BEEBUG

Issue 7 Dec'82

IN THIS ISSUE:

- Christmas Competition
- Education Spot
- Software protection Part II
- Computer conversions Part I

. . . . . and lots more!

Christmas has come round again – the time of peace and joy to all men (and user groups). I can't help thinking about my Christmas last year. As a Christmas Present I had a BBC Computer ordered on the 1st December – I actually got to open my 'Christmas' present on the 26th April. I am sure many of you have similar tales. Well, being Christmas I will refrain from moaning at either the BBC or Acorn – give them December to rest and I'll start again in the New Year (only joking).

OK, so what exciting news stories have hit my desk since last issue? Sales of the BBC Micro top 50,000, Acorn at last launches their new printer, the Electron is delayed yet again, somebody else tries to do an "Uncle Clive" and print one of those silly tables comparing the BBC Micro again with errors and much, much more as we say on the front cover.

Before we start on news I should just mention a few LASERBUG matters.

I did make a "slight" mistake in my Editorial in the October issue i.e. "it is October and you are actually reading the October issue of LASERBUG". Most of you read that around the 9th November! After solving our internal problems we then had some external ones with our printer. However things are getting back to usual, or at least how they should be, fairly quickly (how many times have you heard that before, from us and other people!). Seriously though we have now got back on our feet at last and so (famous last words) we will have no more problems.

The long awaited LASERBUG membership cards are getting close. For those that don't know we did originally plan to have membership cards for every member. We made all the arrangements and even paid for them but two weeks later the company concerned went into liquidation! We have now arranged for a hopefully more stable company to make some for us – more details in the new year.

At last sales of the BBC Micro have just topped the 50,000 mark. When Acorn originally started making the BBC Micro it was predicted that sales would reach the 100,000 mark within a year. That still remains to be seen but even 50,000 is a significant step. With Acorn releasing the BBC Micro in the States next year they might reach their target?

The baby brother to the BBC Micro, the Electron, has been delayed yet again. Acorn are being very careful not to make the same mistake as they did with the BBC and are building up stocks. My personal feeling is that it might be launched at the IPC Show next June but all the reports I've seen point to an earlier date.

Been tempted by the Jupiter Ace because of FORTH? Push temptation aside as Level 9 Computing now have their version available. It is suitable for both the Model A and B and comes complete with a 70 page manual. From my copy of it it does look very good – it follows the FORTH-79 STANDARD and includes many of the facilities from fig-FORTH. It works up to 10 times faster than BBC BASIC and costs only £15 inclusive. We will be looking at it in more detail in future editions of LASERBUG, meanwhile full details from Level 9 Computing, 229 Hughenden Road, High Wycombe, Bucks., HP13 5PG.

Incidently we will be starting up a new languages spot in LASERBUG soon. If you have one of the many languages available on the BBC Micro then please send us your programs as the purely BASIC user is normally interested in unknown fields such as this.

One of the peripherals that was to be made up for the BBC Micro was an ink jet printer. Most people seem to have forgotten about it – until now. Acorn have just bought up the marketing rights from Olivetti for an undisclosed sum for their dry ink jet printer. It will cost £360 and will outstrip anything in the same price range. The ink jet method allows for a much higher resolution than usual and works quietly compared with the dot matrix printers. It sounds very promising and we will review one as soon as possible (but don't hold your breath).

Remember Uncle Clive's advertising campaign a few months back where he printed a comparison table which included the BBC Micro – the problem was that most of it was wrong! (see LASERBUG Issue 3). Lowe Electronics of Derbyshire have done exactly the same thing with the handout about the Colour Genie. Uncle Clive's leaflet could have been put down to error but on the Genie leaflet things are purposely left out. Although the leaflet states the CPU speed of all the other micros, it does not with the Beeb. It states incorrectly that the maximum number of colours if 4 – 8 is possible with MODE7. It totally ignores that the maximum resolution on the A is 320 x 256 which is better than any of the other computers on the leaflet. It also ignores details about graphics characters. Although it mentions that the A has sound capabilities it does not say that it has 4 channels. They leave the bit about user definable keys out for the BBC Micro even though it has 6 more than any of the other's mentioned. It does not mention about the other screen modes and leaves blank the size of BASIC. Need I say more? Please Lowe Electronics withdraw the ad.

Interested in interfacing your BBC Computer to the outside world? Educational Electronics produce a "Measurement Module" which is compatable with your BBC. If you are a science teacher but do not know how to use the BBC Computer yet don't worry – all you have to do is connect up the box to your micro and then load in a special program. I do not have enough room to say too much about it here but it can measure many different things and can present them in many different ways on the computer varying from graphs to simple values. This I feel will be useful to many labs (especially schools and colleges) and would recommend that you find out more. The unit is also available for the ZX81/Spectrum and 380Z and costs £98 + and adaptor for your micro (£22 for the BBC one) + VAT. Special probes and power units are also available. More details from Educational Electronics, 30 Lake Street, Leighton Buzzard, Beds., LU7 8RX. 0525-373666.

Interested in the BBC Micro and other 6502/6809 machines? If so then Proton Acceleration might be of interest to you. PA is basically an R & D (research & development) Users Group who aim to "achieve maximum benefits of parallel knowledge gathered for members from users of similar machines". There priorities will be "in the design, production and distribution of hardware products for our members at favourable user group prices, the futuristic and progressive support of our investments that we have made into our systems". It sounds interesting – we will let you know more of Proton Acceleration in future issues. Meanwhile you can contact them at 16 Iddesleigh Road, Charminster, Bournemouth, Dorset. 0202-294393.

Interested in books by Interface (i.e. Let Your BBC Micro Teach You To Program/The BBC Micro Revealed. If you are then forget the rest – buy them direct from LASERBUG, except at a 10% discount! Full details on the special offers page.

LASERBUG is now in the position at last to be able to pay for articles. We can offer £5 for small contributions and £10 for larger ones. Higher rates can be negotiated for very substantial or outstanding work. Just think, two small contributions and you have made up for the initial £12, well almost at least.

The results of our 1982 questionnaire postponed from last issue appears elsewhere. You can interpret them how you like but we thought we'd tell you our opinions. Come on all you ladies out there – just 4% of you have BBC Micros. That means only 2,000 belong to women – put in a bit more effort. It was rather predictable the age group that most of you fell into as was the number of each computer ordered. It surprised me how many people got onto the bandwagon of ordering their computer at the very start, the January increase was expected. The comments on delivery speak for themselves and I need say no more. Roughly 1/3 of you are total beginners to computing which was one of the more surprising figures as was the fact that as many people had Apples before the BBC Micro as they did the ZX's. Education obviously plays a large part in this computers life and so in future we will try to look towards this area. The reasons for buying the computer/its strengths and weaknesses like so many of these figures speak volumes – for the excellence of the machine and the handling problems. I was amazed at the number of people who planned to buy floppies – that is an extremely expensive outlay. We are considering investing in a national meeting but the local meetings certainly seem to be popular – if they ever get arranged. It is rather disappointing that 72% of people would go to a local meeting but only 22% be prepared to help organise it, apathy won't get you anywhere. I think the last result in the questionnaire was a huge vote of confidence in LASERBUG and so must thank you for that.

Well, that's all from me this month. Finally as it is the end of the year I would just like to thank all the people who have helped us in the past 10 months, especially to all the contributors. My personal thanks must go to Maureen for all the extremely hard work she has put in, also a quick thank-you to Brenda.

I hope you have a nice Christmas. Unfortunately I can't send a Christmas card to you all so instead please type in this months seasonal program – I think you'll be impressed.

Merry Christmas and a Happy New Year from all of us here at LASERBUG.

Please address all correspondence to:

LASERBUG,
10 Dawley Ride,
Colnbrook,
Slough,
Berks.,
SL3 0QH.

Please write one or two words in the top left hand corner of your envelope to describe what your letter is about i.e. OFFERS, MEMBERSHIPS, CONTRIBUTIONS, ADVERTISING, etc. otherwise your letter may be subject to delay.

Paul Barbour

software protection part II

Last month we showed you how to make copies of programs that appeared unsaveable. This month we will show you a few simple ways of protecting your programs from other people looking at them.

The Software houses have several methods of protecting there listings once you have access to them. This is done by a special process which involves altering lines in a certain way so that when they are listed, the special character somewhere (normally just after a REM statement) clears the screen and hence makes the line unreadable. Now half the software houses are panicking that I will reveal all I should say that I **will not** reveal how this method is done nor how to overcome it. Although I do want to describe how to protect your programs, I do not want to ruin a few of the software companies by telling you their secrets (although some of them could do with ruining when you look at some of the rubbish on sale).

To help you save your program and make it almost impossible for anyone to look at it we will describe a fairly simple method. Once you have your program ready this method can be easily applied to it. A program is most secure when it is saved in two parts. Now even if the program is all in BASIC we will still ★LOAD it as will be explained later. Obviously your initial program should have a fancy graphic display, etc. but for the purposes of this article our introduction program will simply print up LASERBUG SUPER GAME and then load in the main game.

```
L.
    10REM (C) LASERBUG 1982
    20*KEY7*LOAD""2000|MPAGE=&2000|
MRUN|M
    30PRINT"LASERBUG SUPER GAME"
    40PRINT
    50PRINT"PRESS f7 TO START"
    60PRINT
    90END
```

Notice that we have left lines 40 and 50 blank. In here we will insert two special routines that demonstrate an added safeguard to your program. By now you are probably familiar with PRINT?&E00 to print out what is at memory location &E00. However if you use PRINT!&E00 the computer will print out locations &E00, &E01, &E02 and &E03 (Ref: User Guide, p.409–413). If you know what the first four bytes are in your program:

```
>PRINT~!&E00
  170A000D
>
```

then you can test for this at line 70. If someone then alters the beginning of the program (in this case the copyright) then you can halt the program there and then:

```
>
   70IF!&E00<>&170A000DTHENPRINT"C
OPYRIGHT VIOLATED":*KEY7:END
```

Another test you can make is that the program is the correct length. (NOTE: When trying this out for yourself please put the values you get into the program as simply typing an extra space will alter everything.) Initially you will have to guess the length (i.e. 150). Then add an appropriate line:

```
>
   80IFTOP-PAGE<>150THENPRINT"COPY
RIGHT VIOLATED":*KEY7:END
```

Once you have added this line check to see what the real length is:

```
>PRINTTOP-PAGE
  228
```

and then alter the program properly:

```
>
   80IFTOP-PAGE<>228THENPRINT"COPY
RIGHT VIOLATED":*KEY7:END
```

If you then run the program you should see it run correctly. Once it does work try altering the copyright from say LASERBUG to ACORNSOFT. You will see that the program will not run anymore. Alter it back again and it should work fine. More drastic action could be taken if copyright is violated but this will be described later.

Let us work on protecting the main program itself. We will assume that the main program is:

```
>L.
   10REM (C) LASERBUG 1982
   40CLS
   50PRINT"LASERBUG SUPER GAME"
   60A=GET
   70IFA<65ORA>90THENPRINT"THAT IS
 NOT A LETTER OF THE ALPHABET"
   80GOTO60
```

Not much of a program but we don't want anything too large to experiment on.

There are two ways that a program will be interupted whilst running – by pressing ESCAPE or BREAK. Both methods are easily trapable. For simplicity sake we will just make the program run again if ESCAPE is pressed:

```
>
   200ONERRORRUN
```

Assuming your program does not use any keys near the BREAK key, the only reason somebody would have for pressing it (other than trying to leave the program) is to look at your listing. You have two options open to you. Firstly you can make the program run itself again:

```
>
   30*KEY10OLD|MPAGE=&2000|MRUN|M
```

Alternatively you could rub out the program. When you press BREAK the program is automatically wiped from the memory unless you press OLD. If you program the key to then print in a line 10 the old program would be erased from the memory permanently:

```
>
   30*KEY10"10P."+CHR$34+"RELOAD PROGRAM"+CHR$34
+"|MPAGE=&2000|MNEW|M10P."+CHR$34+"RELOAD PR
OGRAM"+CHR$34+"|M|L"
```

DO SAVE THE PROGRAM BEFORE RUNNING IT otherwise it will be almost lost completely. Now you have a program that cannot be escaped from and BREAK loses the program completely. The only way **at the moment** to get the program back is to do a hard-break. So how do we get around that? What we will do is save the main program as if it is machine code. And the reason for doing this? Normally programs start at &E00 (page). When BREAK is pressed the computer automatically resets page to &E00. Hence if we store the program at say &2000 it will appear to be lost if the user types OLD.

Save the main program as you would a BASIC one, straight after the introduction. Then rewind the program and then press key 7 as you are instructed. When you do the next program will be ★LOADed at location &2000, PAGE reset to this value and the program RUN. You can then try all you like to get the program back. The only way to do it is to reset the computer by performing a hard break first time, reset page and then the program is back. Although with a little practice you will be able to get everything back first time, the normal user who tries will not be able to (unless you show him this article).

Of course there are more drastic measure you can take if somebody presses either ESCAPE or BREAK. Firstly you could do as much as possible to make the computer unusable.

```
>L.
 1000ONERRORGOTO1010
 1010MODE5
 1020VDU19,0,23,0,0
 1030REPEATA$=GET$:PRINTA$;:UNTIL0
```

Alternatively you could wipe the program from memory:

```
>L.
 1000FORX=PAGE TOTOP
 1010?X=0
 1020NEXT
```

Hopefully this article has given you some ideas on how to go about protecting your programs from prying eyes. Generally a few of the many methods shown here are quite suitable. You should remember however not to protect your program until you are sure it is perfect otherwise one day you will end up losing hours of work.

Paul Barbour

Continuing our series of educational programs, this month we present a program that tests childrens abilities with the alphabet. Although obviously it is designed for young children, you would be surprised how many older children still have difficulty with the alphabet.

```
L.
   10
   20
   30
   40 REM      Alphabet Tester
   50 REM      by Paul Barbour
   60 :
   70 REM          22/11/82
   80 :
   90 REM        Version 1.0
  100 :
  110 REM Takes up ~5.67k memory
  120 REM  and uses MODE 7 only
  130 :
  140 REM     Suitable for 16k
  150 :
  160 REM  Desi9ned for Primary
  170 REM  School children but
  180 REM  suitable for anybody
  190 REM of aPProPriate ability
  200 :
  210 REM    (C) LASERBUG 1982
  220 :
  230      :::::
  240 :
  250 *TV255
  260 MODE7
  270 VDU23;8202;0;0;0;
  280 *KEY10OLD|MRUN|M
  290 ONERRORPROCerror
  300 PROCinitialise
  310 PROCtitle
  320 PROCintroduction
  330 PROCdelay(10)
  340 PROCalphabet
  350 PROCdelay(3)
  360 PROCintroduction_continued1
  370 PROCcontinue
  380 PROCtitle
  390 PROCintroduction_continued2
  400 PROCcontinue
  410 PROCinitialise_9ame
  420 REPEATPROCdefine_9uestion
  430   PROCtitle
  440   PROCset_9uestion
  450   PROCdelay(1)
  460   PROCmark
  470   UNTIL9uestion_number>10
  480 PROCtitle
  490 PROCoverall_marks
  500 PROCcomputers_comment
  510 PROCanother_9o
  520 PROCtitle
  530 PROC9oodbye
  540 END
  550 :
  560      :::::
  570 :
  580 DEFPROCinitialise
  590 alphabet$="ABCDEFGHIJKLMNOPQ
RSTUVWXYZ"
  600 blue_back9round$=CHR$132+CHR
$157
  610 double_hei9ht_cyan$=CHR$134+
CHR$141
  620 9reen$=CHR$130
  630 yellow$=CHR$131
  640 ma9enta$=CHR$133
  650 white_back9round$="  "+CHR$15
7
  660 red$=CHR$129
  670 blue$=CHR$132
  680 cyan$=CHR$134
  690 flash$=CHR$136
  700 ENVELOPE1,3,0,0,0,0,0,0,121,
-10,-5,-5,120,120
  710 ENDPROC
  720 :
  730 DEFPROCtitle
  740 CLS
  750 PRINTblue_back9round$
  760 PRINTblue_back9round$;TAB(11
);double_hei9ht_cyan$;"ALPHABET TE
STER"
  770 PRINTblue_back9round$;TAB(11
);double_hei9ht_cyan$;"ALPHABET TE
STER"
  780 PRINTblue_back9round$;TAB(11
);double_hei9ht_cyan$;"******** **
****"
  790 PRINTblue_back9round$;TAB(11
);double_hei9ht_cyan$;"******** **
****"
  800 PRINTblue_back9round$'
  810 ENDPROC
  820 :
  830 DEFPROCintroduction
  840 PRINTTAB(6);9reen$;"This 9am
e will test you on your"
  850 PRINT" ";yellow$;"alphabet."
;9reen$;" Just to remind you,  the
"
  860 PRINT" ";yellow$;"alphabet";
9reen$;"is:"
  870 ENDPROC
  880 :
  890 DEFPROCdelay(time)
  900 TIME=0
  910 time=time*100
  920 REPEATUNTILTIME=time
  930 ENDPROC
  940 :
  950 DEFPROCalphabet
  960 PRINT'TAB(6);ma9enta$;
  970 RESTORE1070
  980 FORread_data=1TO26
  990   READletter$
```

H&H SOFTWARE

Software for the BBC Computer

Model B only

ALPHABETA A complete Word Processing Package with instantaneous response. Features include automatic wraparound, insert, delete, over-write, title centring, tabs, merging and other editing facilities. Up to 224 lines of 80 characters can be produced. For longer documents editing between files is possible. Price includes a manual and labels for the red keys.....£28.50

BILLIARDS This is a game of skill and cunning. Key in the direction, pace and backspin on your cue ball and watch the result. The computer does the rest.....£8.50

TESS A program for graphic designers or one just for fun. Tesselations are shapes that fit together leaving no gaps. You start by drawing a shape and the computer makes sure it will tesselate. When you're ready, fill the screen with many copies of the shape in a variety of colours, patterns and sizes. Animations are possible too, the tape includes an example.....£8.50

Model A or B (Family games with sound and colour)

SHAPE and **RACE** For 6 year olds upwards. In SHAPE, a tracer bounces inside a blue box and rebounds off a hidden shape. Can you identify the shape before your opponent. The RACE is between a hare and a tortoise. First one to the flowers wins.....£5.50

SIGNALS and **MAGIC** Make up sums to reveal a hidden shape. Guess the shape to get bonus points. Complete a magic square to get promoted and hear the fanfare. The higher your rank, the better the fanfare. 3 levels of difficulty.....£5.50

Prices include cased cassette, instructions, postage etc.
Please send orders and cheques/PO/Transcash (No. 614 131 707)

H&H, Dept M, 53 HOLLOWAY, RUNCORN CHESHIRE.
For further information please send S.A.E.


```
 1000    PRINTletter$;
 1010    SOUND1,1,read_data*8,5
 1020    SOUND2,1,read_data*8,5
 1030    SOUND3,1,read_data*8,5
 1040    PROCdelay(1)
 1050    NEXT
 1060 ENDPROC
 1070 DATAA,B,C,D,E,F,G,H,I,J,K,L,
M,N,O,P,Q,R,S,T,U,V,W,X,Y,Z
 1080 :
 1090 DEFPROCintroduction_continue
d1
 1100 PRINT'''" ";green$;"I hope yo
u can remember all that !"
 1110 PRINTTAB(6);green$;"I will g
ive you three letters in"
 1120 PRINT" ";green$;"the";yellow
$;"alphabet";green$;"and you have
to give me"
 1130 PRINT" ";green$;"the next on
e.  For example if I gave"
 1140 PRINT" ";green$;"you ABC,  y
ou would have to answer D."
 1150 ENDPROC
 1160 :
 1170 DEFPROCcontinue
 1180 PRINT'white_background$;red$
;"Press the";blue$;"RETURN";red$;"
key to continue..."
 1190 REPEATUNTILINKEY(-74)
 1200 ENDPROC
 1210 :
 1220 DEFPROCintroduction_continue
d2
 1230 PRINTTAB(6);green$;"When we
start you will have to"
 1240 PRINT" ";green$;"answer 10 q
uestions on the";yellow$;"alphabet
."
 1250 PRINT" ";green$;"The first t
hree letters will appear"
 1260 PRINT" ";green$;"in the midd
le of the screen.  You then";
 1270 PRINT" ";green$;"must press
the next letter in the"
 1280 PRINT" ";green$;"sequence -
So careful and make sure"
 1290 PRINT" ";green$;"you press t
he correct letter as you"
 1300 PRINT" ";green$;"only have o
ne try at each question !"
 1310 ENDPROC
 1320 :
 1330 DEFPROCinitialise_game
 1340 question_number=1
 1350 correct=0
 1360 wrong=0
 1370 ENDPROC
 1380 :
 1390 DEFPROCdefine_question
 1400 start=RND(23)
 1410 data$=MID$(alphabet$,start,4
)
 1420 question1$=LEFT$(data$,1)
 1430 question2$=MID$(data$,2,1)
 1440 question3$=MID$(data$,3,1)
 1450 correct_answer$=RIGHT$(data$
,1)
 1460 ENDPROC
 1470 :
 1480 DEFPROCset_question
 1490 PRINT" ";green$;"Question No
.";yellow$;question_number
 1500 PRINT''"  Please Press the n
ext letter:"
 1510 PRINT''TAB(15)double_height_
cyan$;question1$;" ";question2$;"
";question3$;flash$;"#"
 1520 PRINTTAB(15)double_height_cy
an$;question1$;" ";question2$;" ";
question3$;flash$;"#"
 1530 *FX15,1
 1540 REPEATanswer=GET
 1550    IFanswer>96ANDanswer<123TH
ENanswer=answer-32
 1560    UNTILanswer>64ANDanswer<91
 1570 answer$=CHR$answer
 1580 PRINTTAB(22,13);magenta$;ans
wer$
```

```
 1590 PRINTTAB(22,14);magenta$;ans
wer$
 1600 ENDPROC
 1610 :
 1620 DEFPROCmark
 1630 IFanswer$=correct_answer$THE
Nmark=TRUE:correct=correct+1:ELSEm
ark=FALSE:wrong=wrong+1
 1640 IFmark=TRUE THENPRINTTAB(22,
13);green$;TAB(22,14);green$
 1650 IFmark=FALSE THENPRINTTAB(22
,13);red$;TAB(22,14);red$
 1660 IFmark=TRUE THENPRINTTAB(14,
18);green$;"**********";TAB(14,19
);green$;"*          *";TAB(14,20);
green$;"* RIGHT ! *";TAB(14,21);gr
een$;"*          *";TAB(14,22);gree
n$;"**********"
 1670 IFmark=FALSE THENPRINTTAB(14
,18);red$;"**********";TAB(14,19)
;red$;"*          *";TAB(14,20);red
$;"* WRONG ! *";TAB(14,21);red$;"*
          *";TAB(14,22);red$;"*****
*****"
 1680 IFmark=TRUE THENPROCup
 1690 IFmark=FALSE THENPROCdown
 1700 question_number=question_num
ber+1
 1710 ENDPROC
 1720 :
 1730 DEFPROCup
 1740 FORsound=100TO200
 1750   SOUND&11,1,sound,1
 1760   SOUND&12,1,sound,1
 1770   SOUND&13,1,sound,1
 1780   NEXT
 1790 ENDPROC
 1800 :
 1810 DEFPROCdown
 1820 FORsound=200TO100STEP-1
 1830   SOUND&11,1,sound,1
 1840   SOUND&12,1,sound,1
 1850   SOUND&13,1,sound,1
 1860   NEXT
 1870 ENDPROC
 1880 :
 1890 DEFPROCoverall_marks
 1900 PRINT" ";green$;"You answere
d";yellow$;"10";green$;"questions"
 1910 PRINT" ";green$;"and got";ye
llow$;correct;green$;"of them corr
ect"
 1920 ENDPROC
 1930 :
 1940 DEFPROCcomputers_comment
 1950 IFcorrect=10THENPRINT" ";gre
en$;"You did extreemly well to ans
wer all"'" ";green$;"the questions
 correctly."
 1960 IFcorrect=9THENPRINT" ";gree
n$;"You did very well to answer al
l but"'" ";green$;"one of the ques
tions correctly."
 1970 IFcorrect=8THENPRINT" ";gree
n$;"You did well to answer eight o
f the"'" ";green$;"questions corre
ctly."
 1980 IFcorrect=7THENPRINT" ";gree
n$;"You did fairly well to get sev
en of"'" ";green$;"the questions c
orrect."
 1990 IFcorrect=6THENPRINT" ";gree
n$;"You didn't do too bad to get 6
 of the"'" ";green$;"the questions
 correct."
 2000 IFcorrect<=5THENPRINT" ";gre
en$;"You should really of got at l
east 6"'" ";green$;"questions corr
ect.  Practice your"'" ";yellow$;"
alphabet";green$;"a bit more and t
hen try the"'" ";green$;"test again
."
 2010 ENDPROC
 2020 :
 2030 DEFPROCanother_go
 2040 PRINT'" ";green$;"Would you
like another go ?"
 2050 PRINT'white_background$;TAB(
11);red$;"Press";blue$;"""Y""";red$
;"or";blue$;"""N"""
```


BBC FORTH BBC FORTH

Level 9 Computing are pleased to announce a new compiler for the increasingly popular language FORTH on BBC A & B micros.

FORTH is a powerful, extensible language, simple in concept & use, that encourages structured programming and is good both for large programs and simple one-off utilities.

"r q FORTH" is supplied on cassette, with a 70 page technical manual and a summary card, for £15 including VAT/P&P. It:

* runs up to 10 times faster than BBC BASIC;
* includes a full screen editor, tailored for the BBC;
* is FORTH-79 STANDARD and provides fig-FORTH facilities so it is simple to use programs published in either dialect;
* provides 260 FORTH words (i.e functions) initially;
* is readily extensible (even defining words can be defined);
* allows full use of the M.O.S facilities from within FORTH;
* allows use of all graphic modes, even 0-2 (just!);
* provides recursion simply and naturally;
* needs no added hardware and will run on an unexpanded 'A';
* is available NOW.

BBC adventures

Colossal Adventure: The classic mainframe game "Adventure" with all the original treasures & creatures & 70 extra rooms.

Adventure Quest: Through forest, desert, mountains, caves, water, fire, moorland and swamp on an epic quest vs Tyranny.

Dungeon Adventure: NEW! The dungeons of the Demon Lord have survived His fall. Can you get to their treasures first?

Every Level 9 adventure is packed with puzzles and has over 200 individually described locations - a game can easily take weeks to complete! Only data and code compression allow so much to be provided.

Each adventure needs 32K and costs £9.90, including P&P/VAT.

Send order or SAE for catalogue, describing your computer, to

LEVEL 9 COMPUTING

Dept L, 229 Hughenden Road, High Wycombe, Bucks. HP13 5PG

```
 2060 REPEATcontinue=GET
 2070   UNTILcontinue=78ORcontinue
=89
 2080 IFcontinue=89THENRUN
 2090 ENDPROC
 2100 :
 2110 DEFPROCgoodbye
 2120 PRINT" ";green$;"Goodbye"
 2130 PRINT'"   ";
 2140 END
 2150 :
 2160 DEFPROCerror
 2170 IFERR<>17THENREPORT:PRINT" a
t line ";ERL
 2180 PROCtitle
 2190 PRINT" ";green$;"You Pressed
 the";yellow$;"ESCAPE";green$;"key
 !"
 2200 PRINT'" ";green$;"Please";re
d$;"do not";green$;"Press it again
."
 2210 PROCdelay(5)
 2220 RUN
 2230 :
 2240     :::::
 2250 :
 2260 REM  Alphabet Tester
 2270 REM  by Paul Barbour
 2280 :
 2290 REM     Version 1.0
 2300 :
 2310 REM (C) LASERBUG 1982
 2320
 2330
 2340
```

speeding up your programs

One question people ask me that is surprising is "I've got this program but it runs too slowly. Should I change it into machine code?" If you try suggesting to people to look in the manual on pages 194/195 they think you're stupid. "That won't do any good" they say.

Well, BBC BASIC is extremely fast. Out of all the machines that Personal Computer World has reviewed, the BBC Micro was the third fastest (ref: November '82, p.111) beaten only by the DAI and Olivetti M20. Although obviously there are times when speed can only be obtained to satisfaction by using machine code but generally by following the few simple tips given on pages 194 and 195 of the user guide your program can be speeded up enormously. Here I plan to examine exactly how much.

FOR . . . TO . . . NEXT loops can be speeded up in two ways – firstly by using an integer variable as the control parameter and secondly by not putting the control variable in the next statement. Below are two test programs. The first is a normal program and the second has had the two techniques applied to it.

```
>L.
    10TIME=0
    20FORX=1TO1000
    30NEXTX
    40PRINTTIME/100
>RUN
        0.64
>L.
    10TIME=0
    20FORX%=1TO1000
    30NEXT
    40PRINTTIME/100
>RUN
        0.19
```

As you can see this results in a saving of 70.3% of the execution time.

Another method of speeding up a program given in the user guide is to replace IF . . . THEN loops by REPEAT . . . UNTIL ones. Below this has been done, along with the variables changed from real to integer.

```
L.
    10TIME=0
    20X=0
    30X=X+1
    40IFX<1000THEN30
    50PRINTTIME/100
>RUN
        2.72
>L.
    10TIME=0
    20X%=0
    30REPEATX%=X%+1
    40UNTILX%=1000
    50PRINTTIME/100
>RUN
        1.54
>
```

This speeds up the routine by 43.4%.

The third and final method we will look at by changing division from real to integer when only an integer value is needed.

```
    10TIME=0
    20X=0
    30REPEAT
    40A=RND(12)
    50B=RND(144)
    60C=B/A
    70X=X+1
    80UNTILX=1000
    90PRINTTIME/100
>RUN
       13.14
>L.
    10TIME=0
    20X%=0
    30REPEAT
    40A%=RND(12)
    50B%=RND(144)
    60C%=B%DIVA%
    70X%=X%+1
    80UNTILX%=1000
    90PRINTTIME/100
>RUN
       10.42
```

This results in a time saving of 20.7%.

From the three results I have given you here you can see that the time savings you can make are considerable. Hence if your program is working too slowly do try what the manual suggests. If a specific routine in your program takes 30 seconds and has three loops, doing what the manual suggests could take that time down to 8.91 seconds.

Paul Barbour

8 computer conversions part I

The idea of this article is to assist people who either want to convert programs from a BBC Micro to another machine or from another machine to a BBC Micro. The article will be in four parts, this months part covering commands from A to G.

ABS: Standard BASIC and available on most machines.

ACS: Gives the arc-cosine of the number in radians. The command is not normally found in most BASICs but can be substituted by an appropriate formula.

ADVAL: Reads the value of the analogue-digital convertor. Most machines do not have ADC's built in – those that do generally read them using PEEKs.

AND: Standard BASIC and available on most machines.

ASC: Returns the ASCII code of the character. Standard on most machines but known as CH on the Atom and CODE on the ZX range.

ASN: Same as ACS except gives arc-cosines.

ATN: Gives the arc-tangent of its radian argument. Is standard on most machines as it is required for many mathematical formula.

BGET#: This command inputs a single byte from file (tape/disk). It is not standard, but on computers that it is implemented on its syntax is the same.

BPUT#: Same as BGET#except that the byte is sent to file.

CALL: This calls an assembler subroutine. It is not normally implemented (sometimes replaced by PEEKs and POKEs) and the locations are not compatible between different mahines. The Atoms version of CALL is LINK.

CHAIN: This loads and runs the next program on file. It is only implemented on the Apple and BBC Micro although a routine exists for a similar function on the ZX81 (and Spectrum ?).

CHRS: Standard BASIC and available on most machines. Atom equivalent is just S.

CLEAR: Clears all/some variable from the computers memory. Standard on most machines although sometimes the command is CLR.

CLOSE#: Closes either the specified or all files previously opened. Not always implemented on micros.

CLG: Clears graphic screen. Not normally implemented.

CLS: Standard BASIC and available on most machines.

COLOUR: Although the function is standard on all colour computers, the command isn't. Several use POKEs to change the colour. The Atari uses SETCOLOR although as well as controlling colour, it also defines hue and luminance. The Spectrum uses the commands INK to define the foreground colour and PAPER to define the background one.

CONT: This command re-starts a program after it has been ESCAPEd from. Unfortunately this command is lacking from BBC BASIC.

COS: Standard BASIC and available on most machines.

COUNT: This command counts the number of characters printed since the last CR and is not generally implemented.

DATA: Standard BASIC and available on most machines.

DEF: This command defines a function (and procedures on the BBC Micro) and is generally implemented.

DEG: This converts angles that are in radians to degrees. For micros without this function (most computers!) 1 radian is the equivalent of 57.29577951 degrees.

DIM: Standard BASIC and available on most machines.

DIV: This performs integer division and is not standard BASIC.

DRAW: This command moves the graphics cursor to the specified point. Equivalents are available on some of the machines with graphic capabilities.

END: Standard BASIC and available on most machines.

ENDPROC: Specifies the end of a procedure (unique to BBC).

ENVELOPE: Defines the sound envelope (unique to BBC).

EOF: End of file pointer. Available on some micros.

EOR: Exclusive-Or. Available on some micros.

ERL: A pseudo-variable holding the line number of the last error that occured.

EVAL: Evaluates the function in the string. Some routines to perform similar functions on other micros have been published.

EXP: Standard BASIC and available on most machines.

FALSE: A pseudo-variable giving the value Ø. Implemented on a few micros.

FOR . . . TO . . . NEXT: Standard BASIC and available on most Micros. Most versions also allow the step size to be altered.

FRE: Gives the amount of free memory space. On the BBC Micro this can be found by entering PRINTHIMEM-TOP-PAGE.

GCOL: Defines the logical graphics colour. Normally implemented to a lesser extent on most colour micros.

GET: Returns the ASCII value of the next key pressed. (On some computers GET is used for file handling – see INPUT#)

GET: Same as above put puts entered key into a string.

GOSUB: Standard BASIC and implemented on most micros.

GOTO: Standard BASIC and implemented on most.

NEXT MONTH: **H to M.**

Paul Barbour

competition

As it is Christmas this month we thought we'd give you a competition with a seasonal flavour to it. Ever tried anagrams? What we want you to do this month is to write a program that will print up all the possible combinations of the word CHRISTMAS. I **DO NOT** want a list of all the words, simply the program that will produce them. How the program works is up to you – there are no rules on how you should write the program. The prize as usual is 3 months free subscription to LASERBUG (to be added on to your current subscription) and the closing date is January 15th.

oddspot

Below is a short little program which, in the true tradition of Oddspot, should leave you with no idea what the program does until it is actually run.

```
>L.
   10 REM (C) LASERBUG 1982
   20 ONERRORGOTO100
   30 MODE2:VDU23;8202;0;0;0;5
   40 REPEATGCOLRND(4),RND(16)
   50   GCOLRND(4),RND(16)
   60   VDU23,224,RND(255),RND(255
),RND(255),RND(255),RND(255),RND(2
55),RND(255),RND(255)_.
   70   MOVERND(1280),RND(1024)
   80   VDU224,19,RND(16),RND(16),
0;0;
   90   UNTIL0
  100 VDU4,20
```


GAMES THAT WILL REALLY BYTE INTO THE MEMORY OF YOUR MODEL B

Remember those marvellous old board games you used to play. Hours of enjoyment are guaranteed.

No.1 INHERITANCE: A 2 part game. Prove your financial acumen in Part 1 by investing wisely at the STOCK and METAL MARKETS; if desperate try the CASINO or the HORSE RACES. If you are successful you will enter the world of BIG BUSINESS in Part 2. Find the SECRET FORMULA for PARADISE COLA: manufacture and market the drink; COPE with STRIKES, FIRES, FRAUDS, CASH SHORTAGES, ETC. Your ultimate aim is to become a millionaire!

A MAMMOTH GAME PACKED FULL OF FEATURES

No. 2 GREAT BRITAIN LIMITED: You are PM and Chancellor of "GREAT BRITAIN". You must select the Party you wish to represent and your AIM is to stay in office for as long as possible. You must control INFLATION and UNEMPLOYMENT, maintain the EXCHANGE RATE, introduce SOCIAL REFORMS and stay POPULAR. The game is split into sectors: COUNTRY PROFILE, SHOPPING BASKET, BUDGET DAY, REFORM OPPORTUNITIES, MANIFESTO, and most important ELECTION NIGHT (a telling time).

A COMPLEX GAME THAT YOU WILL NOT TIRE OF IN A HURRY

ALL GAMES ARE ON QUALITY CASSETTES WITH FULL INSTRUCTIONS

£5.95 each. **Both games for £10.95.**

SIMON W. HESSEL (Dept L)
15 Lytham Court, Cardwell Crescent
Sunninghill, Berks. *TEL:* **Ascot 25179**

All orders despatched within 24 hours

One year guarantee
Money back if not satisfied

As it's Christmas this month we figured that a great deal of you would be investing your hard earned cash into software for your computer. Hence below is a much larger Softreview than usual which hopefully includes a good selection.

ARCADE GAME PROGRAM: Zombies
SUPPLIER: Software for All, 72 North Street, Romford, Essex. 0708-752862
REQUIRES: 32k
PRICE: £7.95
DESCRIPTION OF PROGRAM: You may remember back in issue 4 we reviewed a tape from this company with Cobra and Robo-Swamp on it. This program is in fact a greatly improved version of Robo-Swamp - Zombie Island. For those who do not know the game, the idea is that you are on an island being chased by the Zombies. The island is full of swamps and the only way to kill the Zombies is to make them fall into one of these by leading them along, making sure that you don't fall into any swamps yourself. The program is well written and presented and makes an interesting and different game.

PRESENTATION: ★★★★★
ADDICTIVE QUALITY: ★★★★
USE OF GRAPHICS: ★★★★
VALUE FOR MONEY: ★★★

--o0o--

UTILITY PROGRAM: Diss
SUPPLIER: CJE Microcomputers, 25 Henry Avenue, Rustington, W. Sussex, BN16 2PA. 09062-6647
REQUIRES: 16k (?)
PRICE: £5.00
DESCRIPTION OF PROGRAM: This program performs two functions – a disassembler (see LASERBUG Issue 5 for our own disassembler) and a memory dump. The disassembler itself is fairly standard as is the memory dump routine. With the memory dump you can scroll up or down one line by using the cursor keys. On both programs you can use L to list out the last page. You can move between the two routines by pressing ESCAPE. Unfortunately the listing is protected and although this is easy to overcome (although I am not at liberty here to tell you how) it is unadvisable on a program that could do with more features which you cannot add if the listing is protected. For instance there is no facility to put the disassembled code out to a printer! This is vital if you are to use a dissambler properly. The program itself is reasonable but lack of potential has a bad effect on it.

PRESENTATION: ★★
RESPONSE SPEED: ★★
SIZE: 4.4k
USEFULNESS: ★★
VALUE FOR MONEY: ★★

--o0o--

ARCADE GAME PROGRAM: Beebmunch
SUPPLIER: Sinclair (IKJ Software), 55 Fitzroy Road, Bispham, Blackpool, Lancs.
REQUIRES: 32K
PRICE: £5.95
DESCRIPTION OF PROGRAM: I'll give you two guesses what Beebmunch is – yes you guessed it, this is another try to implement Pacman. Several companies have tried to imitate this game on the BBC Micro but so far I am afraid Acornsoft's Snapper is the only one I know of that has come even close. Sinclair's version is hard to control using a strange combination of keys and the ghosts move at greatly varying speeds from very slow to moving from one side of the screen to the other almost instantly. The power pills last for an extremely short time as well compared with the original program.

PRESENTATION: ★★★
ADDICTIVE QUALITY: ★★★
USE OF GRAPHICS: ★★★
VALUE FOR MONEY: ★★★

--o0o--

ARCADE GAME PROGRAM: The Frog
SUPPLIER: James Hager,Basset Street, Cambourne, Cornwall, TR14 8SW
REQUIRES: 32k
PRICE: £6.50
DESCRIPTION OF PROGRAM: The game plays the game of Frogger. You are a frog who must first cross a four lane motorway and then a river with 4 sets of creatures swimming across it. It is very well presented and although the colours in certain spots need a lot to be desired it plays a very hard game. The software from "cottage companies" such as this one tends in general to be rather poor. This game is one of the better contributions and is enjoyable.

PRESENTATION: ★★★★
ADDICTIVE QUALITY: ★★★
USE OF GRAPHICS: ★★★
VALUE FOR MONEY: ★★★

--o0o--

BOARD GAME PROGRAMS: Gomoko/Othello
SUPPLIER: '42' Software, 18 Mansel Street, Swansea, SA18 5SG.
REQUIRES: 16k
PRICE: £7.95
DESCRIPTION OF PROGRAMS: This cassette contains two versions of standard games. The first, Gomoko, is a fairly standard version of the game – nothing at all special here. The computer plays a good game but in relation takes a while to make its move. Both implementations are OK in themselves but not worth £8.

PRESENTATION: ★★★
USE OF GRAPHICS: ★★★
RESPONSE SPEED: ★★★
STANDARD OF GAME: ★★★★
VALUE FOR MONEY: ★★

--o0o--

MISCELLANEOUS PROGRAM: Distances
SUPPLIER: Micro-Aid, 25 Fore Street, Praze-an-Beeble, Cambourne, Cornwall, TR14 0JX. 0209-831274
REQUIRES: 16k
PRICE: £2.95
DESCRIPTION OF PROGRAM: This program enables you to find distances between certain places in a defined area. The area can either be the UK, Europe or the whole world. You are presented with an outline map of the area, a list of names and an entry box. You enter the names of the two towns/cities/countries and the computer will tell you the distance between them in miles and kilometres. A semi-useful program with a fairly good set of hi-res maps and low cost. The best program I've seen so far from this company.

PRESENTATION: ★★★
USE OF GRAPHICS: ★★★★
VALUE FOR MONEY: ★★★★

--o0o--

GAMES PROGRAMS: Games of Strategy (Galaxy/Gomoku/Masterbrain/Reversi)
SUPPLIER: BBC Soft, 35 Marylebone High Street, London, W1M 4AA
(All programs copyright © Acornsoft)
REQUIRES: 16k
PRICE: £10.00
DESCRIPTION OF PROGRAM: There are four programs on this tape as described above. The first, Galaxy, is another Star Trek type game. Out of the many games of this type I have seen before for the BBC Micro, this one I am afraid is the poorest. The game itself is bug free but is rather hard to use compared with other versions. Gomoku is another fairly standard implementation of this game (aren't they all?) using teletext graphics. No skill levels are offered and hence the game is fairly hard to beat, playing a good game from the start. Masterbrain is a mastermind game where you play against the computer with you attempting to break his code and him attempting yours at the same time. The game is fairly good and the computer is very good to pick up if you try to cheat him! The final program is Othello and is my favourite version of this game. The method of determining your move is quite novel and the computer plays an excellent game.

PRESENTATION: ★★★
STANDARD OF GAMES: ★★★★
RESPONSE SPEED: ★★★
VALUE FOR MONEY: ★★★

--o0o--

ARCADE GAME PROGRAM: Martians
SUPPLIER: Program Power, 8/8a Regent Street, Chael Allerton, Leeds 7
REQUIRES: 32k
PRICE: £5.95
DESCRIPTION OF PROGRAM: Martians is a different kind of game similar in many respects to the Atari VCS game Kaboom! Martians are falling from the skys and you must destry them by making them fall onto your forcefield which you can move left and right. If the Martians get 6 deep or more then the invasion has been successful and you lose. To make the game harder, a few of the Martians are a different colour and if you touch

these with your forcefield you are intantly destroyed. An interesting game which makes a change from the normal invader types.

PRESENTATION: ★★★
ADDICTIVE QUALITY: ★★★★
USE OF GRAPHICS: ★★★
VALUE FOR MONEY: ★★★★

–o0o–

GAME PROGRAM: Link 4 Plus
SUPPLIER: ABC Software, Chorley, Lancs.
REQUIRES: 16k
PRICE: £6.95
DESCRIPTION OF PROGRAM: This program is a version of the popular game Connect 4. If we look at the game played, this is quite good and reasonably fast. It certainly gives you a run for your money (unless you are very good at this game) and offers 4 skill levels. Its graphics however could be improved greatly. The game used MODE 6 graphics for the actual game which is rather a surprise as most versions of this use MODE 5 for its graphical qualities. Although the game itself is good, the graphics make it less interesting than it need be.

PRESENTATION: ★★★
STANDARD OF GAME: ★★★★
USE OF GRAPHICS: ★★
VALUE FOR MONEY: ★★★

–o0o–

GAME PROGRAM: Superhangman
SUPPLIER: SRL Software, 80 Gravesend Road, Strood, Medway, Kent, ME2 3PN.
REQUIRES: 16k
PRICE: £3.00
DESCRIPTION OF PROGRAM: Although the standard of the words used in this Hangman might be 'super', the quality of the graphics are not (compared with IJK Software's – see last month). The game only uses teletext graphics but to good effect and at only £3 for the program represents excellent value for money.

PRESENTATION: ★★★
STANDARD OF GAME: ★★★
USE OF GRAPHICS: ★★★
VALUE FOR MONEY: ★★★★

–o0o–

GAME PROGRAM: Billiards
SUPPLIER: H & H Software, 53 Holloway, Runcorn, Cheshire
REQUIRES: 32k
PRICE: £8.50
DESCRIPTION OF PROGRAM: This program is basically Billiards except for a few minor changes in areas such as scoring. The program shows an overhead view of the table with you and your opponents balls (and of course the cue ball). To hit the ball you have to go through three stages. The first is positioning a 'cursor' to mark where you are aiming the ball for, second is the spin which determines how the ball stops and thirdly how much energy you are going to put into the hit. Full instructions are included in the program

PRESENTATION: ★★★
ADDICTIVE QUALITY: ★★
USE OF GRAPHICS: ★★★
VALUE FOR MONEY: ★★★

–o0o–

BUSINESS GAME PROGRAM: Inheritance
SUPPLIER: Simon W Hessel Software, 15 Lytham Court, Cardwell Crescent, Sunninghill, Berks.
REQUIRES: 32k
PRICE: £5.95
DESCRIPTION OF PROGRAM: The first thing you notice about this program is its length. The program is 26k long (!!!) and so full marks must go simply to the person who wrote it, no matter what the game is like. If you are fed us with zapping the invaders and find adventures a bit too unreal then Inheritance might prove the game for you. The game works in two parts. The first part involves you making £100000 out of the £10000 you inherit through stock markets, metal exchanges and gambling enterprises – all within 26 weeks. The second part (if you manage the first successfully) involves you in making £1000000 out of the £100000. The program runs in teletext mode (what else with a 26k program) and makes a pleasant change from the normal type of game.

PRESENTATION: ★★★★
STANDARD OF GAME: ★★★
VALUE FOR MONEY: ★★★★

GRAPHICS PROGRAM: Creative Graphics (36 programs)
SUPPLIER: Acornsoft, 4a Market Hill, Cambridge, CB2 3NJ.
REQUIRES: 16k (Out of the 36 programs on this tape all but two of the programs will work fine on the Model A. The two that won't can be easily altered and how to do this is given in the instructions.
PRICE: £9.95 (separate book not reviewed here, £7.50)
DESCRIPTION OF PROGRAMS: The first thing I should mention is that this is designed primarily as a pack – book and cassette. Here we are only looking at the cassette (ask Acornsoft why they only sent me the programs to review, not me?) As said above there are 36 programs on this tape, all of them illustrating the graphical features of the BBC Micro. There are several different types of programs that appear on the cassette. The first three for example are designed to demonstrate different methods of performing the same thing (i.e. three different equations to draw a circle). Some programs make patterns by repeating the same shape, others by following a particular equation, a few rotate 3-D shapes and the last couple of programs produce animated displays. If you are interested in graphics I am sure that this pack will give you a good few ideas, as well as showing off your computer to its full capability.

USE OF GRAPHICS: ★★★★★
STANDARD OF GRAPHICS: ★★★★★
VALUE FOR MONEY: ★★★

–o0o–

BUSINESS PROGRAM: Desk Diary (Address Book & Planner)
SUPPLIER: Acornsoft (address above)
REQUIRES: 16k (although much more data can be held on 16k)
PRICE: £9.95
DESCRIPTION OF PROGRAM: Desk Diary consists of two programs and hence we will look at each one separately. Address Book performs a very good and comprehensive function and can hold over 200 names. Each persons entry consists of name, address, postcode, telephone number and two lines of any extra information required. The database can be completely edited and functions available to you are to (i) find an entry by name, (ii) find an entry by any other date and (iii) display all or some of the entires to screen and/or printer with all or certain information being given. Planner is a little more complicated. Basically it is a normal diary with several added features. Initially it asks for the date and time (with a 24-hour clock feature) and then gives you three selections. First is "day-to-day" in which you can make individual entries. Each entry can be either an appointment, reminder or unavailable. Also here you can delete entries or flick backwards or forwards through the diary. Plan ahead lists out all the reminders for the month of your chosing along with a calendar. Coming soon prints out all entries between 1 and 30 days ahead (depending on your choice). Both programs have the facility to load/save the databases to tape. I feel that they are very useful aids and would certainly recommend them. At the beginning this was described as a business review – these programs are just as suitable for the home user.

PRESENTATION: ★★★★
MAXIMUM SIZE: 200+ entries address book/300+ planner (32k)
FLEXIBILITY: ★★★★
VALUE FOR MONEY: ★★★

–o0o–

EDUCATIONAL PROGRAM: Early Learning (Fractions/Multiplication/Table/Smalldozer/Funnyman)
SUPPLIER: BBC Soft (address above)
REQUIRES: 16k
PRICE: £10.00
DESCRIPTION OF PROGRAM: Firstly let me point out that this review was carried out with the help of teachers. The first program on this tape is Fractions which as the name suggests tests the children on different aspects of fractions (the different types of fractions, changing one type of fraction to another, adding fractions). The program is very good in several ways. Firstly its presentation I found excellent. When a child takes too long to enter the answer the computer offers to help. If you accept then the child is shown graphically what they are trying to do. Table sets out to test you on general multiplication. You can choose a specific table or go through a test of 20 questions. You have 10 seconds to answer each and once you have finished all the questions they are marked in front of your eyes and a breakdown is given of the areas you need help in. Multiplication takes a child step by step through long multiplication with a test when required. Smalldozer is designed for young children and helps them on "magic e" words. Teletext graphics are used to good effect to reinforce principles. The final program, Funnyman, is a "toned down" version of Hangman. Instead of a hanging as the penalty water is dropped down by a clown. All the words are connected to the circus but you can easily alter this in the program. Unfortunately because of the limited space available to me I cannot go into detail about each

continued on page 14

At last we have gathered together a group of BBC Micro's, put in a good many man-hours and finally have the results of the LASERBUG 1982 Questionnaire. We must thank all those who made the effort to fill in and return the questionnaire as it provided invaluable information. The 1983 questionnaire will appear in the June '83 issue to coincide with the Earls Court Exhibition. It will be repeated in the September '83 edition as well.

1. Sex Of BBC Computer Owners
96% Male
4% Female

2. Age Groups That BBC Computer Owners Fall Into
12% Under 18
24% 18 to 26 inclusive
49% 27 to 40 inclusive
9% 41 to 50 inclusive
6% 50 plus

3. Average Age Of Owners
28 years

4. Model Of Computer Ordered
26% Model A
74% Model B

5. When Computers Were Ordered
13% September '81
10% October
6% November
10% December
34% January '82
7% February
6% March
14% April

6. When Computers Arrived
17% March '82
12% April
6% May
6% June
11% July
11% August
37% Hadn't arrived when questionnaire was filled in

7. Delivery Time From BL Marketing
9% 3 months
10% 4 months
15% 5 months
11% 6 months
40% 7 months
15% 8 months

8. Average Delivery Time
6 months

9. People With Previous Experience
66% Had some previous experience
34% Had no previous experience

10. If People Did Have Previous Experience, On What Micros Was That
27% ZX-range (80/81/Spectrum)
27% Apple II
21% PET
10% RM380Z
9% TRS-80
6% Video Genie

11. The Main Uses That The BBC Computer Will Be Put To
37% Education
30% Games
27% Business
23% Hobby
17% Programming
17% Entertainment/Pleasure
10% Electronics

12. Why People Bought The BBC Computer
47% Overall value for money
33% Graphics
27% Expandability
15% Best Specification
13% Magazine reviews
7% All British
7% Sound
5% Well supported in future

13. The BBC Computer's Strengths
77% Graphics
35% Expandability
29% Good BASIC
19% Sound
16% Speed
16% Assembler
13% Tube/2nd Processor
13% Value for Money
13% Keyboard
10% Teletext Compatible
10% Interfaces
10% ADC
6% 32K memory

14. The BBC Computer's Weaknesses
32% Delivery
20% Poor documentation
16% Amount of RAM left in higher resolution modes
16% Reliability
12% Unreliable CFS
12% Weak case
12% After sales service
12% Maximum memory
12% Heat that PSU works at
8% Noisy Speaker
8% Position of cursor/BREAK/ESCAPE keys
8% Heat that PSU works at

15. Peripherals That People Plan To Buy
75% Floppy Disks
69% Printer
28% Teletext Adaptor
28% Colour Monitor
22% Joysticks
13% Model B Upgrade
13% Prestel Adaptor
9% 2nd Processor
9% Word-processor
9% Speech Synthesis

16. Whether People Would Go To A National Meeting (Probably In London)
38% Yes
31% Probably
31% No

17. Whether People Would Go To A Local Meeting
72% Yes
25% Probably
3% No

SAVE £60-£80 (+ VAT) when you order your superb new Type 3 printer from Datatech, the Epson specialists.

We also have large stocks of Epson sundries including cartridge ribbons, dust covers, fanfold paper, continuous labels, etc.

For FREE BROCHURE and special DISCOUNT OFFER write now to:

DATATECH LTD (LB)
3 BRAMHALL CLOSE, TIMPERLEY,
ALTRINCHAM, CHESHIRE, WA15 7EB

18. Whether People Would Be Willing To Help Organise Such A Meeting
63% No
22% Yes
15% Probably

19. What People Would Like To See At These Meetings
73% Exchange of ideas
45% Exchange of software
32% Talks
18% Exchange of hardware hints
14% Exchange of problems

20. Popularity Of LASERBUG Articles

20.1 – Issue 1
1st Teletext Graphics Part I
2nd User-definable Characters
3rd Hardreview
4th Bookreview
5th Labyrinth
6th Softreview

20.2 – Issue 3
1st Programmers Corner
2nd Bookreview
3rd Editorial
3rd Softreview
5th Prism
6th Oddspot
7th Screen Dump
8th Telesoftware
9th *FX Part II
10th Spectrum – Marvel or Fraud
11th Artillery
11th Letters
13th Life
14th Software Standards
15th Line Structure and Merging
16th Education
17th Calender

21. What People Would Like To See More Of In LASERBUG
58% Hints and tips
33% Programs
25% Queries Page
21% Reviews
17% Educational Software
16% Machine Code
13% Applications
13% Games
10% Interfacing
7% Applications

22. What People Would Like To See Less Of In LASERBUG
90% Nothing
7% Games
3% Errors

NOTES:

Some people were given copies of the preliminary results of the questionnaire.

The final results are completely different from those and only the above is correct.

Some questions do not add up to 100 because quite often people put down more than one answer.

Most categories are those you made up, not us.

Our opinions of the results appears in the editorial at the beginning of the magazine.

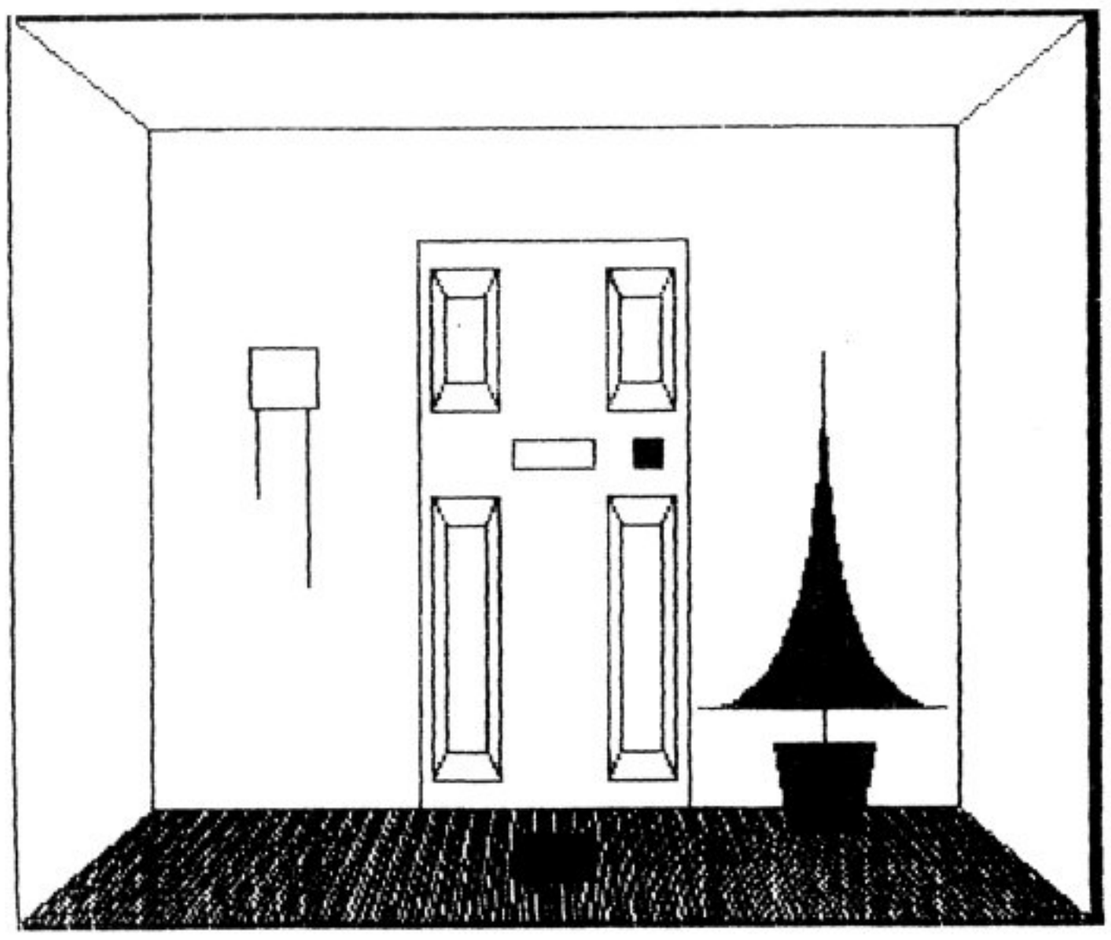
a Christmas scene

The third program of our seasonal series appears below to get you in the mood for the Christmas festivities. It is considerably longer than the usual contributions here but as it is Christmas and you have a holiday coming up we thought you would enjoy a larger program.

To encourage you to type in the program we have two "screen dumps" below from various parts of the program. Unfortunately it is only suitable for a 32k machine but if you only have a 16k it could possibly be changed by putting the MODE0 work into MODE4 and alter the MODE1 material into MODE5.

I hope you all enjoy the program – it is our alternative to sending you all Christmas cards!

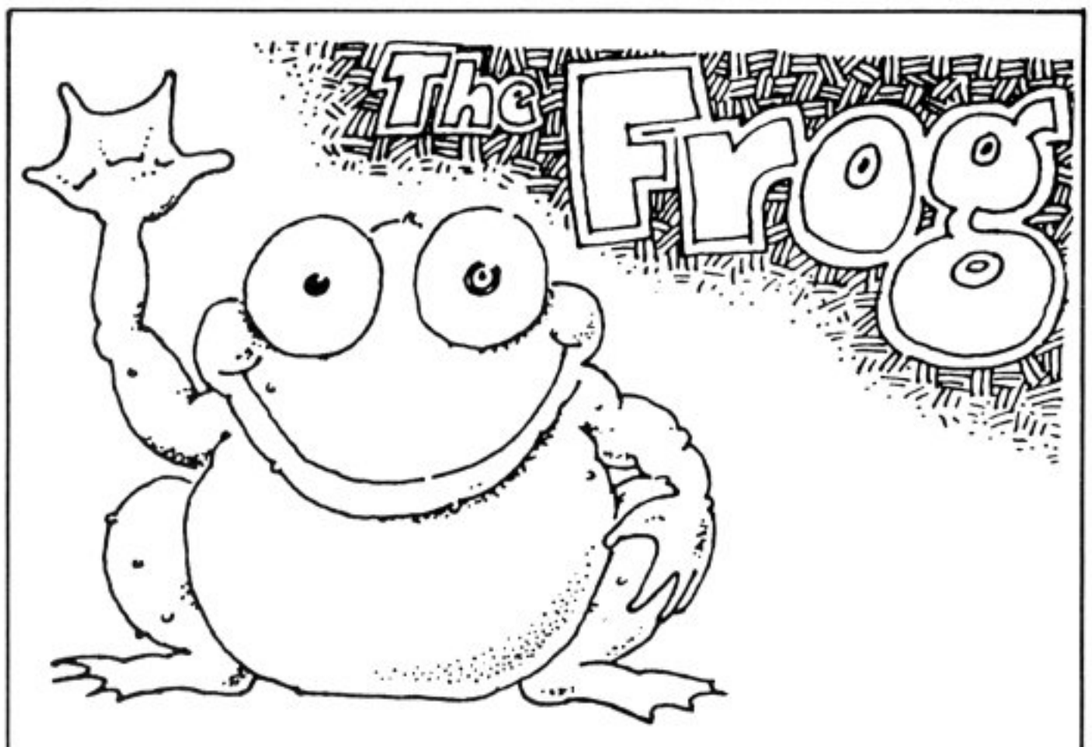
Paul Barbour



```
L.
   10 REM      A Christmas Scene
   20 :
   30 REM (Seasonal 3 - December)
   40 :
   50 REM        by PAUL BARBOUR
   60 :
   70 REM             2/11/82
   80 :
   90 REM          Version 1.1
  100 :
  110 REM Takes up ~6.03k memory
  120 :
  130 REM and uses MODEs 0,1 & 7
  140 :
  150 REM        Requires 32k
  160 :
  170 REM     (C) LASERBUG 1982
  180 :
  190
  200 MODE7:VDU23;8202;0;0;0;
  210 PROCname
  220 CLS
  230 PROCmessage
  240 MODE0:VDU23;8202;0;0;0;19,0,
4;0;0;
  250 PROCroom
  260 PROCdoor
  270 PROCcarPet
  280 PROCtree
  290 PROCdoorbell
  300 PROCPost
  310 MODE1:VDU23;8202;0;0;0;19,0,
4;0;0;
  320 PROCenvelope
  330 CLS
  340 PROCcard_on_screen
```

```
350 PROCcard_shrink
360 PROCcard_turn
370 CLS
380 PROCoutside_card
390 PROCmerry_christmas
400 PROCopen_card
410 PROCinside_card
420 PROCgoodbye
430 HIMEM=31744:END
440 DEFPROCname
450 PRINTCHR$129"MAY YOUR HUMBLE
 COMPUTER OFFER YOU"'CHR$129"SEASO
NS GREETINGS..."
  460 PRINT''CHR$130"I KNOW I'VE A
SKED YOU THIS QUESTION"'CHR$130"MA
NY TIMES BEFORE BUT PLEASE COULD"'
CHR$130"YOU ENTER YOUR NAME:"
  470 PRINT''CHR$131;"> ";:INPUT""
name$
  480 IFLEN(name$)>14THENPRINT''''C
HR$133"That is too long - Please e
nter"'CHR$133"something shorter...
":GOTO470
  490 ENDPROC
  500 DEFPROCmessage
  510 PRINTTAB(0,7)CHR$133"TO:"CHR
$134name$
  520 PRINT''''TAB(9)CHR$141CHR$131
"A CHRISTMAS SCENE"'TAB(9)CHR$141C
HR$132"A CHRISTMAS SCENE"
  530 PRINT''''CHR$129"FROM:"CHR$13
0"LASERBUG"
  540 TIME=0:REPEATUNTILTIME>=500
  550 ENDPROC
  560 DEFPROCroom
  570 MOVE0,0:DRAW160,128
  580 DRAW160,896:DRAW0,1023
  590 DRAW0,0:MOVE160,896
  600 DRAW1120,896:DRAW1279,1023
  610 DRAW0,1023:MOVE1120,896
  620 DRAW1120,128:DRAW1279,0
  630 DRAW1279,1023:MOVE1120,128
  640 DRAW160,128:MOVE0,0
  650 DRAW1279,0:ENDPROC
  660 DEFPROCdoor
  670 MOVE480,128:DRAW480,768
  680 DRAW800,768:DRAW800,128
  690 MOVE496,160:DRAW512,192
  700 DRAW560,192:DRAW576,160
  710 DRAW496,160:DRAW496,480
  720 DRAW576,480:DRAW560,448
  730 DRAW512,448:DRAW496,480
  740 MOVE512,448:DRAW512,192
  750 MOVE576,480:DRAW576,160
  760 MOVE560,192:DRAW560,448
  770 MOVE784,160:DRAW784,480
  780 DRAW768,448:DRAW768,192
  790 DRAW784,160:DRAW704,160
  800 DRAW720,192:DRAW768,192
  810 MOVE704,160:DRAW704,480
  820 DRAW720,448:DRAW720,448
  830 DRAW720,192:MOVE704,480
  840 DRAW784,480:MOVE720,448
  850 DRAW768,448:MOVE592,512
  860 DRAW688,512:DRAW688,544
  870 DRAW592,544:DRAW592,512
  880 MOVE736,512:DRAW768,512
  890 PLOT85,768,544:DRAW736,544
  900 PLOT85,736,512:MOVE784,576
  910 DRAW784,736:DRAW768,704
  920 DRAW768,608:DRAW784,576
  930 DRAW704,576:DRAW720,608
  940 DRAW768,608:MOVE704,576
  950 DRAW704,736:DRAW720,704
  960 DRAW720,608:MOVE720,704
  970 DRAW768,704:MOVE704,736
  980 DRAW784,736:MOVE496,576
  990 DRAW576,576:DRAW560,608
 1000 DRAW512,608:DRAW496,576
 1010 DRAW496,736:DRAW512,704
 1020 DRAW512,608:MOVE496,736
 1030 DRAW576,736:DRAW560,704
 1040 DRAW512,704:MOVE560,704
 1050 DRAW560,608:MOVE576,736
 1060 DRAW576,576:ENDPROC
 1070 DEFPROCcarpet
 1080 X1=160:X2=0
 1090 REPEATMOVEX1,128:DRAWX2,0
 1100   X1=X1+4.8:X2=X2+6.4
 1110   UNTILX2>=1280
```

continued on page 15



Get your frog across the motorway and river, but beware of the snakes and alligators, not to mention the diving turtles and beavers!

Features include animation, 9 starting levels and software volume control.

CENTIPEDE

Written in machine code this game has all the features of the arcade game.

You must kill the centipede which stealthily worms its way through the mushrooms towards you, before it reaches the bottom of the screen and invites some of its friends along. All the time you are harassed by the spider whose legs move in excited anticipation of his next meal: YOU!

Then there's the dive-bombing flea and the mushroom poisoning scorpion, but you'll find out about them soon enough!

Both games were written in MODE 2 for the BBC model 'B' and have colour and sound. They are available for £6.50 each from:

James Hager, 7 Basset Street, Camborne, Cornwall TR14 8SW.

continued from page 10

program. I do feel however that this pack is one of the best selection of education programs I have seen to date and would recommend them to any first of middle school (primary or junior). Thanks must go to St. Marys C of E School for help in writing this review.

PRESENTATION: ★★★★
FOR AGES: 6 to 12 (depending on program)
SUBJECTS: 3 x Maths/2 x English
USEFULNESS: ★★★★
NUMBER OF USERS: 1
VALUE FOR MONEY: ★★★★

–o0o–

GAME REVIEW: Powerboat
SUPPLIER: Futura Software, 63 Lady Lane, Chelmsford, Essex, CM2 0TQ
REQUIRES: 32k and Joystick
PRICE: £7.95
ESCRIPTION OF PROGRAM: Futura Software made rather a big thing of this program when they presented it to me for review so I was honestly expecting something really good. Well, as you come to learn in this business a good number of things are disappointing – this is no exception. The idea of this game is to race in three heat powerboat race against the computer and another player (although it can just be you against the computer.) The use of joysticks makes this the first game to use them but I feel here they have not been used to full effect. I think the use of MODE 2 for the game was a mistake as the race would have been much better in say MODE 1. The game is OK but not one I would recommend and in no way worth £8.

PRESENTATION: ★★★
ADDICTIVE QUALITY: ★★
USE OF GRAPHICS: ★★★
USE OF JOYSTICKS: ★★
VALUE FOR MONEY: ★★

–o0o–

ARCADE GAME PROGRAM: Invaders
SUPPLIER: MP Software & Services, 165 Spital Road, Bromborough, Merseyside, L62 2AE
REQUIRES: 32k
PRICE: £5.00 ???
DESCRIPTION OF PROGRAM: This program must be *RUNed instead of CHAINed. It plays a game of space invaders with there being 8 x 8 invaders. The looks of the game are pretty standard although the graphics are quite good. Firing is a bit strange. The rule is that you can only fire once from one position. Hence if you want to shoot a volley of 3 shots you fire then move a litte, fire again, move again and fire again. The game is fine but prefered by younger players. Once you have worked out a "little trick" which I will not divulge here it is simple to clear the screen every time. There are one or two bugs in the game which results in when you get a high score occasionaly the score will reset back to 0 for no apparent reason?

PRESENTATION: ★★★
ADDICTIVE QUALITY: ★★★
USE OF GRAPHICS: ★★★★
VALUE FOR MONEY: ★★★ (Depending on actual price?)

–o0o–

GRAPHICS PROGRAM: Designer
SUPPLIER: Quodlibet, 2 Victoria Terrace, Dorchester, Dorset, DT1 1LS
REQUIRES: 32k + OS 0.1
PRICE: £8 (or £1 for introductory game cassette and catalogue)
DESCRIPTION OF PROGRAM: The simplest way to describe this program is a complex character generator – however that would undermine the capabilities of this program. Firstly you choose what MODE you want to define your character in. A 16 x 16 grid is then printed up on the screen. You can then define any pattern you want within this grid as you would with any of the normal character generator programs. The difference with this program is that instead of defining the character in mono, you can in fact use any of the colours available in the MODE you are using. This means that instead of having to go through the complex process of VDU5 statements you can define a multi-coloured character in one go. After you have defined each character you must give it a name. When you have finished all the characters you press CTRL-P and the computer writes a program. Once the program is finished you may add your program around it. All the graphics characters you have made up are defined in the form of PROCedures at the end of the program. Whilst writing your program, when you want to print up one of your characters this is done by another PROCedure. The program is very useful and makes creating complex graphic displays much easier.

PRESENTATION: ★★★
USE OF GRAPHIS: ★★★★
USEFULLNESS: ★★★★
VALUE FOR MONEY: ★★★

GRAPHICS PROGRAM: BBC Artist
SUPPLIER: The Software House, 146 Oxford Street, London, W1.
REQUIRES: 32k (Joystick optional)
PRICE: £12.50
DESCRIPTION OF PROGRAM: This program is one of the most versatile I have seen so far to use the BBC Computer as your easel. The program will operate in any of the graphics modes and uses the default colour in each (although you can alter them in the beginning). The cursor is moved using the cursor keys with lines being drawn when the space bar is pressed. The user-definable keys also perform many functions. Firstly the background colour and current of reground colour can be altered. You can move between plotting single points and drawing lines. A little routine is included in the program to draw circles. An Airbrush mode is included in the program so that instead of drawing normally you can get your computer to give proper airbrush effects. A wide range of 'brushes' is included in the program but you could alter these yourself by re-defining specific characters. Normal text can be printed anywhere on the screen with the option of shadowed text! Pressing key f6 will superimpose a grid onto the screen for easy drawing. The screen **can** be saved on tape for future use at either a high or low speed. finally you do have the option of using either the keyboard (cursor keys) or a joystick. I was really impressed with this program. If you are into experimenting with graphics (abstract graphics mainly) then this program will certainly be a great aid to you.

PRESENTATION: ★★★
USE OF GRAPHICS: ★★★★★
USEFULNESS: ★★★★
VALUE FOR MONEY: ★★★

–o0o–

ARCADE GAME PROGRAM: Academy
SUPPLIER: Swift Link Software, 118-120 Wardour Street, London, W1V 4BT.
REQUIRES: 32k
PRICE: £4.00
DESCRIPTION OF PROGRAM: Now heaven forbid that I should make any improper suggestions but this game looks remarkably familiar. Although of course there is different graphics and text in between games the actual game played looks so much like that of "ATTACK" as published in the first issue of the Owl it is unbelievable. Of course I am not suggesting that somebody somewhere has breached copyright – you would have to ask Swift Link and Computer & Video Games about that??? The game is nothing remarkable and relies to some extent on luck. Not one to write home about as they say.

PRESENTATION: ★★★
ADDICTIVE QUALITY: ★★
USE OF GRAPHICS: ★★★
VALUE FOR MONEY: ★★★

–o0o–

EDUCATIONAL PROGRAM: Multiply
SUPPLIER: Cottage Software, Heather Cottage, Selly Hill, Whitby, N. Yorkshire.
REQUIRES; 16k
PRICE: £7.50
DESCRIPTION OF PROGRAM: This program, like multiplication on Early Learning, tests the child on his or her long multiplication. You have the choice of either easy or hard questions and can ask for either 2 or 5 questions. Again the child is taken step by step through each question. If the child manages to get all the questions correct without making a single mistake they are allowed to play 6 games of noughts and crosses against the computer. The program is not as good as the one on the tape Early Learning but still provides a useful teaching aid with the added incentive of a game if you do well enough.

PRESENTATION: ★★★
FOR AGES: 10 – 12
SUBJECT: Maths (long multiplication)
USEFULNESS: ★★★
NUMBER OF USERS: 1
VALUE FOR MONEY: ★★★

–o0o–

I would like to thank Software for All, CJE Microcomputers, IJK Software, '42' Software, Micro-Aid, BBC Publications, ABC Software, SRL Software, H & H Software, Simon W Hessel Software, Acornsoft, Futurd Software, MP Software & Services, Quodlibet, The Software House, Swift Link Software and Cottage Software for supplying us their programs for review. The Program Power program was obtained from an independent source.

Next month we will be having a round-up on the adventure programs available.

continued from page 13

```
 1120 ENDPROC
 1130 DEFPROCtree
 1140 MOVE920,100:DRAW1000,100
 1150 PLOT85,1020,200:DRAW900,200
 1160 PLOT85,920,100:FORX=640TO240
STEP-49
 1170    MOVE960,X:DRAW960+((400-(X
-240))/2.7),X-(X-240)
 1180    PLOT85,960-((400-(X-240))/
2.7),X-(X-240)
 1190    NEXT:MOVE960,300:DRAW960,2
00
 1200 ENDPROC
 1210 DEFPROCdoorbell
 1220 MOVE280,648:DRAW360,648
 1230 DRAW360,580:DRAW280,580
 1240 DRAW280,648:MOVE290,580
 1250 DRAW290,480:MOVE350,580
 1260 DRAW350,380:TIME=0
 1270 REPEATUNTILTIME=300
 1280 FORX=1TO250:SOUND&11,-15,150
,1
 1290    SOUND&11,-15,200,1:NEXT:EN
DPROC
 1300 DEFPROCPost
 1310 C%=0
 1320 FORX=510TO178STEP-25
 1330    MOVE592,X:DRAW688,X
 1340    DRAW688,X-50:DRAW592,X-50
 1350    DRAW592,X:PROCdelay
 1360    MOVE592,X-50:PLOT7,688,X-5
0
 1370    C%=C%+1:SOUND&11,-10,100-C
%*3,10
 1380    PLOT7,688,X:DRAW592,X-50
 1390    PROCdelay:MOVE688,X
 1400    PLOT7,592,X:PLOT7,592,X-50
 1410    DRAW688,X-50:DRAW688,X
 1420    PROCdelay:PLOT7,688,X-50
 1430    PLOT7,592,X-50:PLOT7,688,X
 1440    NEXT:MOVE592,100:DRAW688,1
00
 1450 PLOT85,688,50:DRAW592,50
 1460 PLOT85,592,100:TIME=0:SOUND0
,-10,4,2
 1470 REPEATUNTILTIME=300:ENDPROC
 1480 DEFPROCdelay
 1490 TIME=0:REPEATUNTILTIME=10
 1500 ENDPROC
 1510 DEFPROCenvelope
 1520 MOVE100,100:DRAW1179,100
 1530 DRAW1179,923:DRAW100,923
 1540 DRAW100,100:DRAW640,508
 1550 DRAW1179,100:FORX=512TO923ST
EP2
 1560    MOVE100,923:DRAW640,X
 1570    DRAW1179,923:MOVE100,923
 1580    PLOT7,640,X:PLOT7,1179,923
 1590    MOVE100,923:DRAW640,512
 1600    SOUND&10,-10,7,3:SOUND&11,
0,(520-(X-411))/3,3
 1610    DRAW1179,923:NEXT
 1620 X=923:REPEATMOVE100,X+4
 1630    DRAW1179,X+4:PLOT69,100,X
 1640    PLOT69,1179,X:MOVE100,X+4
 1650    PLOT7,1179,X+4:X=X+4
 1660    UNTILX>=1023
 1670 ENDPROC
 1680 DEFPROCcard_on_screen
 1690 FORX=-823TO100STEP4:MOVE100,
X
 1700    DRAW1179,X:DRAW1179,X+823
 1710    DRAW100,X+823:DRAW100,X
 1720    PLOT7,1179,X:PLOT7,1179,X+
823
 1730    PLOT7,100,X+823:PLOT7,100,
X
 1740    NEXT:ENDPROC
 1750 DEFPROCcard_shrink
 1760 X1=100:X2=1179
 1770 Y1=100:Y2=923
 1780 REPEATMOVEX1,Y1:DRAWX2,Y1
 1790    DRAWX2,Y2:DRAWX1,Y2
 1800    DRAWX1,Y1:PLOT7,X2,Y1
 1810    PLOT7,X2,Y2:PLOT7,X1,Y2
 1820    PLOT7,X1,Y1:X1=X1+4
 1830    X2=X2-4:Y1=Y1+4
 1840    Y2=Y2-4:UNTILX1=220
 1850 MOVEX1,Y1:DRAWX2,Y1
 1860 DRAWX2,Y2:DRAWX1,Y2
 1870 DRAWX1,Y1:ENDPROC
 1880 DEFPROCcard_turn
 1890 FORX=0TO90STEP4:S1=SINRAD(60
+X)*512+640
 1900    S2=SINRAD(120+X)*512+640
 1910    S3=SINRAD(240+X)*512+640
 1920    S4=SINRAD(300+X)*512+640
 1930    C1=COSRAD(60+X)*512+512
 1940    C2=COSRAD(120+X)*512+512
 1950    C3=COSRAD(240+X)*512+512
 1960    C4=COSRAD(300+X)*512+512
 1970    CLS:MOVES1,C1:DRAWS2,C2
 1980    DRAWS3,C3:DRAWS4,C4
 1990    DRAWS1,C1:NEXT:ENDPROC
 2000 DEFPROCoutside_card
 2010 MOVE380,100:DRAW900,100
 2020 DRAW900,923:DRAW380,923
 2030 DRAW380,100
 2040 COLOUR1:PRINTTAB(15,4)"M E R
 R Y"TAB(15,6)"CHRISTMAS"
 2050 GCOL0,1
 2060 MOVE600,150:DRAW680,150
 2070 PLOT85,700,250:DRAW580,250
 2080 PLOT85,600,150
 2090 GCOL0,2:VDU19,2,2,0;0;:FORX=
690TO290STEP-49
 2100    MOVE640,X:DRAW640+((400-(X
-240))/2),X-(X-290)*.9
 2110    PLOT85,640-((400-(X-240))/
2),X-(X-290)*.9
```

continued on page 20

Dear LASERBUG,

The delay in supplying software was mainly due to an overwhelming response requiring us to reprint titles in some cases. However we are now using a separate marketing organisation to despatch orders and the situation is rapidly clearing. We definitely regret this situation and would obviously prefer to be able to deliver on time and it is in no sense a "marketing policy".

Yours sincerely,
D. Johnson-Davies (Director),
Acornsoft.

(Acornsoft still did not reply to my main point which was why software was on sale at the PCW Show with a still huge backlog of outstanding orders (ref. LASERBUG Issue 5, pages 2 & 19). We are awaiting another letter – Ed.)

Dear LASERBUG,

I have been more than a little disappointed with my machine, the physical construction not being up to the quality one would expect from a device with the 'backing' of the BBC (maybe there is some truth to the rumours I,ve heard that the only backing the BEEB has recently been trying is OUT of the entire project?). *(Not quite true – the BBC likes the computer and the Project but not the service from Acorn. The BBC will* **not** *be backing anything like this again though – Ed.)* I appear to be more fortunate than most, at least I have the 'proper' manual – even though it does appear to be thrown together, and very badly collated. Even more depressing is the frequent reference to . . . . . 'only available on version 1.0 MOS' (my machine is two weeks old and has version 0.1). Now I am hearing of version 1.2!!!!

After only two weeks usage my machine will only produce legible displays on 3 out of the 8 modes – an all. Heatsink tied onto the video processing ULA with cotton rectifies the problem, meanwhile I am waiting for a replacement.

I have read that Acorn will replace version 0.1 EPROM MOS chips for free, my machine appears to be fitted with a ROM, but a *FX0 command produces the response . . . . . vers 0.1 EPROM; do I qualify for free replacement? *(Only if you need to have the chips replaced i.e. when you buy a disk interface, etc. – Ed.)*

Sorry about the 'gripping', but I have suffered (god, have I suffered!) in the past with Nascom 1 etc. '78' vintage, and I really thought (fool!) that for £400 plus auntie BEEB things would be better . . . . .

I still think the machine is good, and would recommend it, albeit with some reservations, since much depends on Acorns future performance. (Will BBC support and development be even further degraded by the advent of the Electron?, or will Acorn blow this too?)

I see the Teletext decoder has been announced for December at £200 + !! – what happened to the £100 unit talked of 11 months ago? (Maybe Maggies single figure inflation is incorrect. I purchased a complete Teletext converter for my TV for less than £200, complete with neat wooden case . . . . . I feel a sense of 'deja-vu' over Acorn, following my earlier experiences with Nascom; in the former case, they had the excuse of being 'the first', and also only supplying kits; there are no excuses today for ready built £400 machines . . . . . nuff said.

Wouldn't it be nice if Acorn had spent a little more and fitted an audio output socket, the connections are available as two pads on the main board, 'PL16' and provide enhanced quality sound when connected to a hi-fi, although the level is well below the more usual 150mV level for most amplifier requirements.

Sorry about the gripes again, but if the machine and manufacturer were perfect it would be too boring to bother buying and everybody likes a challenge . . . . . don't they . . . . . ?

Paul Wilson,
Redhill, Surrey.

Dear LASERBUG,

I am writing as an author of software sold for the BBC Micro, in the hopes of enlisting your help.

It seems that with the release of the Dragon, Spectrum, etc. sales of the Model A BBC Micro have fallen significantly. Upgrades and Model B Machines are still selling well. We therefore are finding it not worthwhile developing programs specially to run in 16k machines. The problem will be made that much worse by the release of a new machine operating system and BASIC. We are facing the situation where some programs must be rewritten according to which machine is to be used, making supply of the correct program to the user that much more difficult. We intend to suggest to Acorn that from, say, 1st February 1983 all BBC Micros should be supplied with a minimum of OS1.2, new BASIC and 32k RAM as standard. Programs could then be developed on such a system in the sure knowledge that they would run on all new machines and any current ones with a cheap upgrade. It would not cost Acorn too much to do this: the sockets are there and memory is cheap, and the increased sales would more than make it up.

If you agree with the idea I would be very grateful if you could write to Acorn asking them if they would consider it. We feel it would be worthwhile for everyone (and consequent increase in sales) and make the supply of reliable software that much easier.

F. Skidmore,
Saturn-Soft (Swansea).

club reports

LASERBUG is presently actively involved in getting in touch with the smaller, local user groups around the country. If you run one of these groups the chances are that we have already contacted you, if not then please get in touch. We would like to see an information exchange between all these groups with LASERBUG acting as the central point. We are prepared to devote space each month to the local user groups for there own uses as well as giving details of their meetings, etc. We do run an affiliation scheme for other user groups so that your group could become affiliated to LASERBUG hence providing a 'big brother' for advice and support. Below is a report of the inaugral meeting of the North London BBC Microcomputer Users Group and Education Workshop.

Last year John Claydon organised a series of ZX81 weekends at Bounds Green Junior School. My Dad had taken me to one of them at which Steve Adams had talked about the hardware side of the 80 and 81. Out of the blue a letter had arrived announcing a series of monthly meetings of a New Users Group. How did he know we now had a BBC? Well, he didn't but it was a good guess. It took a while to load computer, TV, cassette recorder, magazines and books into the car and we were worried that if we were late for the 2.00 p.m. meeting we wouldn't be able to set up our machine because there wouldn't be enough power available. In practice we were just in time and power availability was no problem. A total of eight people attended and three machines were set up. John had written a menu driven program entitled SOUNDS AWFUL to demonstrate the sound possibilities of the machine. He gave a short talk about SOUND and ENVELOPE which made it clear how much more there was to learn. The themes of future meetings are IN THE MODE, GRAPHICALLY PUT, OUT OF THIN AIR (telesoftware of course), PORTS AND PADDLES, THE TUBE and so on.

Individual members are intended to demonstrate their programs and applications and there will be guest speakers. The meetings are held on the first SUNDAY each month at BOUNDS GREEN JUNIOR SCHOOL, PARK ROAD, N.11 from 2.00 pm to 5.00 pm. New members are always welcome.

Oliver Betts

teletext substitute for OS 0.1

If you are lucky enough to have OS1.0 or above you will know how you can produce the teletext control codes by using SHIFT-fn. Full details are given on page 439 of the user guide. If you only have OS 0.1 then try typing in the following listing:

```
L."
   10 REM BBC BASIC 0.1 VERSION
   20 REM OF 1.0 VERSION SHIFT-
   30 REM    fn TELETEXT CODES
   40 REM      by Paul Barbour
   50 :
   60 REM    (C) LASERBUG 1982
   70 :
   80      :::::
   90 :
  100 *KEY0!!!@
  110 *KEY1!!!A
  120 *KEY2!!!B
  130 *KEY3!!!C
  140 *KEY4!!!D
  150 *KEY5!!!E
  160 *KEY6!!!F
  170 *KEY7!!!G
  180 *KEY8!!!H
  190 *KEY9!!!I
```

This will simulate this capability, except that you do not press SHIFT to get the codes.

Paul Barbour

If you would like to get in touch with other local users but do not want to get involved in the organisations of a local group, try looking in the list below for some contacts. If you would like to be put on this list, please write to us at the usual LASERBUG address and mark the envelope Contacts.

- Dr D E Susans
  19 Rushout Avenue,
  Harrow,
  Middx. HA3 0AS
  01-907 1964
- Wayne Wealleans
  7 Hillman's Cottages,
  Ongar Road,
  Abridge,
  Essex RM4 1UL
  Theydon Bois 4154
- Dr John Willis
  27 Park Road
  Hampton Hill,
  Middx. TW12 1HG
  01-979 6655
- John Matchett
  01-940 9361
- W G Morley
  107 Sandfield Road,
  Arnold,
  Nottingham NG5 6QF
  0602-267635
- Mr John F Murphy
  10 Birchmore,
  Brookside,
  Telford,
  Shropshire
  0952-595959
- Mr P S Murphy
  01-740 8082
- G Musgrove
  16 Orchard Road, South Croydon
  Surrey CR2 9LU
  01-651 0011
- Nicholas D Lamb
  23 Gaywood Close,
  Caister-on-Sea,
  Gt. Yarmouth,
  Norfolk NR30 5RD
  0493-728442
- N Lambert
  11 Vinson Close,
  Orpington,
  Kent BR6 0EQ
- R W Macmillan
  38 Box Ridge Ave.,
  Purley,
  Surrey CR2 3AQ
  01-660 5615
- Mr Mark Cook
  165 Witham Road,
  Black Notley,
  Braintree,
  Essex CM7 8NB
  0376-23084
- R Hall
  89 Hicks Ave.,
  Greenford,
  Middx UB6 8EZ
  01-578 9136
- David N Hardwick
  Hagley 885183
- Laurie Hartman
  178 East Barnet Road,
  Barnet,
  Harts EN4 8RD
- John Harvey
  93 Southfield,
  Hessle,
  N. Humberside HU13 0ET
  0482 645905
- A R J Hunt
  22 Meyer Road,
  Erith,
  Kent
  Erith 38620
- David H M Glew
  20 Barnfield Wood Road,
  Beckenham,
  Kent
  01-650 1365
- E E Godfrey
  6 Wharf Road,
  Wraysbury,
  Nr. Staines,
  Middx. TW19 5JQ
  Wraysbury 2624
- D T Green
  Bay House, Painter's Forstal,
  Faversham,
  Kent ME13 0D
  Faversham 6483
- Peter Greenall
  77 Memorial Ave.,
  Stratford,
  London E15
- Paul E Firman
  63 Lady Lane,
  Chelmsford,
  Essex CM2 0TQ
  0245 50432
- P Y Norman
  Flat 2,
  3 Cedar Gardens,
  Sutton,
  Surrey SM2 5EQ
  01-643 1944
- Mr J D Osborn
  8 Chytroose Close,
  Helston,
  Cornwall TR13 8UY
  Helston 4121 Ext. 7378
- James Stewart
  Lammas Field,
  Baring Road,
  Cowes,
  Isle of Wight.
  Cowes 292107
- Mr Dilbagh Singh
  29 Wingfield Mount,
  Bradford,
  West Yorkshire BD3 0AG
- Mr M F Shirt
  30 Orchard Road,
  West Northenden,
  Manchester M22 4FD
- E A Watson
  19 Darrell Close,
  Chelmsford,
  Essex CM1 4EL
  Chelmsford 83790
- Ian Dennison
  38 Tankerville Road,
  London SW16 5LP
  01-764 4958
- Mr R W Thompson
  Redhill 63232
- Stephen E Parsons
  16 Primrose Hill,
  Haverhill,
  Suffolk CB9 9LS
  0440-70422 Ext. 52
- D I Pearce
  Little Orchard,
  Brentmoor Road,
  West End,
  Woking,
  Surrey
- Brian D Piper
  73 Fairlawn Drive,
  East Grinstead,
  West Sussex RH19 1NS
  0273-23373
- P W Rautenbach
  25 Bishopsfield,
  Harlow,
  Essex CM18 6UJ
- Mr H E Robson
  Church Farm,
  Stewkley,
  Nr. Leighton Buzzard
  0525-24244
- Paul Shaddick
  325 Wickham Lane,
  Abbey Wood,
  London SE2 0NT
  01-854 7766
- J M Stone
  8 Sandra Court,
  Spencer Road,
  Chiswick,
  London W4
  01-995 6144
- V A Amesbury
  33 King Edgar Close,
  Ely,
  Cambs. CB6 1DP
  Ely 3274
- C G Bartholomew
  102 Cranley Gardens,
  Muswell Hill,
  London N10 3AH
  01-883 2624
- Mr A J Beer
  2 Waterworks Cottages
  Dotton,
  Sidmouth,
  Devon EX10 0JY
- Rick Branston
  37 Princes Road,
  Romford,
  Essex
  Romford 61336
- Daniel O'Brien
  5 Highfields Mead,
  East Hanningfield,
  Chelmsford,
  Essex CM3 5XA
- B Buckland
  Purton 771669
- Simon Cheshire
  1 Knowsley Way,
  Hildenborough,
  Kent TN11 9LG
  Hildenborough 833108
- Dave Clare
  "Providence House",
  222 Townfields Road,
  Winsford,
  Ches. CW7 4AX
  Winsford 51374
- Dr P G Clayton
  Chigwell School,
  High Road,
  Chigwell,
  Essex
- Nicholas Clifton
  4 Bonchester Close,
  Chislehurst,
  Kent BR7 5FS
  01-467 5396
- R F Colin
  13 Pembroke Road,
  Moor Park,
  North Wood,
  Middx. HA6 2HP
- Peter M Corrie
  58 High Street,
  Haslemere,
  Surrey GU27 2LA
  0428 3838
- G Cox
  78 Napier Road,
  Gillingham,
  Kent
  0634 55475
- David Dade
  30 Hilden Park Road,
  Hildenborough,
  Tonbridge,
  Kent TN11 9BL
  0732 838603
- P J Davies
  'Treetops',
  Burnham Road,
  Althorne,
  Chelmsford,
  Essex CM3 6DP
  Maldon 740084
- Mr Chris Drage
  28 Ingersoll Road,
  Shepherds Bush,
  London W12.
- R.M. Timothy
  35 Potash Road,
  Billericay,
  Essex CM11 1DL
- Catherine Brown
  2 Plas Newydd,
  Southend-on-Sea,
  Essex, SS1 3AG.
  0702-587066.
- J R Dyer 0954-81074.
- Roger Gibbons,
  Lynford Recreation Road,
  Stalham,
  Norfolk.
  0692-80410.
- Stephen Hart,
  42 Midship Point,
  Malabar Street,
  London E14.
- David Phillips,
  49 Hartfield Avenue,
  Elstree,
  Herts.

- A F Bell,
  Yarawina,
  Woodhurst Park,
  Oxted,
  Surrey.
  08833-2491
- T. Robinson
  083-72311/73884
- Jim Northcott,
  16 Fawley Road,
  London, NW6 15H.
  01-794 6024
- Allen Hardy,
  3/177 College Road,
  Moseley,
  Birmingham, B13 9LJ.
- Eric Demmon,
  73 Hertford Road,
  Stevenage,
  Herts, SG2 8SE
- B. Scott, Esq.
  22 Shakespeare Drive,
  Upper Caldecote,
  Biggleswade,
  Beds. SG18 9DD.
  Biggleswade 317116
- John Kellett, Esq.
  1 Fennel Close,
  Lower Earley,
  Reading,
  Berks. RG6 2XS
  0734 871646
- Neil Odell
  31 Humphrey Road,
  Greenhill,
  Sheffield S8 7SE
  0742 745027
- T A Measures
  12 Lancaster Road,
  Bestwood Village,
  Notts, NG6 8TT
- Michael Lowe,
  190 Roding Road,
  Loughton,
  Essex.
  01 508 8534
- Slough College of Higher Education,
  Computer Centre,
  Wellington Street.
  Slough SL1 1YG
  Slough 34585
- David Simpson,
  435 Fulham Palace Road,
  London SW6
  01-731 5281.
- A. S. Day,
  6 Raymead Way,
  Fetcham,
  Leatherhead,
  Surrey KT22 9LY.

business spot

This month we decided to look at a part of data interrogation. Supposing you want to send a letter to a number of customers or you need to create a database of names and addresses. What you need is a program that will allow you to easily enter this data and correct it. For the purposes of this program the address we are going to try to store is:

Paul Barbour,
Editor,
LASERBUG,
10 Dawley Ride,
Colnbrook,
Slough,
Berks.,
SL3 0QH.
Colnbrook (02812) 3064.

This is 9 lines long and contains a wide variety of data.

The first thing we must do is number the lines. Paul Barbour will be line 0, Editor line 1, and the phone number line 8. The reason I started from 0 and not 1 is that the data will be stored in an array and the first element in an array is 0. We could have started at 1 but generally programs that deal with file-handling must be as compact as possible to allow more files to be stored.

The computer easily understands line 0 etc., but as the program is going to be used by humans as well it should be as friendly as possible. As far as the computer is concerned line 0 is line 0 but as an added touch for the human we will call it Name. All the lines can be called likewise:

Line 0 — Name
Line 1 — Position
Line 2 — Company
Line 3 — Street
Line 4 — Town
Line 5 — City
Line 6 — County
Line 7 — Postcode
Line 8 — Phone number

Entering this data is easy and can be done with a simple program.

```
10 DIMdata$(8)
20 FORdata=0TO8
30 READheading$
40 PRINTheading$" ? ";:INPUT""d
ata$(data)
50 NEXT
60 END
70 DATAName,Position,Company,St
reet,Town,City,County,Postcode,Pho
ne-number
```

This program is OK in structure but is in no way suitable for a professional program.

For a start the formatting is very bad. There is no way to correct data after it has been entered, commas cannot be entered, i.e. as you would want in an address, the CAPS LOCK key is on all the time and hence the data entered doesn't look as neat as it should—in other words the program needs a great deal of improvement.

What I am going to do for this article is explain how this program should be fully developed. In the end the address will be both sent to the printer and stored on tape (remembering to use the bug fix from LASERBUG, Issue 3).

To tackle the problems in order: First the formatting. The position of the question marks is easy to alter using TAB commands. The other question is do we need 80-column text? It is unlikely that any line will exceed 40 characters and hence the teletext mode is the obvious choice. If we are using teletext do we need colour? Colour doesn't help the program but it does break up the monotony and as the program is likely to be used in the end to enter large amounts of data I think this can be used.

Next how do we correct data? The easiest way to do this is once the address etc. has been entered then print the data and ask if this is correct. If it isn't then we can reprint the data except we will number the lines. The offending line can then be picked out and altered. As we are using teletext graphics we can make the incorrect line flash quite easily.

With the program as it stands commas cannot be entered. The simple way to get around this is to use INPUTLINE instead of just INPUT. With the normal INPUT commas are used to separate data, with the other form the entire line is entered. This is all very good but quite often people forget to enter a comma and hence either the result will be uneven or the person will have to correct lines. This can be avoided if you check the line after it is entered using RIGHT$. If the comma is missing then it can always be added in simply by data$(data) = data$(data)+",". We must be careful on lines 7 and 8 which will need full stops instead.

The CAPS LOCK key can be easily altered using ?216=32 to turn it on and ?216=48 to turn it off (this will probably only work on the 0.1 OS system—I would be grateful if somebody could verify this).

To send the data to the printer all we need to do is simply switch it on using VDU2, print the address on the screen and then switch it off again using VDU3.

For the cassette file, the first question is what to use as the file name? What we will do for this program is to use the name of the company. If the name is more than 10 letters then we will use a shortened version. If the name is more than one word then we will just use the first word. This case can be detected using INSTR.

All of the above will work fine with LASERBUG's address but what if it is another address where there is, say, no City to enter? What happens for the printer and cassette files? For the printer we must simply print nothing, for the cassette we must send an empty string.

This article is not really designed to be a lead-up to an address enterer program although you do have that into the bargain. The idea is to show you the kind of thoughts you should be having when thinking about writing a program. This is not really structured in a proper way but describes my thoughts as I had them. Next month we will be looking in proper detail at how you should go about writing a program.

Anyway, if nothing else, you have another short program you can adapt for your own business software.

Paul Barbour

L.

```
   10 REM * CFS Bug Fix *
   20 !&70=&B8208085:!&74=&6080A5E
8:?&20A=&70:?&20B=0
   30 MODE7
   40 DIMdata$(9)
   50 PROCenter_address
   60 PROCcorrect_address
   70 PROCPrinter_listing
   80 PROCcassette_file
   90 RUN
  100 DEFPROCenter_address
  110 RESTORE210
  120 LOCALdata
  130 FORdata=0TO8
  140 PROCcaPs_off
  150 READheading$
  160 PRINTCHR$129;heading$;TAB(14
);"?";CHR$130;:INPUTLINE""data$(da
ta)
  170 PROCcommas
  180 NEXT
  190 PROCcaPs_on
  200 ENDPROC
  210 DATAName.........,Position..
...,ComPany.......,Street........,To
wn..........,City..........,County..
......,Postcode.....,Phone-number.
  220 DEFPROCcaPs_on
  230 ?216=32:ENDPROC
  240 DEFPROCcaPs_off
  250 ?216=48:ENDPROC
  260 DEFPROCcorrect_address
  270 CLS
  280 FORdata=0TO8
  290 PRINTCHR$131;data$(data)
  300 NEXT
  310 PRINT''CHR$133"Is this corre
ct ?"
  320 reply$=GET$:IFreply$="Y"THEN
ENDPROC
  330 IFreply$<>"N"THEN320
  340 CLS
  350 FORdata=0TO8
  360 PRINT" "CHR$134;" ";data+1;"
 - ";data$(data)
  370 NEXT
  380 PRINT''''CHR$129;"Which line
is wrong ?"
  390 A$=GET$:IFVAL(A$)=0THEN390
  400 VDU30
  410 FORflash=1TOVAL(A$):PRINT:NE
XT
  420 VDU11,136
  430 PRINTTAB(0,15)CHR$130"Re-ent
er the correct version of the"'CHR
$130"line"
  440 data=VAL(A$)-1
  450 PROCcaPs_off
  460 PRINT'CHR$131;:INPUTLINE""da
ta$(data)
  470 PROCcaPs_on
  480 PROCcommas
  490 CLS:GOTO270
  500 ENDPROC
  510 DEFPROCcommas
  520 IFdata>6THEN560
  530 IFRIGHT$(data$(data),1)=","O
Rdata$(data)=""THENENDPROC
  540 IFRIGHT$(data$(data),1)="."T
HENdata$(data)=LEFT$(data$(data),L
EN(data$(data))-1)+",":ENDPROC
  550 data$(data)=data$(data)+",":
ENDPROC
  560 IFRIGHT$(data$(data),1)="."O
Rdata$(data)=""THENENDPROC
  570 IFRIGHT$(data$(data),1)=".":T
HENdata$(data)=LEFT$(data$(data),L
EN(data$(data))-1)+".":ENDPROC
  580 data$(data)=data$(data)+".":
ENDPROC
  590 DEFPROCPrinter_listing
  600 VDU2
  610 PRINT'
  620 FORdata=0TO8
  630 IFdata$(data)=""THEN640ELSEP
RINTdata$(data)
  640 NEXT
  650 VDU3
  660 PRINT'
  670 ENDPROC
  680 DEFPROCcassette_file
  690 IFdata$(data)=""THENtitle$="
*****":GOTO740
  700 IFLEN(data$(2))<=10ANDINSTR(
data$(2)," ")=0THENtitle$=data$(2)
:GOTO740
  710 IFINSTR(data$(2)," ")=0THENt
itle$=LEFT$(data$(2),10):GOTO740
  720 title$=LEFT$(data$(2),INSTR(
data$(2)," "))
  730 IFLEN(title$)>10THENtitle$=L
EFT$(title$,10)
  740 file=OPENOUTtitle$
  750 FORdata=0TO8
  760 PRINT#file,data$(data)
  770 NEXT
  780 CLOSE#file
  790 ENDPROC
  800
  810
  820 REM GOTO830 will list the ca
ssette file
  830 VDU2
  840 REPEAT
  850 file=OPENIN""
  860 FORdata=0TO8
  870 INPUT#file,data$
  880 PRINTdata$
  890 NEXT
  900 CLOSE#file
  910 UNTIL0
```

continued from page 15

```
 2120    NEXT:MOVE640,350:DRAW640,2
50
 2130 FORX=690TO340STEP-49
 2140    MOVE640,X+50:DRAW640+((400
-(X-240))/2),(X-(X-290)*.9)+50
 2150    PLOT85,640-((400-(X-240))/
2),(X-(X-290)*.9)+50
 2160    NEXT:FORX=690TO390STEP-49
 2170    MOVE640,X+100:DRAW640+((40
0-(X-240))/2),(X-(X-290)*.9)+100
 2180    PLOT85,640-((400-(X-240))/
2),(X-(X-290)*.9)+100
 2190    NEXT:GCOL0,3
 2200 PROCstar(640,682,100):PROCst
ar(512,400,10)
 2210 PROCstar(764,400,10):PROCsta
r(488,344,15)
 2220 PROCstar(788,344,15):PROCsta
r(464,288,20)
 2230 PROCstar(812,288,20):PROCsta
r(580,300,RND(25))
 2240 PROCstar(656,544,RND(25))
 2250 PROCstar(612,448,RND(25)):PR
OCstar(688,464,RND(25))
 2260 PROCstar(600,376,RND(25)):PR
OCstar(692,324,RND(25))
 2270 PROCstar(692,392,RND(25))
 2280 TIME=0:REPEATUNTILTIME=300:E
NDPROC
 2290 DEFPROCstar(X,Y,R)
 2300 VDU29,X;Y;:PLOT69,0,0
 2310 FORX=0TO360STEP15
 2320    MOVE0,0:DRAWSINRAD(X)*R,CO
SRAD(X)*R
 2330    SOUND&12,-10,X*0.708333333
 1:NEXT:VDU29,0;0;
 2340 ENDPROC
 2350 DEFPROCmerry_christmas
 2360 SOUND1,-15,53,10:SOUND1,-15,
73,10
 2370 SOUND1,0,0,0:SOUND1,-15,73,7
 2380 SOUND1,-15,81,7:SOUND1,-15,7
3,7
 2390 SOUND1,-15,69,7:SOUND1,-15,6
1,7
 2400 SOUND1,0,0,0:SOUND1,-15,61,1
0
 2410 SOUND1,0,0,5:SOUND1,-15,61,1
0
 2420 SOUND1,-15,81,10:SOUND1,0,0,
0
 2430 SOUND1,-15,81,7:SOUND1,-15,8
9,7
 2440 SOUND1,-15,81,7:SOUND1,-15,7
3,7
 2450 SOUND1,-15,69,7:SOUND1,-15,5
```


PRINT OUT

"Life would be so much easier with an Amber 2400 Matrix Printer....."

AMBER 2400
MATRIX PRINTER
LOW RUNNING COST USING
PLAIN PAPER
FITS BBC,DRAGON,SPECTRUM
ATOM,TRS 80,UK101,VIC-20
AND MOST OTHERS

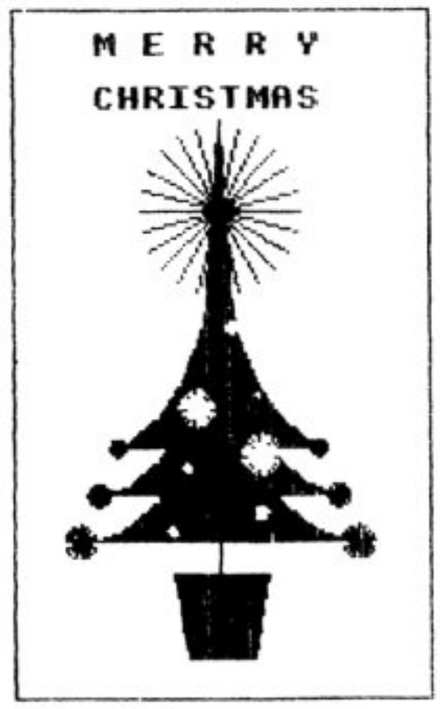
£69.95

---

excluding VAT
SEND LARGE STAMPED
ADDRESSED ENVELOPE FOR
DETAILS TO:

AMBER CONTROLS LIMITED
Central Way
Walworth Industrial Est.
Andover
Hampshire SP10 5AL

```
3,10
 2460 SOUND1,0,0,5:SOUND1,-15,53,1
0
 2470 SOUND1,-15,89,10:SOUND1,0,0,
0
 2480 SOUND1,-15,89,7:SOUND1,-15,9
3,7
 2490 SOUND1,-15,89,7:SOUND1,-15,8
1,7
 2500 SOUND1,-15,73,7:SOUND1,-15,6
1,7
 2510 SOUND1,-15,53,7:SOUND1,0,0,0
 2520 SOUND1,-15,53,7:SOUND1,-15,6
1,7
 2530 SOUND1,-15,61,7:SOUND1,-15,8
1,7
 2540 SOUND1,-15,69,7:SOUND1,-15,7
3,15
 2550 TIME=0:REPEATUNTILTIME=600
 2560 ENDPROC
 2570 DEFPROCoPen_card
 2580 GCOL0,3:FORX=896TO384STEP-4
 2590    MOVEX,916:DRAWX,104
 2600    MOVEX,916:PLOT7,X,104
 2610    NEXT:X1=920:X2=100:Y=376
 2620 REPEATMOVEY,X1:DRAWY,X2
 2630    MOVEY,X1:PLOT7,Y,X2
 2640    PLOT69,Y,X1:PLOT69,Y,X2
 2650    X1=X1+4:X2=X2+4:Y=Y-4
 2660    UNTILY<=300:MOVEY,X1:DRAWY
,X2
 2670 ENDPROC
 2680 DEFPROCinside_card
 2690 COLOUR2:PRINTTAB(13,4);"TO:"
 2700 PRINTTAB(13,6);name$
 2710 COLOUR3:PRINTTAB(15,12);"Bes
t Wishes"
 2720 PRINTTAB(13,14);"for Christm
as"
 2730 PRINTTAB(16,16);"and the"
 2740 PRINTTAB(16,18);"New Year"
 2750 COLOUR1:PRINTTAB(13,23);"FRO
M:"
 2760 PRINTTAB(13,25);"Paul Barbou
r,"
 2770 PRINTTAB(13,26);"LASERBUG"
 2780 ENDPROC
 2790 DEFPROCgoodbye
 2800 SOUND1,-15,100,5:SOUND1,-15,
125,5
 2810 SOUND1,-15,150,5:SOUND1,-15,
175,5
 2820 SOUND1,-15,200,5:SOUND1,-15,
150,5
 2830 SOUND1,-15,100,10
 2840 TIME=0:REPEATUNTILTIME=200:*
FX15,1
 2850 REPEATUNTILINKEY(0)>0
 2860 VDU22,7:PRINTCHR$131"GOODBYE
   "",,,
 2870 PRINT;:ENDPROC
```



queryspot

If you have any queries, no matter what their nature, please write to us marking the envelope queryspot and we will do our best to answer you. Individual queries WILL be answered as long as you enclose an SAE.

Q. Could you advise me where I can purchase or make a set of joysticks, perhaps using the joysticks available from Maplin Electronics.
D. Didymus, Basingstoke.

A. The Joysticks you can obtain from Maplin Electronics are compatible with the Atari VCS/400/800. Unfortunately Atari joysticks are not directly compatible with the BBC Micro. However it is my opinion (for what it's worth) that Atari Joysticks are the best around. So what do you do? Well, short of doing a conversion on the joysticks (or to be more precise the cable) the other alternative to you is to purchase an adaptor. The only adaptor I know of which allows you to connect Atari joysticks to the BBC Micro is made by Oakleaf Computers and costs £13.95. You would have to buy the joysticks separately though as this only covers the interface. The joysticks would not be connected through the Analogue port but via the 20 way user port – routines are given to use the devices. Your other alternative is to buy one of the joysticks that are directly compatible with the BBC Micro. The official BBC Joysticks costs £13 and should be available from most Acorn dealers. There are several other companies that manufacture different joysticks and we will be looking at them in the near future – most of these are of a high quality but unfortunately at a proportionate high cost.
Maplin Electronic Supplies Ltd., P.O. Box 3, Rayleigh, Essex.
Tel. Southend (0702) 552911/554155
Oakleaf Computers Ltd., 121 Dudley Road, Grantham, Lincs., NG31 9AD.
Tel. 0476-76994

Q. I have been informed by Vixen Computer Systems (an official Acorn dealer) that my Model 'B' BBC Computer is in fact a Model 'A' upgraded to a 'B'. I purchased my computer from Eltec Services Ltd., 231 Manningham Lane, Bradford (Tel. (0274) 491372); also an official Acorn dealer, at £435 (+ £3 car.). On the receipt it stated that they were selling me "1 BBc Model 'B' Microcomputer S/N 110597". What do you advise I should do? Should I ask them to exchange my falsely claimed 'B' for a proper 'B' or ask for my money back? What is the difference between a Model 'A' upgraded to a 'B' and a model 'B'.
H.R. Lees, Grimsby.

A. There are two ways to look at this situation – practically and morally. There is no real difference between a fully upgraded 'A' and a 'B' – both should perform the same. If your pseudo-B is working well and has no faults then you shouldn't worry too much – however if there anything wrong with it all (perhaps that is why you were at Vixen ?) then you have due cause to complain back to Eltec. When Model B's were in very short supply several dealers (too many for most peoples liking) found an easy way to both make money and supply the demand. What they did, and you have become a victim of, is to buy readily available Model A's then convert them to Model B's and sell them as such (at higher prices – you paid almost £40 ovr the odds). Technically an upgraded A is a B but even so Eltec should have had the decency to put at least "Model B (upgraded A)" on the receipt. And what should you do? As I said above if a fault develops on your micro take it directly back to Eltec and make sure that they repair it. Other than that we will be contacting Eltec ourselves and will let you know what they say in due course.

Paul Barbour

22 spiral patterns II

Although written independently of the Spiral Patterns program that appears in LASERBUG No. 4 this has the same title. Although the actual program itself is standard, there is great room for expansion. Just altering a single variable or the step size in a loop can make the world of a difference.

Enter the program as it appears below, then try changing it around a bit – simply experiment. If you come up with any startling patterns let us know.

```
L.
   10 REM    SPiral Patterns II
   20 REM      by Phil Hirst
   30 :
   40 REM          11/9/82
   50 :
   60 REM        Version 1.0
   70 :
   80 REM Takes up ~0.65k memory
   90 REM  and uses MODE 2 only
  100 :
  110 REM       Requires 32k
  120 :
  130 REM   (C) LASERBUG 1982
  140 :
  150     :::::
  160 :
  170 MODE2:VDU23;8202;0;0;0;
  180 VDU29,640;512;
  190 radius%=1
  200 MOVESINRAD(0)*radius%,COSRAD
(0)*radius%
  210 colour%=1
  220 REPEAT
  230   FORI%=0TO359STEP8
  240     GCOL0,colour%
  250     DRAWSINRAD(I%)*radius%,C
OSRAD(I%)*radius%
  260     IFI%MOD45=0THENradius%=r
adius%+3:colour%=colour%+1:IFcolou
r%=8THENcolour%=1
  270     NEXT
  280   UNTILradius%>=512
  290 delay=10
  300 A=1:B=2
  310 REPEAT
  320   VDU19,A,B,0,0,0
  330   A=A+1:B=B+1
  340   IFA=8THENA=1:B=B+1
  350   IFB=8THENB=1
  360   TIME=0:REPEATUNTILTIME=del
ay
  370   UNTILA=7ANDB=7
  380 delay=delay-1:IFdelay<1THENd
elay=1
  390 GOTO290
```


An Independent Research & Development Users Group

PROTON

ACCELERATION

Independent designers - O.E.M. - & Professional bodies are welcome

MONTHLY NEWSLETTERS

For full details send S.A.E.(A5) to - Proton Acceleration
16 Iddesleigh Road, Charminster, Bournemouth, BH3 7JR

©LASERBUG 1982. Reasonable care is taken to avoid errors in this magazine. However, no liability is accepted for any mistakes which may occur. The opinions expressed in articles are those of the authors and do not necessarily express those of the Editor. No material may be reproduced in any way (for any reason) without the written consent of the Editor.

LASERBUG is edited by Paul Barbour.

The Contributors for this month were Paul Barbour, Oliver Betts, Phil Hirst, John Claydon, Dr D E Susans and Nick Goodwin.

The final copy date for Issue 9 (February) is Tuesday 4th January. Payment for articles is at the rate of £5 or £10 per contribution depending on size and content. Other rates can be negotiated for work of high standard.

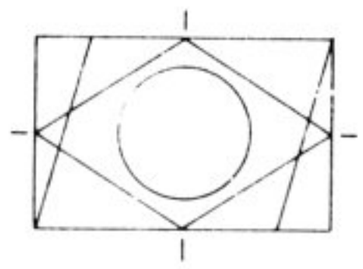
Printed by Prestige Press (UK) Ltd, East Street, Chesham, Bucks.
LASERBUG, 10 Dawley Ride, Colnbrook, Slough, Berks, SL3 0QH.
Membership: £12 for 1 year (£18 overseas), £6 for ½ year (£9 overseas).
Advertising rates available on request.

padreview

At the PCW Show a few months back a pack of 3 pads was being sold for use with the BBC Micro. This month we take a look at the pads themselves and assess their usefulness.

There were three pads being sold—flow-chart, screen layout and symbol design. At the PCW Show they were selling for £9 a set but this included binders for the pads and an empty folder with the BBC logo on it. I must admit that although I know they are made by PRESSBOARD Ltd., I do not know either their retail price or who markets them. I would be grateful if someone could enlighten me on this fact.

All of the pads are A4 size and hold 100 sheets each. The flowchart pad contains normal flowcharting paper and is not specialised to the BBC Machine. The paper is "griddled" into 6 × 11 squares and each square contains the outline for either statement, printout, decision or continuity boxes:



I know these names are not proper flowchart symbol names but they're the ones I'm used to using. We will be printing an article on flowcharting and how it helps programming in the future.

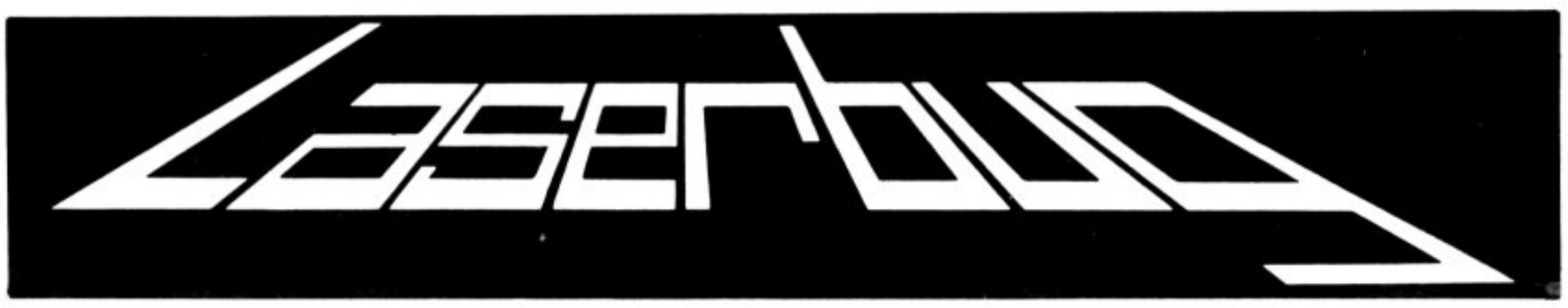
The symbol design pads are apparently for the BBC Micro but are no more than glorified graph paper. It is identical to normal graph paper except that the grids are based on 8 × 8 and not 10 × 10. In the top right hand corner there is a separate grid which has the numbers added onto the boxes. Apart from this you would be better off getting a normal piece of graph paper and ruling it up into 8 × 8 grids—it would probably be a lot cheaper.

The third and final pad is for screen layout and is the only one in my opinion that is really worth buying. It is really like a combination of pages 493/4 and is extremely useful. I use this paper quite often but unfortunately it isn't quite transparent enough to be able to copy maps, etc. easily.

Although all three pads are useful to some extent I would probably only be interested in buying the screen layout pad. Flowcharts I generally sketch out on pieces of scrap paper and as I said above I would use normal graph paper for symbol design or one of the character generator programs. I do not know the price of these items, as I explained above, but if other companies prices for similar products are anything to go by, they will price themselves out of the market.

Paul Barbour

LASERBUG
10 Dawley Ride,
Colnbrook,
Slough, Berks,
SL3 0QH.



SUBSCRIBE NOW TO GET THE BEST OUT OF YOUR BBC MICROCOMPUTER

Please enrol me as a Member of LASERBUG. I enclose a cheque/postal order for £12.00 for 12 months subscription.

Name.....

Address.....

.....

.....Date.....

Telephone .....(Home).....(Work)

To run from issue.....

I would/would not like my name and address/telephone number printed in the Contacts page of the LASERBUG newsletter.

Please make all cheques/postal orders payable to LASERBUG ... and you can always send a copy of this form if you don't want to cut up your copy of LASERBUG...

LASERBUG SPECIAL OFFERS

COVERS FOR YOUR BBC MICRO ONLY £3.25
5% DISCOUNT ON ALL GOODS FROM DRACAL
BACK COPY AND PHOTOCOPY SERVICE
NEW CLASSIFIED ADS - PRIVATE AND COMMERCIAL
10% DISCOUNT ON ALL BOOKS FROM INTERFACE

LASERBUG Dust Covers are manufactured for us by a well known company and are made to extremely high quality. For full details on the covers see LASERBUG Issue 5. Price: £3.25 inclusive.

Dracal (North West) Limited have kindly agreed to give all LASERBUG members a 5% discount on all their goods. These include design sheets and monitor stands. Full details from Dracal (North West) Limited, P.O. Box 130, Warrington, WA1 4QB. Phone Padgate 815419. Also see LASERBUG Issue 6.

Missed out on a copy of LASERBUG??? If so then you require our back copy service. Back copies are available for the price of £1.25 each and are available for all magazines printed to date except Issue 1. Brief details of the magazines are given below.

Issue 2 (16 pages) – Sound/Envelope, *FX Part 1, Teletext Part 2, User Definable Key & Pontoon
Issue 3 (24 pages) – Programmers Corner, *FX Part 2, Epson Screen Dump, Soft Review, Telesoftware
Issue 4 (16 pages) – Hardspot, What Printer?, Bookreview, Oddspot, Pixel Power, Moving Things, Four In A Row
Issue 5 (32 pages) – Wordprocessor, Machine Code, Disassembler, Seikosha Screen Dump, Circles Galore, Conversions for RGB Input
Issue 6 (24 pages) – Software Protection Part I, Puzzle Program, How To Use Joysticks, Queryspot, String, String, String, What Monitor?

Also please either include 50p P & P for the first magazine and 25p for each subsequent one or include an A4 SAE of appropriate size and postage.

For those magazines which we have run out of stock on we offer a photocopy service. This is also available if there is a particular article or program you wish photocopied instead of buying the whole magazine. Price: 10p/page + postage as for backcopies. For Issue 1 therefore which is a 16 page magazine please send £1.60 + postage.

Want to take out an ad in LASERBUG but can't afford full advertising rates? Then take out a classified ad now. Rates: 10p/word (minimum charge 15 words) classified/£5 per column centimetre semi display.

Interface have allowed us to offer you a 10% discount on all their books. However unlike the Dracal offer you have to buy the books through us using the form below. The two books Interface offer are Making The Most Of Your BBC Micro (reviewed in Issue 4) by Tim Hartnell and The BBC Micro Revealed (reviewed in Issue 5) by Jeremy Ruston. A big thank-you to Interface for making such a kind offer.

Please send me
..... LASERBUG Dust Cover(s) @ £3.25 each
..... LASERBUG Back Copies of Issue(s) ..... @ £1.25 each
..... LASERBUG Issue 1(s) ..... (Photocopies only) @ £1.60 each
..... Photocopie(s) of LASERBUG articles @ 10p/page*
..... Classified ad(s)*
..... Copies of Making The Most Of Your BBC Micro By Tim Hartnell at £5.81 each
..... Copies of The BBC Micro Revealed by Jeremy Ruston at £7.16 each

NAME ..... ADDRESS .....

.....

I enclose a cheque/PO for ..... made payable to LASERBUG

PLEASE ALLOW 28 DAYS FOR DELIVERY

*Please enclose details on a separate sheet