578 00 00 00 00 00 00 00 00 :........
>B580 00 00 00 00 00 00 00 00 :........
>B588 00 00 00 00 00 00 00 00 :........
>B590 00 00 00 00 00 00 00 00 :........
>B598 00 00 00 00 00 00 00 00 :........
>B5A0 00 00 00 00 00 00 00 00 :........
>B5A8 00 00 00 00 00 00 00 00 :........
>B5B0 00 00 00 00 00 00 00 00 :........
>B5B8 00 00 00 00 00 00 00 00 :........
>B5C0 00 00 00 00 00 00 00 00 :........
>B5C8 00 00 00 00 00 00 00 00 :........
>B5D0 00 00 00 00 00 00 00 00 :........
>B5D8 00 00 00 00 00 00 00 00 :........
>B5E0 00 00 00 00 00 00 00 00 :........
>B5E8 00 00 00 00 00 00 00 00 :........
>B5F0 00 00 00 00 00 00 00 00 :........
>B5F8 00 00 00 00 00 00 00 00 :........

>B600 00 0C 00 37 00 25 00 37 :...7.%.7
>B608 00 25 00 0C 00 00 00 00 :.%......
>B610 00 00 00 00 00 00 00 00 :........
>B618 00 00 00 00 00 00 00 00 :........
>B620 00 00 00 00 00 00 00 00 :........
>B628 00 00 00 00 00 00 00 00 :........
>B630 00 00 00 00 00 00 00 00 :........
>B638 00 00 00 00 00 00 00 00 :........
>B640 00 00 00 00 00 00 00 00 :........
>B648 00 00 00 00 00 00 00 00 :........
>B650 00 00 00 00 00 00 00 00 :........
>B658 00 00 00 00 00 00 00 00 :........
>B660 00 00 00 00 00 00 00 00 :........
>B668 00 00 00 00 00 00 00 00 :........
>B670 00 00 00 00 00 00 00 00 :........
>B678 00 00 00 00 00 00 00 00 :........
>B680 00 00 00 00 00 00 00 00 :........
>B688 00 00 00 00 00 00 00 00 :........
>B690 00 00 00 00 00 00 00 00 :........
>B698 00 00 00 00 00 00 00 00 :........
>B6A0 00 00 00 00 00 00 00 00 :........
>B6A8 00 00 00 00 00 00 00 00 :........
>B6B0 00 00 00 00 00 00 00 00 :........
>B6B8 00 00 00 00 00 00 00 00 :........
>B6C0 00 00 00 00 00 00 00 00 :........
>B6C8 00 00 00 00 00 00 00 00 :........
>B6D0 00 00 00 00 00 00 00 00 :........
>B6D8 00 00 00 00 00 00 00 00 :........
>B6E0 00 00 00 00 00 00 00 00 :........
>B6E8 00 00 00 00 00 00 00 00 :........
>B6F0 00 00 00 00 00 00 00 00 :........
>B6F8 00 00 00 00 00 00 00 00 :........
>B700 00 03 C0 00 0B F0 00 2F :..@..p./
>B708 FC 00 2F FC 00 20 0C 00 :!./!. ..
>B710 B0 CF 00 73 7D 00 B2 5F :00.s}.2_
>B718 00 73 7D 00 B2 5F 00 70 :.s}.2_.p
>B720 CD 00 20 0C 00 2F FC 00 :.M. ../!.
>B728 2F FC 00 0B F0 00 03 C0 :/!..p..@.
>B730 00 00 00 00 00 00 00 00 :........
>B738 00 00 00 00 00 00 00 00 :........
>B740 00 00 00 00 00 00 00 00 :........
>B748 00 00 00 00 00 00 00 00 :........
>B750 00 00 00 00 00 00 00 00 :........
>B758 00 00 00 00 00 00 00 00 :........
>B760 00 00 00 00 00 00 00 00 :........
>B768 00 00 00 00 00 00 00 00 :........
>B770 00 00 00 00 00 00 00 00 :........
>B778 00 00 00 00 00 00 00 00 :........
>B780 00 00 00 00 00 00 00 00 :........
>B788 00 00 00 00 00 00 00 00 :........
>B790 00 00 00 00 00 00 00 00 :........
>B798 00 00 00 00 00 00 00 00 :........
>B7A0 00 00 00 00 00 00 00 00 :........
>B7A8 00 00 00 00 00 00 00 00 :........
>B7B0 00 00 00 00 00 00 00 00 :........
>B7B8 00 00 00 00 00 00 00 00 :........
>B7C0 00 00 00 00 00 00 00 00 :........
>B7C8 00 00 00 00 00 00 00 00 :........
>B7D0 00 00 00 00 00 00 00 00 :........
>B7D8 00 00 00 00 00 00 00 00 :........
>B7E0 00 00 00 00 00 00 00 00 :........
>B7E8 00 00 00 00 00 00 00 00 :........
>B7F0 00 00 00 00 00 00 00 00 :........
>B7F8 00 00 00 00 00 00 00 00 :........
```

cont next month!

```
3310 IFJ$="K"THENJ$=S$(218):PRINTCL$;J$:
GOTO4160
3320 IFJ$="L"THENJ$=S$(219):PRINTCL$;J$:
GOTO4060
3330 GOTO0290
3340 GOSUB4020
3350 FORY=220TO241:PRINTSPC(2);S$(Y):NEX
T
3360 PRINTLL$
3370 GETK$:IFK$=""THEN3370
3380 IFK$="0"THENK$=S$(220):PRINTCL$;K$:
GOTO4170
3390 IFK$="1"THENK$=S$(221):PRINTCL$;K$:
GOTO4110
3400 IFK$="2"THENK$=S$(222):PRINTCL$;K$:
GOTO4110
3410 IFK$="3"THENK$=S$(223):PRINTCL$;K$:
GOTO4130
3420 IFK$="4"THENK$=S$(224):PRINTCL$;K$:
GOTO4000
3430 IFK$="5"THENK$=S$(225):PRINTCL$;K$:
GOTO4400
3440 IFK$="6"THENK$=S$(226):PRINTCL$;K$:
GOTO4060
3450 IFK$="7"THENK$=S$(227):PRINTCL$;K$:
GOTO4100
3460 IFK$="8"THENK$=S$(228):PRINTCL$;K$:
GOTO4100
3470 IFK$="9"THENK$=S$(229):PRINTCL$;K$:
GOTO4330
3480 IFK$="A"THENK$=S$(230):PRINTCL$;K$:
GOTO4220
3490 IFK$="B"THENK$=S$(231):PRINTCL$;K$:
GOTO4100
3500 IFK$="C"THENK$=S$(232):PRINTCL$;K$:
GOTO4420
3510 IFK$="D"THENK$=S$(233):PRINTCL$;K$:
GOTO4100
3520 IFK$="E"THENK$=S$(234):PRINTCL$;K$:
GOTO4070
3530 IFK$="F"THENK$=S$(235):PRINTCL$;K$:
GOTO4070
3540 IFK$="G"THENK$=S$(236):PRINTCL$;K$:
GOTO4110
3550 IFK$="H"THENK$=S$(237):PRINTCL$;K$:
GOTO4070
3560 IFK$="I"THENK$=S$(238):PRINTCL$;K$:
GOTO4070
3570 IFK$="J"THENK$=S$(239):PRINTCL$;K$:
GOTO4480
3580 IFK$="K"THENK$=S$(240):PRINTCL$;K$:
GOTO4560
3590 IFK$="L"THENK$=S$(241):PRINTCL$;K$:
GOTO4220
3600 GOTO0290
```

```
3610 GOSUB4020
3620 FORY=242TO263:PRINTSPC(2);S$(Y):NEX
T
3630 PRINTLL$
3640 GETL$:IFL$=""THEN3640
3650 IFL$=""THENL$=S$(242):PRINTCL$;L$:
GOTO4450
3660 IFL$="1"THENL$=S$(243):PRINTCL$;L$:
GOTO4220
3670 IFL$="2"THENL$=S$(244):PRINTCL$;L$:
GOTO4060
3680 IFL$="3"THENL$=S$(245):PRINTCL$;L$:
GOTO4130
3690 IFL$="4"THENL$=S$(246):PRINTCL$;L$:
GOTO4590
3700 IFL$="5"THENL$=S$(247):PRINTCL$;L$:
GOTO4050
3710 IFL$="6"THENL$=S$(248):PRINTCL$;L$:
GOTO4260
3720 IFL$="7"THENL$=S$(249):PRINTCL$;L$:
GOTO4090
3730 IFL$="8"THENL$=S$(250):PRINTCL$;L$:
GOTO4090
3740 IFL$="9"THENL$=S$(251):PRINTCL$;L$:
GOTO4540
3750 IFL$="A"THENL$=S$(252):PRINTCL$;L$:
GOTO4060
3760 IFL$="B"THENL$=S$(253):PRINTCL$;L$:
GOTO4090
3770 IFL$="C"THENL$=S$(254):PRINTCL$;L$:
GOTO4070
3780 IFL$="D"THENL$=S$(255):PRINTCL$;L$:
GOTO4100
3790 IFL$="E"THENL$=S$(256):PRINTCL$;L$:
GOTO4500
3800 IFL$="F"THENL$=S$(257):PRINTCL$;L$:
GOTO4190
3810 IFL$="G"THENL$=S$(258):PRINTCL$;L$:
GOTO4090
3820 IFL$="H"THENL$=S$(259):PRINTCL$;L$:
GOTO4070
3830 IFL$="I"THENL$=S$(260):PRINTCL$;L$:
GOTO4400
3840 IFL$="J"THENL$=S$(261):PRINTCL$;L$:
GOTO4470
3850 IFL$="K"THENL$=S$(262):PRINTCL$;L$:
GOTO4520
3860 IFL$="L"THENL$=S$(263):PRINTCL$;L$:
GOTO4060
3870 GOTO290
3880 PRINTUU$
3890 FORX=0TO6:PRINTSX$(X):NEXT
3900 PRINTRR$;
```

SUM—HELP for the COMMODORE C—16/+4

SUM-HELP for the C-16/+4 will add up all the figures on a bill or
bank statement (or any other series of figures) with just a single
keypress to enter each figure, showing the running total in a tidy
format after each entry.   It works in direct BASIC mode on the «HELP»
key, and doesn't reduce the available BASIC memory space or interfere
with any existing BASIC program;   and provided that the BASIC program
doesn't alter the «HELP» key, it won't disturb SUM-HELP.

SUM-HELP will accept positive or negative entries, or complex
entries like '13#21.34/1.15';   and it can be used for any sequence of
additions, subtractions, multiplications, and divisions where each one
has to operate on the result of the one before.

GETTING IT IN

SUM-HELP is too long to be entered directly in a 'KEY8' command,
so some 'shorthand' has to be used.   In direct BASIC mode enter

`R$=CHR$(13) : E$=CHR$(27) : Q$=CHR$(34) «RETURN»`

KEY8, R$+"[cu][lb]"+E$+"D[2#cu][16#si]?US[sI]"+Q$+"######.##"+Q$
 +"; [9#cr][4#sp][3#cl][bk]+0[cl] «RETURN»

where   [cu] means «CURSOR UP»
           [lb] means «LIGHT BLUE»
           [si] means «SHIFT INST/DEL»
           [sI] means «SHIFT I»
           [cr] means «CURSOR RIGHT»
           [sp] means «SPACE»
           [cl] means «CURSOR LEFT»
           [bk] means «BLACK»
           and [2#cu] means [cu] twice, and similarly thoughout

SAVING IT

These instructions for saving and loading apply to a normal
tape or disc save; a QUIXAVE to tape needs some slight changes. # # #

Save SUM-HELP in MONITOR with 'S"SUM-HELP", 1,55F,5E7 «RETURN»'
(for tape; change '1' to '8' for disc).   This saves the whole block of
function-key definitions.   (SUM-HELP uses up a fair amount of the
available key-definition space, so if you want to redefine some of the
other function keys you may find yourself short of room; but any keys
you don't need can of course be redefined as 'nulls'.)

LOADING IT

Load SUM-HELP in direct BASIC mode with 'L"SUM-HELP",1,1 «RETURN»'
(don't forget the final ',1'; change the first '1' to '8' for disc).

RUNNING IT

Clear the screen and press «HELP».   The 'skeleton' of SUM-HELP is
printed in light blue; the cursor appears over the '0' of a black '+0'.
You type in your first figure, which starts by over-writing the '0', and
press «HELP».   The running total appears on the next line, followed by
a fresh '+0' (all in black), and you enter the next figure and press
«HELP» again — and so on for as long as you like.   For subtraction,
you just enter negative figures by prefixing them with a '-' — no need
to delete the '+'.   You can enter BASIC expressions instead of simple
figures, and you can delete the '+' and replace it by '#' or '/' — the
usual '+' will reappear on the next line.

You can load and run any BASIC program either before or after loading SUM-HELP, and neither will affect the other provided the BASIC program doesn't alter the definition of the «HELP» key.   (But remember that loading SUM-HELP restores all the function keys to the definitions they had when it was saved.   You can of course redefine the keys after loading SUM-HELP, and then save SUM-HELP again with all the new definitions.)

You can modify the 'PRINT USING' string of SUM-HELP to give a different number of decimal places, and you can change the colour of the 'skeleton' printing — if you make it the same colour as the screen it will be totally invisible, but this can lead to difficulties!

If you make a mistake and get a 'SYNTAX ERROR' message, either clear the screen or press «RETURN» three times and then start again.

IF YOU HAVE QUIXAVER

Save SUM-HELP in MONITOR with 'S"SUM-HELP",99,55F,5E7 «RETURN»'; load it with an ordinary direct BASIC 'LOAD' with no final ',1'.

GAME REVIEW
REVIEWER: Mark Lennon, W. Sussex
Game Reviewed — Arthur Noid

First of all I apologise to Mark for forgetting to put this in last issue!!

Arthur Noid is a variation of the world famous Bat and Ball games and is an excellent variation at that! The idea to anyone who does'nt know, is to smash away a wall made of bricks using just a Bat and a Ball. This may sound rather boring but is in fact very good fun. Although the main idea is same, Arthur Noid has a bit more added on to it in the way of many varied screens, indestructable bricks and bricks that have to be hit several times before they dissappear. The main and best added feature is that of barrels which will give you an added feature like a large bat or a slow ball etc. Overall Arthur Noid provides 32 Level's of superb sound, graphics and gameplay. Even the storyline is excellent.

Marks out of 100%

GRAPHICS	88%
SOUND	95%
PLAYABILITY	90%
VFM	100%
OVERALL	93%

COMPANY - ALTERNATIVE
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Basic Course. PART 1
By Roy Robinson. May 1990

First of all I must point out that this is not meant to be a teaching
course, simply because I don't know alot about basic, so it will all be new
to both you and me, and I hope I learn from it to. Well I'll cut the crap
and get on with it.

This month I will look at how to display things on the screen in basic, so
here goes.

If you want to print something on the screen you would use:-

```
10 PRINT "HELLO"
```

Which prints HELLO on the next line after running the program. But if you
wanted HELLO printed 15 characters in from the left then use:-

```
10 PRINT TAB(15)"HELLO"
```

But if you want to be really adventurous (can't spell!!), you could use:-

```
10 CHAR 1,10,10,"HELLO"
```

Which prints HELLO, 10 columns in and 10 rows down.

All the about are used for display any character on screen, and can be used
in conjunction with any of the COLOURS (ie, CTRL/CBM and a number key) or
woith the reverse text or flash routine. The about is very simple stuff
but I thought that I better cover it.

```
10 PRINT CHR(72)+CHR$(69)+CHR$(76)+CHR$(76)+CHR$(78)
```

The above prints HELLO on the next line of the screen after RUN is done.
The above uses the CHARACTER STRING function and the codes in the brackets
are the decimal codes for the letters, ie, 72 = H, 69 = E, 76 = L and 78 =
0. To do the above using CHAR, it would look like:-

```
10 CHAR 1,10,10,CHR$(72)+CHR$(69)+CHR$(76)+CHR$(76)+CHR$(78)
```

Running the above puts HELLO 10 columns in and 10 rows down.

Well I think thats enough for this month, but really the course could do
with be taken over by someone whose is a bit better at Basic than I am, so
if you would like to do this article on a regular basis, please write/call
me and I sort you out, but please hurry. Address in Ed's Notes.

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