C16/C116+4

COMPUTING-MONTHLY

ISSUE 10

January 1990

VOLUME 1

C16
C116
+4 ONLY

UnderGround
Program
PART 3

Software
Guide
PART 4

The History
Of the C16/+4

The Only C16/C116/+4 Newsletter

That Is Monthly

BLOOP BUG Part 1
A C16+64k/Plus 4 Sprite Program
By Peter & Melany Crack

PLUS/4

Editorial

Hello again dear members
Welcome to the January 1990, well I said the '90's would bring changes, well they have, this issue is ready for the 15th Janury and should reach you not long after.

Next month will be a double February & March 1990 issue, so monthly members please send £2.00 instead of the monthly £1.00, because the Feb/Mar issue will be a double packed approx (45 pages) issue, I'm doing this to get in front of myself so hopefully I will have the April issue finished by the end of March but we'll just have to wait and see, so please send the £2.00 by March 15th 1990, many thanks.

Well then here it is the new look A5 format, what da ya think??

Also we have some new members, an updated listed will be displayed in next issue along with my First Part Of My Own DIY Basic Course, could'nt get it finished on time to put in this issue so next month will be a definate, sorry for that.

I've had it pointed out to me by James Nichol the author of the Luminance Colour Chart printed last month, aparently lines 160 - 230 contained a ':' at the end of each line, this should be replaced by ';' in order for the program to work correctly, many thanks James.

Next issue I will be running a competition, and theres quite a bit of software up for grabs, so look out.

Right, on page 17 of this ish you will see an advert for PAGE SETTER, the writing is in dutch or German, and I hope Ronald de Bruin from Holland can translate it for the next issue, but I've included it, because it shows what is being developed for the C16/+4 in other countries, so why can't this BLOODY country get off its BACKSIDE and do stuff like that, I know there are coders out there that could do it, so why are'nt they??

Right, Yearly subscribers will find a sheet with there mags this month, this is a re-subscribe form. This will test, to see what people have thought of the mag because if you like, then you'll most probably re-subscribe, but if you did'nt like it then they will not re-subscribe, but if its just to say GET LOST, please fill in the form and return with any payments to the address below, many thanks, and I hope that you will re-subscribe.

Well I'll close down now and let you read on, and I hope you like the mag, even though it is a little late, sorry again!!!!!

Write to:- Roy Robinson, 112 Cliff Road, HORNSEA, N.Humberside, HU18 1JE.
Telephone:- 0964-534611

If sending subscription payments, please mark envelope RE-SUBS, many thanks, it will make my life a lot easier. BYE, Roy Robinson (ED).

The following is a press release from Commodore, issued shortly before the release of the Plus/4. It's interesting because it shows some of the thought that went into the Plus/4 -- and some of the changes the concept underwent before the computer finally became available to the public.
-- c.d.

Commodore Launches New Home Computer Line

Commodore introduced a new line of home computers at the winter CES in Las Vegas, Nevada. Designated the COMMODORE 264, the series is an addition of multiple models to the current VIC-20 and COMMODORE 64 products.

The new COMMODORE 264 line offers several models with BUILT-IN software, with its basic capabilities strengthened by many features, including: - 64K RAM (60K available for BASIC programming) - Full Typewriter-Style Keyboard - Optional Built-in Software - Screen Window Capability - HELP key - 8 Programmed, Reprogrammable Function Keys - Four Separate Cursor Keys - Compatibility with most COMMODORE 64 and VIC-20 Peripherals - 128 Colors (16 primary colors, 8 luminance levels) Over 75 BASIC Commands - High Resolution Graphics Plotting - Split-Screen Text With High-Res Graphics - Graphic Character Set On Keyboard - Keyboard Color Controls - 320x200 Pixel Screen Resolution - Reverse and Flashing Characters - 2 Tone Generators - Built-In Machine Language Monitor (12 commands) The new models will be available for sale in late spring/early summer.

In making the announcement, Don Richard, president of Commodore Business Machines, Inc., said, 'This product line is a logical addition to the current VIC-20 and COMMODORE 64 family of computers and should expand the appeal of computer to a broader spectrum of consumers. The VIC-20 is an ideal starter computer, while the COMMODORE 64 is a versatile general purpose computer used in the home, office or school. The new COMMODORE 264 series now offers full-featured applications computers with emphasis on simplified programming, excellent graphics and built-in productivity software. This makes it useful for the serious home user, the writer, the financial analyst and the small business operator.'

'We expect the COMMODORE 64 and COMMODORE 264 series to dominate the home computer marketplace in 1984.', said Mr. Richard.

Several models of the COMMODORE 264 will be offered when the computer goes on sale in late spring, each with a different built-in software package. Although Commodore has not yet announced specific titles, built-in applications will focus on personal productivity, according to Sig Hartmann, president of Commodore Software.

Commodore also plans to have over 30 Commodore software products available on cartridge, disk, and tape when the COMMODORE 264 goes on sale.

Said Sig Hartmann, 'The key area we're emphasizing in software for the COMMODORE 264 is productivity, covering such areas as household management, word processing, calculation, business accounting, and education. We believe we are in a 'Decade of Increased Productivity'

and microcomputers like the COMMODORE 264 are going to make an important contribution helping us to get more things done, more things learned, and more things enjoyed in less time than ever before -- without sacrificing quality or efficiency.

'The COMMODORE 264 is the first personal computer offering a selection of productivity software built into the machine. In other words, by choosing a COMMODORE 264 with a particular software package built-in, you can tailor the computer to your own needs. If you use your computer to do mostly word processing, you can buy the COMMODORE 264 with professional word processing built in. If you need financial calculation, you can have a built-in spreadsheet...plus...you can use standard software on cartridge, disk or tape'

All software built into the COMMODORE 264 will also be available on plug-in cartridge. For example, someone who buys a COMMODORE 264 with a built-in word processor can buy an elecrtonic spreadsheet on cartridge, or vice versa. In addition, software for the COMMODORE 264 will also be available on cartridge for the COMMODORE 64.

'Commodore is putting more 'software on silicon' than any other company,' Hartmann explained. 'This means putting software on ROM chips, which Commodore designs and manufactures. The cost savings which come from being vertically integrated - in other words, making computer chips as well as computers - means Commodore can build large software programs into the computer and also put more software on plug-in cartridges.

'We're definitely putting more software on cartridge because cartridge programs give the user more workspace inside the computer and are convenient to use, and because Commodore can manufacture cartridge software at consumer prices', Hartmann added.

(AND -- here's an early press release about MicroIllustrator, an excellent graphics package that runs well on the Plus/4 in Plus/4 versions.)

COMMODORE INTRODUCES
MICRO ILLUSTRATOR

Commodore Business Machines has reached a worldwide distribution/marketing agreement for the rights to the Commodore 64 and Commodore 264 versions of the Micro Illustrator.

Micro Illustrator, designed by Island Graphics, is the most popular microcomputer 'paint' system in the world, with its user base approaching 100,000 units. It provides users having no computer experience the power to create dazzling graphics for entertainment, business, program development or artistic expression. The Micro Illustrator is most recognized for its ease of use. The user performs the various functions by selecting from a menu of icons depicting the various features. The selection is performed with either a joystick or lightpen. In fact, the user never even has to touch the keyboard except to name a file.

Basic functions include the ability to draw freehand using a variety of brushes, colors, and textures. Other features include the ability to generate geometric figures such as lines, circles and boxes. There is also a fill feature and magnification mode, in which the user zooms in on a specific area for fine tuning.

The Commodore 64 version will utilize all 16 colors of the machine and

CONT ON PAGE 18

SOFTWARE GUIDE PART 4

BY DAVID CAMPBELL

16) YOUR COMMODORE, READERS SERVICES, ARGUS SPECIALIST PUBLICATIONS, ARGUS HOUSE, BOUNDARY WAY, HEMEL HEMPSTEAD, HP2 7ST.

Over the years Your Commodore has printed some 39 Programs within there magazines. These 39 Programs are contained on 5 Tapes or 5 Disks.

C16 SPECIAL A (7 PROGRAMS)

THE MONSTER RETURNS - an adventure set in the creepy world of Frankensteins monster.
SIMPLE - add icons, Pull down menues and windows to your Plus 4.
DISK MONITOR - talk directly to your disk drive.
CHANGE YOUR CHARACTER - a C16 and Plus 4 editor to redesign your character sets.
C16 ASSEMBLER -Put your C16 to serious use with this invaluable utility.
BREAK THE SPEED LIMIT - a high speed tape loader.
PLUS 4 DUMPER - obtain a hard copy of everything that you do.
TAPE HEAD READER - examine the storage routine with this handy routine.
C16 SOUND SAMPLER - sample a sound from your cassette and then edit it to Produce amazing results.

Order Codes :- tape YC16A disk YD16A

C16 SPECIAL B (6 PROGRAMS)

DUAL PROGRAMMING - work with two Programs at the same time.
LOWER CASE GRAPHICS - improve the look of your Programs by using the alternative character set.
CHARACTER EDITOR - devise your own character set.
CRIBBAGE - challenge your Plus 4 to a hand of this Popular Pub card game.
SPELLING CHECKER - avoid those embarrassing mistakes with this ingenious Program.
WORD-PRO ADD-ON - improve the Plus 4's built-in word Processor.

Order Codes:- tape YC16B disk YD16B

C16 SPECIAL C (8 PROGRAMS)

C16 SPRITES - give your C16 or Plus4 sprites like those to be found on the C64.
A demo routine is included to show you just what is Possible.
PLUS4 ANIMATOR - store a series of Pictures in memory to create moving Pictures.
REBOUND - an excellent version of the latest breakout style game.
DISK MENUES - find and load your disk Programs with ease.
TYPRO - turn your Plus4 and Printer into a Powerful electronic typewriter.

PLUS4 ASSEMBLER - an excellent machine code assembler.
TRANSCRIPT - owners of the Script Plus Cartridge can now convert their Plus4 text files to work with this word processor.
PLUS4 EXTENDED BASIC - add almost 40 new commands to the BASIC on your Plus4 or C16 with memory expansion.

Order Codes:- tape YC16C disk YD16D

C16 SPECIAL D (9 PROGRAMS)

MONEY PLUS - organise your financial affairs with this superb program.
PLUS4 DATABASE - a cassette based database for Plus4 owners who don't want to buy a disk drive.
FRUIT MACHINE - holds, nudges and a time limit make this a challenging game.
PLUS4 WINDOWS - add IBM PC style windows to your programs.
CONVERTER PLUS4 - converts your machine code to BASIC data statements.
SLEEVE PRINTER - catalogue your disks by printing the directory on the disk sleeve.
TEXT 80 - create 80 column displays on your Plus4 screen.

Order Codes:- tape YC16CD disk YC16DD

C16 SPECIAL E (9 PROGRAMS)

OOPS! - extra commands to make programming easier.
SPRITZ SPRITE SYSTEM - everything you need for those elusive sprites enjoyed so much by the C64 users.
PRINT FX - special effect printing brought to your screens.
HEAD FOR HOME - excitement galore in this version of that popular game Ludo.
PLUS4 AUTORUN - create commercial style auto-running programs on your Plus4.
DIRECTORY EDITOR - customise your disk directories with ease.
NUFONT - Put your creative talents to use and produce your own type faces.
HELP SCREENS - all important information at your finger tips.
PLUS4 UTILITIES - a trio of useful utilities that makes using your disk drive easier.

Order Codes:- tape YC16CE disk YC16DE

Prices Cassettes £5.00 Disks £7.00 Overseas add £1 Per item.
Cheques and POs should be made payable to ARGUS SPECIALIST PUBLICATIONS.
Allow 28 days for delivery.

N.B. YOUR COMMODORE has now dropped the C16/Plus4 these programs were listed for sale in the December 1989 issue.

17) YORK ELECTRONIC RESEARCH, THE PADDOCKS, JOCKEY LANE, HUNTINGTON, - YORK, YO3 9NE. Telephone (0904) 610722.

PRINT ENHANCER Plus4 disk £19.99
Plus4 desk top Publishing: Proportionally spaced, high quality printouts, from BASIC, 3+1 and script/Plus. Supplied with 15 fonts and font designer Program. MPS 801/803, VIC 1525.

RS232 INTERFACE Plus 4 £34.99
Measuring only 12*69*57mm the smallest and neatest unit available Conforms to Commodore 1011A user-Port standard. Compatible with BASIC, Easyscript, Superscript, Superbase, Mini Office, Script Plus etc. Connect to RS232 Printers, modems and other devices. Supplied with 1 metre of cable (add 75P extra metre) terminated with a male (female) 25-way D-connector, or a custom cable made to your requirements. Our after sales service for unusual Printers guarantees to get you up and running. Supplied with a terminal emulator Program, file transfer & other utilities on tape/disk.

VIEWDATA TERMINALA PLUS4 £14.99
Access Prestel, Micronet, CityService etc. Works with any user-Port RS232 interface and 1200/75 modem.

6502 ASSEMBLER Plus 4 tape/disk £12.99
A sophisticated two-Pass symbolic assembler and text editor which supports tape and disk filing. The assembler, editor, source and object code may all be resident in memory simutaneously, facilitating rapid and interactive code development. Very fast edit/Assembler/test cycles.

Prices include P&P and VAT. Overseas add £2.50.

18) EEC LTD., 18-21 MISBOURNE HOUSE, CHILTERN HILL, CHALFONT ST. PETER, BUCKS, SL9 9UE. TELEPHONE (0753) 888866.

BROTHER HR10C CBM Serial £129.95

SEIKOSHA GP 500VC CBM Serial £125.00

add £6.00 Postage for Printers.

Thanks to Daniel Stokes for sending addresses of suppliers.

**********MOVING ROM TO RAM**********

IN REPLY TO WAYNE KENZITTS PHONE CALL SOME TIME AGO (SORRY I COULD NOT BE OF HELP) WHEN HE ASKED ME IF IT WERE POSSIBLE TO EMULATE THE CARTRIDGE BASED RETURN TO START OF PROGRAMME WHEN THE RESET BUTTON IS USED.

FIRST I THINK AN AUTO-RUN PROGRAMME MUST BE SET UP WHICH WILL CALL AND RUN THE FOLLOWING PROGRAMME.

THIS WAS WRITTEN BY R.C.HERMES AND PUBLISHED IN 'YOUR COMMODORE' AUGUST 1987. AS PART OF A RS232 UTILITY.

10BA-10C8 RESET TOP OF BASIC TO $8000 THIS HALVES THE SIZE OF +4'S MEMORY, NO ADDRESSES ABOVE THIS SHOULD BE USED

10B5-10B7 DISABLES RUN/STOP KEY,SEE ISSUE FOUR OF THIS MAGAZINE.

1043-106A COPIES BASIC OPRATING SYSTEM FROM ROM TO RAM. LOCATIONS $8000-$FCFF THEN SAME AGAIN FOR $FF40-$FFFF.

106C-1092 CHANGE ALL REFERENCES TO $FF3E TO $FF3F ($FF3E AND $FF3F ARE ROM RAM SWITCHES).

1095 STORE ACCUMULATOR IN $FF3F THE VALUE IS NOT IMPORTANT,THIS COMMAND SWITCHES OUT THE ROM AREAS FROM $8000 -$FCFF AND $FF40-$FFFF.

1098-109A SET ROM RAM VIEW REG.TO ENABLE LOCATIONS ABOVE $8000 TO BE VIEWED.

109D-10B2 CHANGE TWO LOCATIONS $8003 AND $F2A9 TO READ JMP$2000 WHERE A SMALL ROUTINE SITS,THIS OF COURSE COULD BE ANYWHERE IN MEMORY.EXCEPT OVER $8000!!!

10CA CLI BEWARE!!!! THE INTERRUPT IS SWITCHED ON AGAIN AND ALL PROCESSING IS NOW CARRIED OUT IN RAM.

10CB RTS.RETURN TO BASIC OR MONITOR

THIS PROGRAMME WILL DISABLE THE RUN/STOP THE RESET BUTTON USED ALONE,AND WHEN THE RESET,RUN/STOP COMBINATION IS USED ALSO THE 'X' COMMAND TO RETURN TO BASIC FROM MONITOR.THIS PROGRAMME IS CALLED BY SYS4163,AND YOUR PROGRAMME SHOULD OVERWRITE IT.

FROM NOW ON ANYTHING YOU CHANGE ABOVE $8000 WILL HAVE REAL TIME RESULTS.

FOR ME THAT MEANT KEY BOARD LOCK UP IN ABOUT 10 MINS. FROM WHICH POINT NOTHING WORKED NOT EVEN THE RESET KEY.

SO BEFORE YOU RUN THIS PROG SAVE IT!!!

2000-2017 SHORT ROUTINE TO PRINT ROM KEYWORDS LIST WHEN ABOVE KEYS ARE PRESSED.

REMOVE CALLS TO KEYBOARD WHEN YOU ARE READY AND REPLACE WITH BEQ$2000 AT $200B.

LET ME KNOW HOW YOU GET ON.

BEST OF LUCK.....PETER.

****

BY PETER CRACK

```
. 1043  78       SEI
. 1044  8D 3E FF STA $FF3E
. 1047  A9 80    LDA #$80
. 1049  85 D1    STA $D1
. 104B  A9 00    LDA #$00
. 104D  85 D0    STA $D0
. 104F  A2 80    LDX #$80
. 1051  A0 00    LDY #$00
. 1053  B1 D0    LDA ($D0),Y
. 1055  91 D0    STA ($D0),Y
. 1057  C8       INY
. 1058  D0 F9    BNE $1053
. 105A  E6 D1    INC $D1
. 105C  E8       INX
. 105D  E0 FD    CPX #$FD
. 105F  D0 F2    BNE $1053
. 1061  A0 40    LDY #$40
. 1063  B9 00 FF LDA $FF00,Y
. 1066  99 00 FF STA $FF00,Y
. 1069  C8       INY
. 106A  D0 F7    BNE $1063
. 106C  A9 3F    LDA #$3F
. 106E  8D 82 04 STA $0482
. 1071  8D 9E 04 STA $049E
. 1074  8D AC 04 STA $04AC
. 1077  8D B7 04 STA $04B7
. 107A  8D C2 04 STA $04C2
. 107D  8D CD 04 STA $04CD
. 1080  8D D8 04 STA $04D8
. 1083  8D E3 04 STA $04E3
. 1086  8D E1 07 STA $07E1
. 1089  8D 32 81 STA $8132
. 108C  8D 4E 81 STA $814E
. 108F  8D BB CF STA $CFBB
. 1092  8D F7 FF STA $FFF7
. 1095  8D 3F FF STA $FF3F
. 1098  A9 80    LDA #$80
. 109A  8D F8 07 STA $07F8
. 109D  A9 4C    LDA #$4C
. 109F  8D 03 80 STA $8003
. 10A2  8D A9 F2 STA $F2A9
. 10A5  A9 00    LDA #$00
. 10A7  8D 04 80 STA $8004
. 10AA  8D AA F2 STA $F2AA
. 10AD  A9 20    LDA #$20
. 10AF  8D 05 80 STA $8005
. 10B2  8D AB F2 STA $F2AB
. 10B5  A9 72    LDA #$72
. 10B7  8D 26 03 STA $0326
. 10BA  A9 00    LDA #$00
. 10BC  85 33    STA $33
. 10BE  85 35    STA $35
. 10C0  85 37    STA $37
. 10C2  A9 80    LDA #$80
. 10C4  85 34    STA $34
. 10C6  85 36    STA $36
. 10C8  85 38    STA $38
. 10CA  58       CLI
. 10CB  60       RTS

. 2000  A0 00    LDY #$00
. 2002  B9 8E 81 LDA $818E,Y
. 2005  20 D2 FF JSR $FFD2
. 2008  C8       INY
. 2009  D0 F7    BNE $2002
. 200B  20 9F FF JSR $FF9F
. 200E  20 E4 FF JSR $FFE4
. 2011  F0 F8    BEQ $200B
. 2013  C9 1B    CMP #$1B
. 2015  D0 E9    BNE $2000
. 2017  00       BRK
```

QUIXAVER for the COMMODORE C-16

QUIXAVER is a tape turbo for the C-16.

It doesn't take up any of the C-16's precious BASIC memory, and can be used in all the C-16's graphics modes as well as the text mode.

As well as BASIC programs, it can handle screens of text or graphics and blocks of machine code or data. (Sequential files need special treatment.)

It can load BASIC programs correctly even if the start-location of BASIC has been changed since they were saved.

It provides an auto-run facility for both BASIC and machine-code programs.

It can save a BASIC program complete with all its variables and reload it for further use.

It can preserve all the variables of an existing BASIC program while loading another BASIC program to replace it, so that the new program can operate with their existing values.

It fast-loads with the screen on, and progress is shown by a flying cursor.

As well as its normal QUIXAVE, it provides a shortened form — FLIXAVE — that saves time, tape, and temper when several files have to be loaded one after another.

It can be used to provide the 'OLD' function, restoring a 'NEWed' BASIC program with a simple 'LOAD'.

It works in the ordinary C-16, or in one with expanded memory (so far it hasn't been tested beyond 32K, but it should work with the full 64K), though it does clash with some commercial programs.

It can easily be disabled when not required.

It loads and initialises itself automatically whenever anything saved with it is loaded, so it rarely needs to be loaded separately.

All QUIXAVEd files will load 'from cold' using the normal commands with no preliminaries, whether or not QUIXAVER is present.

* * *

9

The origin of QUIXAVER goes back to a C-16 tape turbo by Nick Hampshire, published under the title 'Break the Speed Limit' in 'Your Commodore' for February 1986. I got this entered and running within two days of getting the magazine, and it did all that was claimed for it. But: it took up a fair amount of space at the top of the BASIC RAM; it couldn't be used in graphics modes; and it couldn't be used to append one program to another, because it wouldn't load a BASIC program correctly if the start of BASIC wasn't in the same place as when the program was saved. So I decided to have a go at modifying it, and QUIXAVER is the eventual result. I had a great deal of help from Beresford's 'C-16 Machine Language for the Absolute Beginner', Gerrard and Bergin's 'The Complete Commodore 16 ROM Disassembly', and Zaks' 'Programming the 6502', but it took a long, long, time, because I had only the C-16's simple built-in MONITOR to do it with and I'd never done any machine-code programming before.

I condensed the program by using existing subroutines from the ROM wherever I could. (I realise that this would be risky with a current-model machine because the ROM might later be changed, but that doesn't seem likely to happen with the C-16!) I found a way of calling up the 'save' routine without clearing the cassette buffer, and this allowed the first part of QUIXAVER to live there all the time; then I moved most of the remainder into an area of RAM said to be 'reserved for extra ROMs', and what was too much for that spilled over into the lower end of the 'BASIC pseudo stack', where — so far — it doesn't seem to clash with anything I've tried to do. I don't know just what the pseudo stack does, but I suspect that it handles the return addresses for subroutines, just like the processor stack, and that unless the subroutines are very deeply nested the stacking won't extend far enough down to corrupt QUIXAVER. (Any information would be welcome!) I also managed to add some extra facilities and make the program easier to use.

I did the modifications just a little step at a time, and after each step — and there were a good many hundreds of them in all — I used the program as it then stood to save and reload itself, to check that it would still work; and I've used it in its various editions for all my tape saves for the best part of three years. Throughout all these hundreds of saves and loads there has never yet been a load error except when I've done something silly. In fact I had to introduce a dummy error when I wanted to test the error-trap!

The basic method of recording bits on the tape has remained unchanged throughout, and its reliability is a tribute to the soundness of Nick Hampshire's original scheme.

* * *

Eric Jones

```
1510 IFD$="2"THEND$=S$(68):PRINTCL$;D$:G
0T04430

1520 IFD$="3"THEND$=S$(69):PRINTCL$;D$:G
0T04260

1530 IFD$="4"THEND$=S$(70):PRINTCL$;D$:G
0T04070

1540 IFD$="5"THEND$=S$(71):PRINTCL$;D$:G
0T04270

1550 IFD$="6"THEND$=S$(72):PRINTCL$;D$:G
0T04060

1560 IFD$="7"THEND$=S$(73):PRINTCL$;D$:G
0T04140

1570 IFD$="8"THEND$=S$(74):PRINTCL$;D$:G
0T04600

1580 IFD$="9"THEND$=S$(75):PRINTCL$;D$:G
0T04410

1590 IFD$="A"THEND$=S$(76):PRINTCL$;D$:G
0T04060

1600 IFD$="B"THEND$=S$(77):PRINTCL$;D$:G
0T04410

1610 IFD$="C"THEND$=S$(78):PRINTCL$;D$:G
0T04100

1620 IFD$="D"THEND$=S$(79):PRINTOL$;D$:G
0T04540

1630 IFD$="E"THEND$=S$(80):PRINTCL$;D$:G
0T04620

1640 IFD$="F"THEND$=S$(81):PRINTCL$;D$:G
0T04070

1650 IFD$="G"THEND$=S$(82):PRINTCL$;D$:G
0T04060

1660 IFD$="H"THEND$=S$(83):PRINTCL$;D$:G
0T04440

1670 IFD$="I"THEND$=S$(84):PRINTCL$;D$:G
0T04100

1680 IFD$="J"THEND$=S$(85):PRINTCL$;D$:G
0T04090

1690 IFD$="K"THEND$=S$(86):PRINTCL$;D$:G
0T04100

1700 IFD$="L"THEND$=S$(87):PRINTCL$;D$:G
0T04060

1710 G0T0290

1720 G0SUB4020

1730 FORY=88T0109:PRINTSPC(2);S$(Y):NEXT

1740 PRINTLL$

1750 GETE$:IFE$=""THEN1750

1760 IFE$="0"THENE$=S$(88):PRINTCL$;E$:G
0T04410

1770 IFE$="1"THENE$=S$(89):PRINTCL$;E$:G
0T04170

1780 IFE$="2"THENE$=S$(90):PRINTCL$;E$:G
0T04550

1790 IFE$="3"THENE$=S$(91):PRINTCL$;E$:G
0T04180

1800 IFE$="4"THENE$=S$(92):PRINTCL$;E$:G
0T04060

1810 IFE$="5"THENE$=S$(93):PRINTCL$;E$:G
0T04510

1820 IFE$="6"THENE$=S$(94):PRINTCL$;E$:G
0T04100
```

```
1830 IFE$="7"THENE$=S$(95):PRINTCL$;E$:G
OTO4060

1840 IFE$="8"THENE$=S$(96):PRINTCL$;E$:G
OTO4050

1850 IFE$="9"THENE$=S$(97):PRINTCL$;E$:G
OTO4200

1860 IFE$="A"THENE$=S$(98):PRINTCL$;E$:G
OTO4160

1870 IFE$="B"THENE$=S$(99):PRINTCL$;E$:G
OTO4110

1880 IFE$="C"THENE$=S$(100):PRINTCL$;E$:
GOTO4110

1890 IFE$="D"THENE$=S$(101):PRINTCL$;E$:
GOTO4110

1900 IFE$="E"THENE$=S$(102):PRINTCL$;E$
GOTO4100

1910 IFE$="F"THENE$=S$(103):PRINTCL$;E$:
GOTO4100
1920 IFE$="G"THENE$=S$(104):PRINTCL$;E$:
GOTO4220

1930 IFE$="H"THENE$=S$(105):PRINTCL$;E$:
GOTO4100

1940 IFE$="I"THENE$=S$(106):PRINTCL$;E$:
GOTO4400

1950 IFE$="J"THENE$=S$(107):PRINTCL$;E$:
GOTO4560

1960 IFE$="K"THENE$=S$(108):PRINTCL$;E$:
GOTO4340

1970 IFE$="L"THENE$=S$(109):PRINTCL$;E$:
GOTO4060
```

```
1980 GOTO290

1990 GOSUB4020

2000 FORY=110TO131:PRINTSPC(2);S$(Y):NEX
T

2010 PRINTLL$

2020 GETF$:IFF$=""THEN2020


2030 IFF$="0"THENF$=S$(110):PRINTCL$;F$:
GOTO4110

2040 IFF$="1"THENF$=S$(111):PRINTCL$;F$:
GOTO4070

2050 IFF$="2"THENF$=S$(112):PRINTCL$;F$:
GOTO4110

2060 IFF$="3"THENF$=S$(113):PRINTCL$;F$:
GOTO4110

2070 IFF$="4"THENF$=S$(114):PRINTCL$;F$:
GOTO4110

2080 IFF$="5"THENF$=S$(115):PRINTCL$;F$:
GOTO4110

2090 IFF$="6"THENF$=S$(116):PRINTCL$;F$:
GOTO4560

2100 IFF$="7"THENF$=S$(117):PRINTCL$;F$:
GOTO4100
```

Con't Next Issue

```
*****************************************************************
****************************** BLOOPING BUG ******************************
*****************************************************************
*       By PETER and MELANY CRACK              1989
Part 1.
This is the first programme using sprites I have written,so you will have to
*forgive the spaces and odd jump instructions scattered here and there.
*The best way to save this programme,when you have all the parts entered is
*in two parts,The main section from $4000-$57BF and data from $B000-$C2FF
*So lets begin,enter monitor,type F4000 57BF EA and press return,this clears
*the code area,also watch the addresses as I have submitted this programme
*in running order,so the addresses for each piece of code do jump about a
*bit.This month deals with the scene setting and instructions,when you have
*entered it,save it!!!.Then run it,and to run it type G5100 and press return
*It will only run from monitor,and as I have used page zero locations
*basic cannot be used as well.
Here is the explanation of how it runs.
5100-5107 Clear lo-res screen and change to lower case character set.
510A-5114 Set cursor to my first screen position and set screen colour black
5117-5122 Print title. Data held in $5200-$52F0.
5124-5126 Set lowest scroll position and reduce screen to 24 lines.
5129-512B Gosub delay 'X' register holds length (so that you can read it).
512E-5130 Set border to grey.
5133-5135 Print text border in line 25 (small blue squares).
5138-5144 Set registers for printing lines of text held in $5300 on and set
*         cursor colour for end of game.
5147-514b disable interupts ,set 'y' register to print 32 lines of text and
*         save copy on stack.
514C-514F Set 'y' register to six and save copy on stack,this is the number
*         of times we have to shift the screen up before the next line
*         becomes visible,if you look at line $5162 you can see I have used
*         the command BPL (branch if plus remember that zero in hexadecimal
*         is a plus number so this routine will be carried out seven times).
5150-5155 Checks to see if raster is at the bottom of the screen if not wait
5157-515C Shift screen up one pixel and gosub short delay.
515F-5162 Do it seven times.
5164-5169 Wait until raster is near the bottom of the screen.
516B-516D When it is reset scroll register and.........
5170-519F Take the second line and put into the first line on the screen
*         and do the same for all the other lines,thus scrolling the screen
*         up one line.
51A1-51A3 Print a line of blue squares in line 25 ((hidden).
51A6-51C3 Overprint this line with text from data held in $5300 on,$D2 holds
*         the offset from the beginning of the page of data and is increased
*         by one for every character printed,'X' register makes sure only
*         one line is printed and by starting the print one character in
*         from left hand edge and stopping one character short at right hand
*         edge a blue square border is created.
51C5-51CA Checks if 32 lines have been printed,if yes then enable interupts.
51CB-51CD Reset scroll register to normal and return to 25 lines.
51D0-51DA Wait for any key input,then return to upper case character set and
*         jump to next part of the programme.
51DD-51EA Prints a line of blue squares at the bottom of the screen,line 25
*         'X' register holds the number of characters to be printed.
51F4-51FF Simple delay routine,'X' register holds length of delay.
5200-52F0 Data for title.
5300-57BF Data for instructions.
*         NOTE...if you want to run this part of the programme,and I hope
*         you do!! Then type in (on a new line) A5080 JMP$5080 and press
*         return. once you have run the programme press reset button to end.
*         And thats all till next month. as always any problems or
*         suggestions just phone me on 01 367 3152 or better write in to
*         the magazine!!!!.............................PETER.
```

```
. 5100  A9 93     LDA #$93
. 5102  20 D2 FF  JSR $FFD2
. 5105  A9 0E     LDA #$0E
. 5107  20 D2 FF  JSR $FFD2
. 510A  18        CLC
. 510B  A2 0B     LDX #$0B
. 510D  A0 06     LDY #$06
. 510F  20 F0 FF  JSR $FFF0
. 5112  A9 00     LDA #$00
. 5114  8D 15 FF  STA $FF15
. 5117  A2 00     LDX #$00
. 5119  BD 00 52  LDA $5200,X
. 511C  20 D2 FF  JSR $FFD2
. 511F  E8        INX
. 5120  E0 F0     CPX #$F0
. 5122  D0 F5     BNE $5119
. 5124  A9 17     LDA #$17
. 5126  8D 06 FF  STA $FF06
. 5129  A2 FF     LDX #$FF
. 512B  20 F4 51  JSR $51F4
. 512E  A9 21     LDA #$21
. 5130  8D 19 FF  STA $FF19
. 5133  A2 27     LDX #$27
. 5135  20 DD 51  JSR $51DD
. 5138  A9 53     LDA #$53
. 513A  85 D1     STA $D1
. 513C  A9 00     LDA #$00
. 513E  85 D0     STA $D0
. 5140  85 D2     STA $D2
. 5142  A9 96     LDA #$96
. 5144  20 D2 FF  JSR $FFD2
. 5147  78        SEI
. 5148  A0 20     LDY #$20
. 514A  98        TYA
. 514B  48        PHA
. 514C  A0 06     LDY #$06
. 514E  98        TYA
. 514F  48        PHA
. 5150  AD 1D FF  LDA $FF1D
. 5153  C9 C0     CMP #$C0
. 5155  D0 F9     BNE $5150
. 5157  CE 06 FF  DEC $FF06
. 515A  A2 20     LDX #$20
. 515C  20 F4 51  JSR $51F4
. 515F  68        PLA
. 5160  A8        TAY
. 5161  88        DEY
. 5162  10 EA     BPL $514E
. 5164  AD 1D FF  LDA $FF1D
. 5167  C9 8E     CMP #$8E
. 5169  D0 F9     BNE $5164
. 516B  A9 17     LDA #$17
. 516D  8D 06 FF  STA $FF06
. 5170  A9 0C     LDA #$0C
. 5172  85 D6     STA $D6
. 5174  85 D8     STA $D8
. 5176  A9 28     LDA #$28
. 5178  85 D5     STA $D5
. 517A  85 D9     STA $D9
. 517C  A9 08     LDA #$08
. 517E  85 DA     STA $DA
. 5180  85 DC     STA $DC
. 5182  A9 00     LDA #$00
. 5184  85 D7     STA $D7
. 5186  85 DB     STA $DB
. 5188  A8        TAY
```

```
. 5189  A2 04     LDX #$04
. 518B  B1 D5     LDA ($D5),Y
. 518D  91 D7     STA ($D7),Y
. 518F  B1 D9     LDA ($D9),Y
. 5191  91 DB     STA ($DB),Y
. 5193  C8        INY
. 5194  D0 F5     BNE $518B
. 5196  E6 D6     INC $D6
. 5198  E6 D8     INC $D8
. 519A  E6 DA     INC $DA
. 519C  E6 DC     INC $DC
. 519E  CA        DEX
. 519F  D0 EA     BNE $518B
. 51A1  A2 27     LDX #$27
. 51A3  20 DD 51  JSR $51DD
. 51A6  A4 D2     LDY $D2
. 51A8  A2 00     LDX #$00
. 51AA  B1 D0     LDA ($D0),Y
. 51AC  9D C1 0F  STA $0FC1,X
. 51AF  A9 48     LDA #$48
. 51B1  9D C1 0B  STA $0BC1,X
. 51B4  A5 D2     LDA $D2
. 51B6  18        CLC
. 51B7  69 01     ADC #$01
. 51B9  90 02     BCC $51BD
. 51BB  E6 D1     INC $D1
. 51BD  85 D2     STA $D2
. 51BF  C8        INY
. 51C0  E8        INX
. 51C1  E0 26     CPX #$26
. 51C3  D0 E5     BNE $51AA
. 51C5  68        PLA
. 51C6  A8        TAY
. 51C7  88        DEY
. 51C8  D0 80     BNE $514A
. 51CA  58        CLI
. 51CB  A9 1B     LDA #$1B
. 51CD  8D 06 FF  STA $FF06
. 51D0  20 E4 FF  JSR $FFE4
. 51D3  F0 FB     BEQ $51D0
. 51D5  A9 8E     LDA #$8E
. 51D7  20 D2 FF  JSR $FFD2
. 51DA  4C 80 50  JMP $5080
. 51DD  A9 7E     LDA #$7E
. 51DF  9D C0 0F  STA $0FC0,X
. 51E2  A9 3E     LDA #$3E
. 51E4  9D C0 0B  STA $0BC0,X
. 51E7  CA        DEX
. 51E8  10 F3     BPL $51DD
. 51EA  60        RTS
. 51EB  A0 00     LDY #$00
. 51ED  8D 0E FF  STA $FF0E
. 51F0  88        DEY
. 51F1  8C 0F FF  STY $FF0F
. 51F4  A0 FF     LDY #$FF
. 51F6  20 11 E3  JSR $E311
. 51F9  88        DEY
. 51FA  D0 FA     BNE $51F6
. 51FC  CA        DEX
. 51FD  D0 F7     BNE $51F6
. 51FF  60        RTS
```

```
>5200 9A 7E 7E 7E 7E 7E 7E 7E :.~~~~~~~
>5208 7E 7E 7E 7E 7E 7E 7E 7E :~~~~~~~~
>5210 7E 7E 7E 7E 7E 7E 7E 7E :~~~~~~~~
>5218 7E 7E 7E 7E 7E 20 20 20 :~~~~~
>5220 20 20 20 20 20 20 20 20 :
>5228 20 7E 20 20 20 20 82 81 : ~     ..
>5230 22 62 4C 4F 4F 50 49 4E :"bLOOPIN
>5238 47 22 20 20 84 20 22 62 :G"  . "b
>5240 55 47 22 20 20 20 20 9A :UG"    .
>5248 7E 20 20 20 20 20 20 20 :~
>5250 20 20 20 20 20 7E 20 20 :     ~
>5258 20 20 05 60 60 60 60 60 :  .`````
>5260 60 60 60 60 60 20 20 20 :`````
>5268 60 60 60 60 60 20 20 20 :`````
>5270 20 9A 7E 20 20 20 20 20 : .~
>5278 20 20 20 20 20 20 20 7E :       ~
>5280 96 42 59 20 70 45 54 45 :.BY pETE
>5288 52 20 41 4E 44 20 6D 45 :R AND mE
>5290 4C 41 4E 49 45 20 63 52 :LANIE cR
>5298 41 43 4B 9A 7E 20 20 20 :ACK.~
>52A0 20 20 20 20 20 20 20 20 :
>52A8 20 7E 20 96 20 20 20 20 : ~ .
>52B0 20 20 20 20 20 40 31 39 :     @19
>52B8 38 39 2E 20 20 20 9A 20 :89.    .
>52C0 20 20 20 20 20 20 7E 20 :      ~
>52C8 20 20 20 20 20 20 20 20 :
>52D0 20 20 20 7E 7E 7E 7E 7E :   ~~~~~
>52D8 7E 7E 7E 7E 7E 7E 7E 7E :~~~~~~~~
>52E0 7E 7E 7E 7E 7E 7E 7E 7E :~~~~~~~~
>52E8 7E 7E 7E 7E 7E 7E 7E 20 :~~~~~~~
>52F0 20 20 20 20 20 20 20 20 :
>52F8 20 20 20 20 20 20 20 20 :
>5300 54 08 05 20 45 56 49 4C :T.. EVIL
>5308 20 42 0C 0F 0F 10 09 0E : B.......
>5310 07 20 42 15 07 20 08 01 :. B.. ..
>5318 13 20 09 0E 16 01 04 05 :. ......
>5320 04 20 19 0F 15 12 14 05 :. ......
>5328 0C 05 16 09 13 09 0F 0E :........
>5330 2C 0F 0E 0C 19 20 19 0F :,.... ..
>5338 15 20 03 01 0E 20 13 14 :. ... ..
>5340 0F 10 20 08 09 0D 20 06 :.. ... .
>5348 12 0F 0D 20 14 01 0B 09 :... ....
>5350 0E 07 20 0F 16 05 12 20 :.. .... 
>5358 01 0C 0C 20 14 08 05 20 :... ... 
>5360 14 05 0C 05 16 09 13 09 :........
>5368 0F 0E 13 20 09 0E 20 14 :... .. .
>5370 08 05 17 0F 12 0C 04 21 :.......!
>5378 2E 59 0F 15 12 20 14 01 :.Y... ..
>5380 13 0B 20 09 13 20 14 0F :.. .. ..
>5388 20 0B 09 0C 0C 20 42 0C : .... B.
>5390 0F 0F 10 09 0E 07 20 20 :......
>5398 42 15 07 2C 05 01 03 08 :B..,....
>53A0 20 14 09 0D 05 20 08 05 : .... ..
>53A8 20 09 13 20 08 09 14 2C : .. ...,
>53B0 08 05 20 17 09 0C 0C 20 :.. .... 
>53B8 20 20 20 20 20 20 13 05 :      ..
>53C0 10 01 12 01 14 05 20 09 :...... .
>53C8 0E 14 0F 20 13 0D 01 0C :... ....
>53D0 0C 05 12 20 01 0E 04 20 :... ... 
>53D8 06 01 13 14 05 12 20 02 :...... .
>53E0 15 07 13 2E 59 0F 15 20 :....Y.. 
>53E8 0D 15 13 14 20 0B 09 0C :.... ...
>53F0 0C 20 05 01 03 08 20 10 :. .... .
>53F8 09 05 03 05 20 0F 06 20 :.... .. 
>5400 08 09 0D 2C 20 13 0F 20 :...,  ..
>5408 20 20 14 08 01 14 20 08 :  .... .
>5410 05 20 17 09 0C 0C 20 02 :. .... .
>5418 05 20 12 05 0D 0F 16 05 :. ......
>5420 04 20 06 12 0F 0D 20 19 :. .... .
>5428 0F 15 12 20 54 2E 56 2E :... T.V.
>5430 20 13 03 12 05 05 0E 2E : .......
>5438 2E 2E 20 4F 0E 0C 19 20 :.. O... 
>5440 42 0C 0F 0F 10 09 0E 07 :B.......
>5448 20 42 15 07 20 04 0F 05 : B.. ...
>5450 13 20 0E 0F 14 20 10 0C :. ... ..
>5458 01 19 20 06 01 09 12 2C :.. ....,
>5460 08 09 13 20 04 05 06 05 :... ....
>5468 0E 03 05 20 17 09 0C 0C :... ....
>5470 20 02 05 20 01 13 20 20 : .. .. 
>5478 20 20 20 20 06 0F 0C 0C :     ....
>5480 0F 17 13 2D 3A 20 20 20 :...-:
>5488 59 0F 15 20 0D 15 13 14 :Y.. ....
>5490 20 0E 0F 14 20 03 0F 0C : ... ...
>5498 0C 09 04 05 20 17 09 14 :.... ...
>54A0 08 20 08 09 0D 20 0F 12 :. ... ..
>54A8 20 08 09 13 20 10 09 05 : ... ...
>54B0 03 05 13 20 14 08 12 0F :... ....
>54B8 15 07 08 0F 15 14 20 14 :...... .
>54C0 08 05 20 07 01 0D 05 2C :.. ....,
>54C8 01 13 20 19 0F 15 20 17 :.. ... .
>54D0 09 0C 0C 20 08 01 16 05 :... ....
>54D8 20 10 0F 09 0E 14 13 20 : ......
>54E0 01 04 04 05 04 20 14 0F :..... ..
>54E8 20 19 0F 15 12 20 13 03 : .... ..
>54F0 0F 12 05 2E 54 08 09 13 :....T...
>54F8 20 09 13 20 01 0E 0F 14 : .. ....
>5500 08 05 12 20 10 12 0F 02 :... ....
>5508 0C 05 0D 20 01 13 20 19 :... .. .
>5510 0F 15 12 20 13 03 0F 12 :... ....
>5518 05 20 09 13 20 19 0F 15 :. .. ...
>5520 12 20 15 0C 14 09 0D 01 :. ......
>5528 14 05 20 05 0E 05 0D 19 :.. .....
>5530 2C 20 20 20 20 20 20 20 :,
>5538 20 20 28 41 53 20 57 45 :  (AS WE
>5540 4C 4C 20 41 53 20 42 4C :LL AS BL
>5548 4F 4F 50 49 4E 47 20 42 :OOPING B
>5550 55 47 20 4F 46 20 43 4F :UG OF CO
>5558 55 52 53 45 21 21 29 2E :URSE!!).
>5560 07 0F 0F 04 20 0C 15 03 :.... ...
>5568 0B 2C 01 0E 04 20 0C 05 :.,... ..
>5570 14 13 20 08 0F 10 05 20 :.. .... 
>5578 14 08 01 14 20 19 0F 15 :.... ...
>5580 20 17 09 0C 0C 20 13 15 : .... ..
>5588 03 03 05 05 04 20 13 0F :..... ..
>5590 20 14 08 01 14 20 08 05 : .... ..
>5598 20 17 09 0C 0C 20 02 0C : .... ..
>55A0 0F 0F 10 20 0E 0F 20 0D :... .. .
>55A8 0F 12 05 2E 49 4E 53 54 :....INST
>55B0 52 55 43 54 49 4F 4E 53 :RUCTIONS
>55B8 2E 20 41 14 20 13 14 01 :. A. ...
>55C0 12 14 2C 06 09 12 13 14 :..,.....
>55C8 20 13 10 12 09 14 05 20 : ..... 
>55D0 09 13 02 0C 0F 0F 10 09 :........
>55D8 0E 07 20 02 15 07 2C 13 :.. ...,.
>55E0 05 03 0F 0E 04 20 13 10 :..... ..
>55E8 12 09 14 05 20 09 13 22 :.... .."
>55F0 19 0F 15 22 2E 4F 0E 05 :...".O..
>55F8 13 08 0F 14 20 0F 0E 0C :.... ...
```

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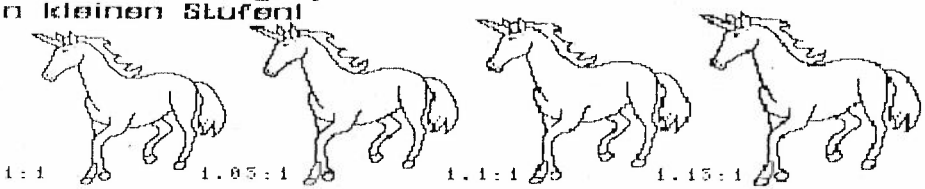
```
>5600 19 2C 03 01 0E 20 02 05 :..... ..
>5608 20 0D 01 04 05 20 01 14 : .... ..
>5610 20 01 20 14 09 0D 05 2E : . ..... .
>5618 54 08 05 12 05 20 09 13 :T.... .. ....
>5620 20 01 0E 20 09 0E 05 12 : .. .... ..
>5628 14 09 01 20 12 0F 15 14 :... .... ....
>5630 09 0E 05 20 13 0F 20 0D :... .. . .
>5638 0F 16 05 0D 05 0E 14 20 :........
>5640 09 13 20 20 04 05 0C 01 :.. .... ....
>5648 19 05 04 2C 22 53 48 4F :....,"SHO
>5650 54 22 13 10 12 09 14 05 :T".....
>5658 20 17 09 0C 0C 20 01 0C : .... .. ..
>5660 17 01 19 13 20 07 0F 20 :.... .. ..
>5668 09 0E 14 08 05 20 13 01 :..... .. ..
>5670 0D 05 20 04 09 12 05 03 :.. .....
>5678 14 09 0F 0E 20 01 13 20 :.... .. ....
>5680 22 59 4F 55 22 20 13 10 :"YOU" .. ..
>5688 12 09 14 05 2E 20 20 20 :.....
>5690 4E 0F 20 13 08 0F 14 13 :N. .....
>5698 20 03 01 0E 20 02 05 20 : ... .. ..
>56A0 06 09 12 05 04 20 17 0B :..... ..
>56A8 05 0E 22 59 4F 55 22 13 :.."YOU".
>56B0 10 12 09 14 05 20 09 13 :..... ..
>56B8 20 09 0E 20 03 0F 0E 14 : .. .... ....
>56C0 01 03 14 20 17 09 14 08 :... .... ...
>56C8 20 01 0E 19 20 0F 14 0B : ... ... ...
>56D0 05 12 2E 20 20 20 20 20 :...
>56D8 20 20 20 20 50 15 13 0B : P...
>56E0 20 0A 0F 19 13 14 09 03 : .....
>56E8 0B 20 15 10 2C 04 0F 17 :. ..,....
>56F0 0E 2C 0C 05 06 14 2C 0F :.,.....,.
>56F8 12 20 12 09 07 08 14 20 :. ..... .
```

```
>5700 20 20 06 0F 12 20 0D 0F :    ... ..
>5708 16 05 0D 05 0E 14 2E 20 : ........ .
>5710 20 50 12 05 13 13 20 06 : P..... .
>5718 09 12 05 20 02 15 14 14 :... .... ....
>5720 0F 0E 20 17 08 05 0E 20 :.. .... ...
>5728 0A 0F 19 13 14 09 03 0B :........
>5730 20 09 13 20 03 05 0E 14 : .. .... ....
>5738 12 01 0C 2E 20 20 54 08 :.....  T.
>5740 05 20 10 0C 01 19 05 12 :. .... ....
>5748 20 17 09 14 08 20 14 08 : .... .. ..
>5750 05 20 0C 0F 17 05 13 14 :. ..... ....
>5758 20 13 03 0F 12 05 20 17 : ..... .
>5760 09 0E 13 2E 41 14 20 05 :....A. .
>5768 0E 04 20 0F 06 20 07 01 :.. .. .. ..
>5770 0D 05 20 20 10 12 05 13 :... .... ....
>5778 13 20 22 59 22 20 14 0F : "Y" .. .
>5780 20 13 14 01 12 14 20 0F : ..... .
>5788 12 20 22 4E 22 20 14 0F :. "N" .. .
>5790 20 13 14 0F 10 2E 20 20 : ..... .
>5798 20 20 4E 4F 57 20 50 52 :  NOW PR
>57A0 45 53 53 20 41 4E 59 20 :ESS ANY
>57A8 4B 45 59 2E 20 20 20 20 :KEY.
>57B0 20 20 20 20 20 20 20 20 :
>57B8 20 20 20 20 20 20 20 20 :
```

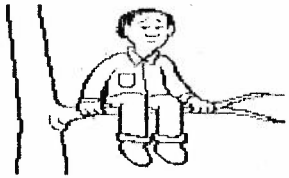
PAGE-SETTER

(c) by FV-Soft

Endlich gibt es für den Plus 4 ein brauchbares Programm, mit dem eine ganze Seite Text mit beliebigen Schriften und eingebundenen Grafiken erstellt werden kann. Im Gegensatz zu bisherigen Programmen ist jede Handlung sofort auf dem Grafikbildschirm sichtbar. Sogar einen Komplettüberblick über die Seite kann man sich jederzeit verschaffen. Neben vielen üblichen Grafikfunktionen ist auch eine Möglichkeit enthalten, die bisher kein anderes Programm für den kleinen Plus 4 aufweisen kann: Das Vergrößern und Verkleinern von Grafiken in kleinen Stufen!



- Textdirekteingabe mit beliebigen Zeichensätzen, wahlweise Blocksatz, Flattersatz oder Zentrieren - Beliebiges Einbinden von Grafik - frei definierbarer Rand und mehrspaltiger Satz - freies Umschreiben von Bildern	- Zeicheneditor mit vielen Funktionen - Pixelweises Zeichnen oder Zeichnen von Linien, Vierecken, Rahmen, Kreisen, Ellipsen, Vielecken - Vielseitige Blockfunktionen - Kopieren, löschen, spiegeln, drehen, verkleinern und vergrößern	- Lupe, über die ganze Seite beweglich - Überblick über die fertige Seite - Druck mit MPS 803 oder 6313 im Epson-Mode - 2-Floppy-Betrieb möglich - Directory-Funktion - Komprimierung der Grafiken



Das Programm besteht vollständig aus Maschinencode. Selbstverständlich gehört eine Bedienanleitung dazu, um alle Funktionen nutzen zu können. Auf der Diskette befinden sich auch mehrere Schriftarten und einige Demo-Grafiken.

In Vorbereitung: weitere Schriften, Tool zur Eigenerstellung von Schriftsätzen, Schnittstelle zu Create Page und Bottiselli.

CONT FROM
PAGE 4

will be available in February 1984. The Commodore 264 version will exploit the full range of 128 colors and will be available sometime in April 1984. Both versions will use either the Commodore joystick, or optionally, Commodore's new lightpen. Pricing information is not yet available.

'We are delighted to be working with Commodore Business Machines', says Daniel Remer, president of Island Graphics. 'Their distribution and marketing abilities will bring the Micro Illustrator to many of thousands of new users. The Commodore 264 version is going to be the best there is.'

Island Graphics is a design and development firm located on Bethel Islands in California. They specialize in mass market graphics packages for personal computers. Island Graphics has developed software for Atari, Chalkboard, and Koala Technologies, to name a few.

END.

Sent in by
Dave Brighton
Sheffield, W-Yorks

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