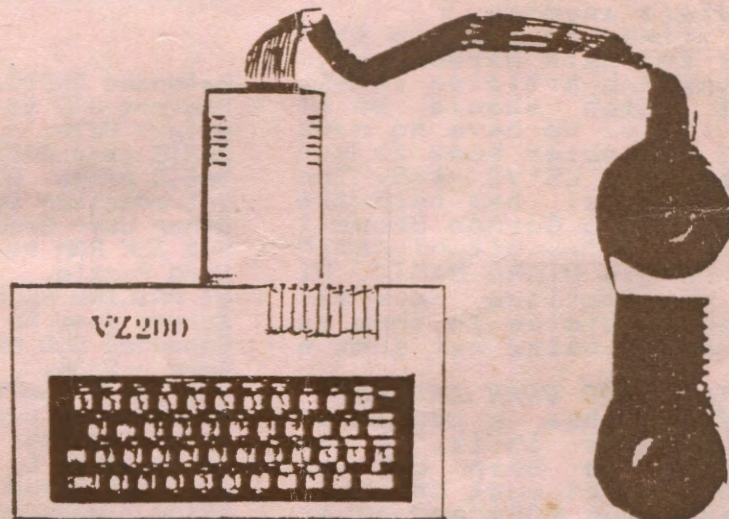# * LE'VZ 200/300 *

Owner's Operators Programmers

** THE SOUTH PACIFIC MAGAZINE FOR VZ COLOUR COMPUTERS **

AUGUST 1987.   #17 A$2.00.

200
LE'VZ
OOP
300

VZ200

* * * * * LE'VZ 200/300 OOP * * * * *

EDITORIAL

35 1003

Greetings friends.

There is always so much I want to say but never enough space to print it. Firstly I again thank all the folk who take the time to write a short note/letter and let me know what they think in regards to LE'VZ ,(especially the good remarks). Ha Ha. Truly though, I do welcome criticism, but as I always say, "no news is good news".

I notice that the editors of the oppossition newsletters/journals have the same trouble in getting folk to write or 'phone with their comments. The few reports that I have received indicate that LE'VZ is giving readers what they like to read.

I also thank Mark Harwood, Joe Leon, Gordon Browell, Scott Le Brun and Peter Hill for the co-operation that I enjoy from them. Each of our newsletters/magazines have an individual form and it is hoped that will continue. Ever since EA. and ETI. was published by the same company, they have that sameness about them. Also it is up to we VZ publishers to carry the torch for the VZ, because those other commercial magazines are becoming more interested in the bigger PC and business computers. They are not really interested in the small "hobby" computers anymore.

I would like to mention that Scott Le Brun and Mark Harwood have been printing M/L articles in VDU and VZ USER which should be of interest to many. We have no news about the M/L Assembler book as yet as I printed in LE'VZ #16. The H.V.V.Z.U.G. journal has hardware items at times and Gordon Browell has printed a fair bit of BASIC programming in his MICRO MAGIC. Of course all publications have all sorts of other articles in them as well and I am pointing out just a few.

KEEP UP THE GOOD WORK FELLARS.

This LE'VZ has a couple of more print changes in it, do you like them? It is born out of necessity that print must be small so that I can give OOPs and other readers as much information as possible in sixteen pages.

The workshop group now has a name. It is *Brisbane V Z Users Workshop, BVZUG* ,see page fifteen for a report.
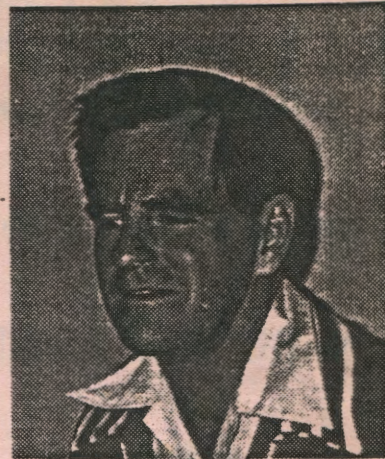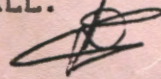
Jerimie Lee is organising a competition which is about programming in BASIC. For more details please watch this space, or at least I hope to print about it somewhere in LE'VZ #18.

If anyone would like information about the BRISBANE EXPO 1988, write direct to the EXPO organisation for lots of pamplets etc, their address being:-
P.O. Box 1988, Southbank, QLD. 4101. Australia.

GOD BLESS TO ALL.

JOHN.

CONTENTS.

***** EXTENDED BASIC *****

BY JOHN D'ALTON.

This continues my short articles explaining the use of another EXTENDED BASIC statement, STRING$.

The first number within the brackets donates the amount or number of characters to print. The second number or character/s is the character to be printed. In the first example I have printed twenty five letter "B"s because the B in enclosed in quotation marks.

```
100 REM DEMO OF EXTENDED BASIC "STRING$"
120 CLEAR100:CLS
130 LPRINTSTRING$(25,"B"):END
```

BBBBBBBBBBBBBBBBBBBBBBBBB

In the second example the letter "B" is represented by the ASCII value of "B" which is 66.

```
100 REM DEMO OF EXTENDED BASIC "STRING$"
120 CLEAR100:CLS
130 LPRINTSTRING$(25,66):END
```

BBBBBBBBBBBBBBBBBBBBBBBBB

The third example shows how the first number which donates how many characters to print is represented by a numeric variable. X is given the value of 5.

```
100 REM DEMO OF EXTENDED BASIC "STRING$"
120 CLEAR100:CLS:X=5
130 LPRINTSTRING$(X,66):END
```

BBBBB

The character to be printed can also be represented by a STRING VARIABLE. This isshown in the fourth example where a letter is INPUTed as A$. In this case letter "Z".

```
100 REM DEMO OF EXTENDED BASIC "STRING$"
120 CLEAR100:CLS:INPUTA$
130 LPRINTSTRING$(15,A$):END
```

ZZZZZZZZZZZZZZZ

The same results can be achieved by using a FOR NEXT loop, but as you can see STRING$ is an easier, shorter and faster way.

(VZ).

DEC TO HEX.

Sent in by Mr.H.Huggins of MITCHAM VIC.

PROGRAM TO CONVERT DEC.NUMBERS TO HEX.

```
1 !A-B
POKE31469,155
8 INPUT'DEC #';B1
10 B2=16
15 A2=B1/B2
20 A1=A2-INT(A2):IFA1<.0625THEN22ELSE24
22 PRINT0:GOTO25
24 PRINTA1/.0625
25 B1=INT(A2)
30 IFB1<16THENPRINTB1ELSEGOTO15
```

```
THIS IS A PRINTOUT
INPUT # WAS 31598
NUMBERS OVER 9 TO BE CHANGED TO LETTERS
READ THE HEX NUMBER FROM BOTTOM UP
14
6
11
7
WITHOUT THE COMPUTER USE THIS
DIVIDE THE WHOLE NUMBERS BY 16
THE REMAINDERS ARE THE HEX NUMBER
READ FROM THE BOTTOM UP
16] 31598
16 ] 1974 + 14. =E
16 ]  123 + 6. =6
16 ]    7 + 11. =B
     . + 7. =7
SO 31598D = 7B6EH
```

AUSTRALIAN ELECTRONICS MONTHLY

VZ ARTICLES BY LARRY TAYLOR.

Larry Taylor has had an article printed in two AEMs, being May and June 1987, part one and two. They are called ▉▉▉▉▉▉▉▉▉▉▉▉▉▉▉▉▉

Very interesting reading. His article shows a little of how he wrote *VZ PRINTER PATCH* which we sell. I hope to print a few High Resolution Screen pictures that can be achieved by using different values which the user sets. The TAB,X function allows the user to LLIST a programme at X amount of columns across the paper, very handy for remarks.

(VZ)

--- HELP - HELP - HELP ---

Help.   Mr.Roberts is seeking a Z80 M/L book by Rodny Zacks and/or 8080 and Z80 Assembly Language Programming by Kathe Spraklen.

He would also pay for photocopies of these, but remember that would be breaching the (C) Copyright, which of course we do not condone.

Mr.Murray Roberts, 7 Elsa Court, ELTHAM. VIC. 3095. 'Phone 439 2106.

Help.   Can anyone help Mr.John Benfer in regards to GENEALOGY. Any information so that he can set up/write a programme. He has (z)Disc System so the programme/s can be large.

Mr.John Benfer, 35 Wilfred t., LOTA. QLD. 4179. 'Phone (07) 396 4079.

RACES GAME.

This short programme called RACES, is one of the many on our Public Domain Disc, DPD2 as listed in the software section. Its well worth typing in. Have fun.

```
1 CLEAR100
2 CLS:POKE30744,1
3 PRINT@200,"
4 PRINT@232,"
5 PRINT@264,"
6 PRINT@296,"SELECT YOUR HORSE.":PRINT@328,"CHOOSE  ,  ,  ,  OR  ."
7 FORT=1TO4000:NEXT:CLS
8 P=28672
10 PRINT@0,"  ";:PRINT@32,"  ";:PRINT@64,"  ";:PRINT@96,"  "
15 PRINT@128,"  ";:PRINT@160,"  ";:PRINT@192,"  ";
16 PRINT@224,"  ";:PRINT@256,"  "
20 PRINT@30,"  ";:PRINT@62,"  ";:PRINT@94,"  ";:PRINT@126,"  "
22 PRINT@158,"  ";:PRINT@190,"  ";:PRINT@222,"  ";:PRINT@254,"  ";
23 PRINT@286,"  ";
25 FORM=288TO318:POKEP+M,220:NEXT
40 FORV=33TO61:POKEP+V,45:NEXT:FORW=97TO125:POKEP+W,45:NEXT
42 FORQ=161TO189:POKEP+Q,45:NEXT:FORK=225TO253:POKEP+K,45:NEXT
43 PRINT@320,"                                    ":FORT=1TO1500:NEXT
44 PRINT@320,"
45 A=1:C=65:E=129:G=193:H=257
50 Z=29
55 POKEP+A,32:POKEP+C,32:POKEP+E,32:POKEP+G,32:POKEP+H,32
60 X=INT(RND(5))
65 IFX=1THENA=A+1
70 IFX=2THENC=C+1
75 IFX=3THENE=E+1
80 IFX=4THENG=G+1
81 IFX=5THENH=H+1
82 FORN=1TO10
83 NEXTN
85 PRINT@A,"  ":PRINT@C,"  "
90 PRINT@E,"  ":PRINT@G,"  "
91 PRINT@H,"  "
95 IFA=ZORC=Z+64ORE=Z+128ORG=Z+192ORH=Z+256THEN100ELSE150
100 IFA=ZTHENGOSUB200ELSE105
102 PRINT1:GOSUB260
104 GOTO43
105 IFC=Z+64THENGOSUB200ELSE110
107 PRINT2:GOSUB260
109 GOTO43
110 IFE=Z+128THENGOSUB200ELSE115
112 PRINT3:GOSUB260
114 GOTO43
115 IFG=Z+192THENGOSUB200ELSE120
117 PRINT4:GOSUB260
119 GOTO43
120 IFH=Z+256THENGOSUB200
122 PRINT5:GOSUB260
124 GOTO43
150 GOTO55
200 PRINT@320,"                  ";
205 RETURN
260 PRINT@384,"IF YOU WISH TO SEE ANOTHER"
265 PRINT@416,"RACE, PRESS      . IF YOU DON'T"
270 PRINT@448,"THEN PRESS ANY KEY"
275 ANS=INKEY$
280 ANS=INKEY$:IFAN$=""THEN280
285 IFAN$="R"THEN290ELSECLS:END
290 FORL=1TO29:POKEP+L,32:NEXT
295 FORL=65TO93:POKEP+L,32:NEXT
300 FORL=129TO157:POKEP+L,32:NEXT
310 FORL=193TO221:POKEP+L,32:NEXT
320 FORL=257TO285:POKEP+L,32:NEXT
325 FORL=320TO334:POKEP+L,32:NEXT
330 FORL=352TO384:POKEP+L,32:NEXT
340 FORL=384TO416:POKEP+L,32:NEXT
350 FORL=416TO448:POKEP+L,32:NEXT
360 FORL=448TO480:POKEP+L,32:NEXT
370 RETURN
```

In LE'VZ #16 on page 7 are two short BASIC little programmes from DPD2. Somehow they are are of the same programme, SPIRAL. The second one should be for LOOPS. Well below is LOOPS and FLOWER.

```
5 REM LOOPS
10 CLS
15 MODE(1)
20 FORA=0TO30STEP.02
30 R=6*COS(2*A/3)
40 SET(64+7*R*COS(A),33+5*R*SIN(A))
50 NEXTA
60 GOTO60
```

```
5 REM FLOWER
10 CLS
15 MODE(1)
20 FORA=0TO30STEP.02
30 R=6*COS(3*A/2)
40 SET(64+7*R*COS(A),33+5*R*SIN(A))
50 NEXTA
60 GOTO60
```

INTRODUCTION TO PROGRAMMING   Part 2.
by Bob Kitch.

This concludes this article. It includes the finish of part i from LE'VZ #16.

The spectrum of tasks involved in programming is very broad, so little wonder that beginners have trouble grasping the essentials, or that many programs are "badly" written. The task involves taking an idea or concept and translating that into a symbolic (program statement) form of representation. An intermediate stage in this translation often involves modelling the phenomenon being programmed. This psychologically involves moving from concrete concepts to various levels of abstraction - again a very difficult thing for, particularly young, minds to master.

The transition from an idea to a program can seldom be achieved in one leap - more often a number of intermediate steps are required. Liken it to writing an essay where drafts and notes are used before the final prose is produced. Fortunately a number of useful tools have been developed to assist in producing a good program.

In my view, one of the greatest pitfalls of the home computer boom is that these intermediate steps are not understood by Users so that, at least, bad programs and, at worst, disillusioned programmers result. Many of these people may find their way into the computer industry of the future. There is ALWAYS more personal satisfaction in achieving a "good" job even if it is only a games program for the kids. It is also more fun, (the essence of home micros)   as there is less hassle in getting a program to run, and more time for more programs.

In the microcomputer environment where there are always hardware limitations, it means that it is very difficult to completely seperate hardware and software aspects of the programming task. The programmer may have to get "close to the hardware" - usually due to hardware/memory limitations or restricted I/O capabilities. Don't shy away from hardware by saying "but I am only interested in writing programs" as the two are somewhat inseperable.

Next month we will look at the various stages in the programming task, or how to approach a programming exercise. (see, no mention of BASIC code in this article!)

Finally, I would like to offer to Users that your programming queries will be answered if you write to me - with a SAE. please. In this manner you should get what you want and I will obtain a feel for the type of problems Users are experiencing.

As mentioned in Part 1 of this series, the programming task is a large and complex feat of organization and requires a wide range of skills. It is possible, and best, to break the task down into six segments - each of which must be thought about, planned and then carried out to ensure the successful completion of a software project. Even a small program requires that a cursory consideration of the six segments be made - although some of them may be quickly passed over as trivial. But it is certain that larger programs (more than 200 lines) require careful planning for success.

Before describing the six steps, it is worth thinking about "What makes a GOOD program?"

A program may be judged from a number of different standpoints; each is not necessarily mutually exclusive and sometimes some conflicts require that a trade-off be made.

The first criteria is that a program should be EFFICIENT. Efficiency can be considered from a number of varying view points. For example, optimization of the run-time can be considered as efficient. Also, reduction in storage requirements for both program code and variables can be considered as efficient programming. Furthermore, and particularly if one is developing software commercially, then efficiency can be measured in terms of the actual time required to get an applications program running and the ease of maintenance of that code. The use of appropriate data types and data structures can greatly improve the efficiency of a program. The selection of a suitable algorithm can also assist. Finally, ease of debugging so that the program can be updated or modified may be considered desirable.

The second criteria is GENERALITY and it is here perhaps that so many programs "score" so poorly. Rather than a program being written to solve a particular phase, it should be broadly written to handle a wide range of problems. The use of subroutines and functions developed and debugged previously can enormously improve programming productivity. Often a simple sustitution of a variable for a constant in a program can broaden the the applicability of the program significantly.

The final criteria is ELEGANCE, which is a little harder to both define and achieve. An elegant program is one that is simple and ingenious, and possibly uses an algorithm or data structure that may not be immediately obvious to the application. The so-called "programmer's tricks" are often elegant solutions to a programming problem; but beware, some are attempts by programmers to conceal their programming stategy.

These then, are general guidelines to try and attain in your programming and by which to judge a particular programming effort as good, mediocre or poor. Notice that they are not language specific comments and are equally applicable to any programming language or exercise.

To return to the six steps in the programming task - I will briefly discuss each in turn and ask that you consider each one when embarking upon your next programming exercise. Also as one proceeds through the steps, it is often necessary to recycle back through some of the preceeding steps, to iteratively improve the exercise and your understanding of ideas.

1. PROJECT SELECTION. This may appear trivial, but we all have too many ideas for programs and rarely know which one to tackle next. Also be honest with yourself; some of the projects are probably too ambitious for your existing skills and an attempt upon these will possibly result in frustration and perhaps failure. Choose an exercise that is challenging and worthwhile. Try not to "reinvent the wheel", try to be aware through reading magazines or discussing with other Users what programs are already available. Modifying an existing program to suit your specifications is sometimes quicker - it also allows you to study how other programmers tackle problems. O.K., so now you have an idea or problem that you wish to tackle and solve.

2. PROJECT FEASIBILITY. Again be honest. Do you have the hardware, software and know-how to achieve the result? Its is not really much use trying to write large business-oriented data base programs for an 8K taped-based VZ! Check that the task is reasonable.

3. PROJECT DEFINITION. This is where the idea starts to get translated into a reality. It is also the phase where generality can be written in. It is easiest to start by thinking about the input to the program. Is it keyboard oriented, or is it to come from a programmable I/O port? Perhaps the program reads only DATA statements to configure itself or maybe the program must check if a printer is connected to the sytem? Start defining what the input will look like. Assign variable names with meaningful mnemonic names at this stage also.

Next, define the output expected from the program. Is it to write to tape and in what format? Perhaps it is to be screen oriented - can sound be used - or perhaps voice synthesis to tell the operator what is going on? Plan very carefully and fully the layout of the expected output as this is how Users will initially perceive the quality of the program.

After defining the I/O for the program we should now have a feel for the anticipated range of parameters that the program is meant to accept and also handle. This brings in the very important concept of defining the BOUNDS within which the program must function correctly. Following on from this, is range checking of all input parameters so that the program cannot go beyond the range that it was designed for and give unexpected results. A number of warning messages must be built into the program along with error capture and recovery routines. It is failure to define the operating bounds of a program that causes most crashes or rogue behaviour. Even the definition of integer variables at this stage can assist by improving program execution time and reducing storage requirements.

The definition stage should be roughed out on pieces of paper kept for later reference. Perhaps better, is to use an old exercise book. Another benefit of this is that over a period of months your progress can be measured and your growth of programming ideas recorded. Another benefit (although I hardly dare mention it!) is that if, after the coding stage, a system crash occurs and you didn't SAVE the program, then all is not lost - at least an outline of the program remains.

4. DESIGN PHASE. Having sorted out I/O and operating bounds, the actual selection of an algorithm to achieve the result is commenced. By this time some idea of the number of variables required and their type should have begun to gel. This is also the stage where your basic honesty in stages 1 and 2 may catch up with you! Data structure organisation and algorithm selection are really experience-related skills - hence the suggestion to read and/or modify existing programs. But do not despair - practice makes perfect.

5. IMPLEMENTATION PHASE. To date very little actual coding should have been done; in fact the computer need not even have been turned on! Some people may be surprised at how late in the task the computer actually enters into the picture. An awful lot of planning and organizing can be done off the computer and on the "backs of old envelopes".

It is also at this stage that the choice of programming language should be made. Is the program time dependant? If it is, then it should probably be written is Assembler. If the actual timing is not so critical then writing in BASIC with its diagnostics and helpful features (so typical of a high level language) deem it sensible. Experienced programmers will probably use a bit of each in practice. A very sensible compromise is to develope the program in interpreted BASIC and once finalized and debugged, compile the BASIC code to speed up execution.

6. EVALUATION PHASE. This is the moment of truth! Does the program fulfil all the criteria set out in the definition phase. If so, then you have succesfully achieved your task. Is the output as you expected it? Are the results correct? It is a good idea to have a standard set of data to exercise the program so that it can be quickly verified after a program alteration. Ensure that all logical paths through the program have been exercised so that no spurious errors of logic remain undetected. Finally, deliberately try values that are out of the intended bounds of the program to ensure that you have trapped them and that the program recovers from this type of misuse above and beyond its' intended design range.   (VZ).

MR DAVID MYERS
188 LANGDONS RD
CHRIST CHURCH 528-711.

+ + MEMORY EXPANSION + +

FITTING A 32K STATIC RAM TO A VZ200.

By Mr.John Mason.

This hardware project is not a very difficult modification for folk who are reasonably competent with a soldering iron, but please be very careful not to damage your VZ. The RAM I/C is a 32K devise PD43256C.

Undo the VZ base screws and remove the top section. Spring the keyboard loose from the top section. Next remove the printed circuit board (PCB) from the case. Carefully unsolder the metal shield covering the 6K RAM which will be seen mounted above the PCB. Do not remove the PCB. It consists of three 6116 static RAMs and a 74LS138. The 6116 nearest to the LS138 is RAM #1. This is the RAM selected from the main board by 78XX. The other two 6116's will be permanently de-selected by pin 14 of the LS138 which will now be modified to chip select (CS) the new 32K RAM, thus giving a 34K memory.

TO MODIFY THE 74LS138.

Cut the printed circuit close to pin 1 and pin 2. Pin 3 is wired through a loop of wire on the underside of the board to a point just above. Cut through the printed circuit close to this point. Check with a continuity meter that pins 1, 2 and 3 are not connected or shorted to anything on the board.

Join pins 1, 2 and 3 together and connect to earth. Cut the printed circuit at pin 5 so as to disconnect pin 5. Join pin 5 to pin 4. Next you will notice that pin 15 and pin 14 are jointed to two points on the edge of the board by tinned wire on the underside. These are the CS line for RAM 2 and 3. Look underneath and slip a thin screwdriver undr the tinned wire that goes to pin 15. Touch the soldering iron onto the point, and gently disconnect the wire that goes to pin 15. It can be removed with a pair of long nosed pliers. This leaves pin 15 free to select the new 32K RAM.

Join the two CS lines of RAM 2 and 3 together, which will connect them both to pin 14. As pin 14 is permanently on, this will de-select RAM 2 and 3. Pin 15 is now used to select the 32K RAM which will occupy the address from 8000 HEX to FFFF HEX.

PARTS LIST.

1 PD 43256c 32K RAM.

1 low profile socket.

1 piece of Vero board, standard IC. pitch
    (34 metal strips wide by 13 holes high).

1 .1 disc ceramic capacitor.

Some fine hook-up wire and 1 thin solder lug.

Mount the socket in the centre of the Vero board. This should leave three unused stips at each end, plus enough either side to solder wires onto. The IC. board will be mounted with IC. underneath so that one edge will be sitting on top of the 6K RAM board over the etched serial number.

It will be sitting above and partly covering the Z80 MPU I.. Remove the screw from the stand-off insullator, slip on the solderlug and screwdown.

This should put the solderlug over the three unused strips on the IC. board. Solder a wire from the three strips on the other end of the board to earth plate which is the part with the etched number on. Pin 28 VCC should be down in the corner nearest the solderlug. DO NOT insert the IC. at this stage.

Now start to wire the pins, looping round to the end of the 6K board. All the required signals can be found on the two rows of pins that connect to the main PCB. Trace with a m/meter using the pins of a 6116. E0., pin 1 of 6116 is A7. Find A7 pin on the connector end and wire to A7 on the 32K RAM socket, etc. Carry on until all the pins are connected. Remember, pin 15 of the LS 138 is connected to CS of the 32K RAM. When all the wiring is finished, connect the .1 capacitor between pin 28 and earth.

CHECK YOUR WIRING THOROUGHLY.

Loosen the solderlug and bend the board up verticaly..Carefuly insert the 32K RAM, pressing it home fully. Now carefully fold the board to a horizontal position. If the RAM is not fully inserted, it will not lie flat, because it hits on the Z80 IC. If satisfied hold your breath and switch the VZ on. The usual message should appear on the VDU. Type in the usual memory available programme thus:-

PRINTPEEK(30897)+256*PEEK(30898)<RETURN>

The answer should be:- 65535

Solder a piece of tinned wire from the end of the strips to the main board and replace the metal cover. Re-assemble your VZ200, give yourself a pat on your back because you have not only saved many dollars but the VZs main port is free to accept other hardware. Of course you will now be able to run the BIG AND USEFUL software that is available.

Mr.J MASON, 59 LANCASTER RD., BIRKDALE.
AUCKLAND.   NEW ZEALAND.

VZ COMPUTER COMMERCIAL SOFTWARE CATALOGUE.

If you wish to find out what programs have been written for the VZ200/300 computer since its introduction to Australia, send a S.A.E. 23CM x 10CM to the following.

Mr.Eddie Tomes,   3 Kilkeny St.,
    CAPALABA.   QLD. 4157.

This catalogue covers all programs that have been advertised in Computer, Electronic and associated magazines as well as Distributors catalogues. Any assistance to update this list would be appreciated.

NO MODEM #

* WORD PUZZLE. *

Here is a little puzzle to give you a rest from programming. There are sixteen words hidden amongst the letters. The words are of different length, mostly computer related and are printed in any direction. That is horizontal, vertical, diagonal and perhaps zig-zag fashion.

The answer print in on page

Have fun.

WORD SQUARE PUZZLE #1.

LASER 34K INTERNAL PROGRAM RAM --SCHEMATIC

PIN 14 PERMANENTLY ON.

```
T A E R Z M T M Y A Z S L M A
P R F S E N A Z P H D A W E B
L N A D O D L P T R U I X O A
O Q O M I F M K P A I L S X U
T M U O B X T K C L P N L C D
T B S E V Y R W F I E E T O E
E C W E E O T G A V T A L E S
R O O C M N V E B R Z S X V R
K K P M T O S O S G E Z Y G I
M B T Z P G E L O M E V S O A
Y D Q Y Y U N G A A C T E K J
H I I Q L P T T I N O X P I G
G L X J U W R E X Z D F C D T
P A F B J N P N R L Z E N H P
H F U W G I R L Z S R B G Y F
```
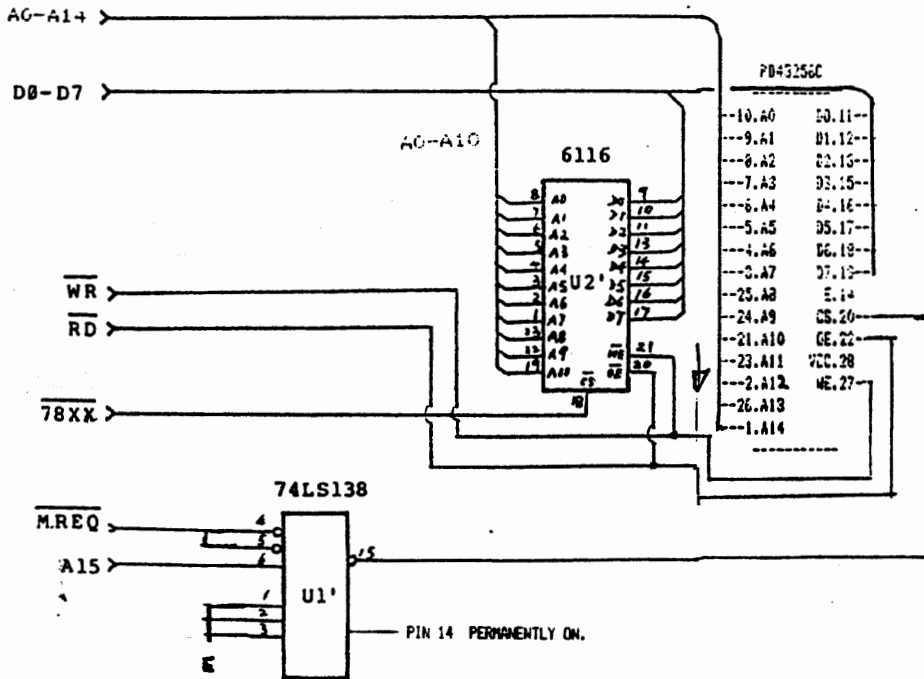
* DSE. MAILING LIST MOD. *

This little modification will enable you to save/load data to/from disc. It is reproduced here by courtesy of Dick Smit Electronics. Thanks to DSE.

VZ-300 MAILING LIST TAPE TO DISK FILE CONVERSIONS

Below are the changes to be done to the B.A.S.I.C. program to allow files to be saved on disk instead of tape for (X-7259) Mailing List program.

Once you have loaded Mailing List BREAK the program and type in the lines below pressing (RETURN) after each line.

```
1040  PRINT@162,"2. READ DATA FROM DISK";
1080  PRINT@290,"6. WRITE DATA TO DISK ";
5020  PRINT@270,"[WRITE DATA TO DISK]"
5030
5040
5050
5060
5070
5080
5110
5120
5205  ERA"MAILDATA"
5210  OPEN "MAILDATA",1:PR#"MAILDATA",DT
5220  FOR N=1 TO DT
5230  PR#"MAILDATA",D$(N)
5240  NEXT:CLOSE"MAILDATA"
6020  PRINT@270,"[ READ DATA FROM DISK ]";
6030
6040
6050
6060
6070
6080
6100  OPEN "MAILDATA",0:IN#"MAILDATA",DT:IF DT=0THEN6135
6110  FOR N=1 TO DT
6120  IN#"MAILDATA",D$(N)
6135  CLOSE"MAILDATA"
6140  NEXT
7030  PRINT@199,"[FUNCTION COMPLETE]";
7050  SOUND 30,2:RETURN

Now SAVE"MAILLIST" to disk
Type NEW
RUN below program .
10  OPEN"MAILDATA",1
20  PR#"MAILDATA",0
30  CLOSE"MAILDATA"
```

The above program has prepared the disk with the MAILLIST program to save and read files.
The above program will never be used again.

Now you have finished just RUN"MAILLIST" and the instructions are as per old Mailing List program. The only difference is that it saves and loads files a lot faster.

SCREEN DUMP FOR P/PLOTTER.

By Andrew Willows.

This little programme allows a printer/plotter (PP40-TP40)? to print a
High Resolution screen picture.

```
1 REM *****************************
2 REM ** MODE(1) SCREEN DUMP **
3 REM ** FOR VZ200/300 WITH  **
4 REM **    PRINTER/PLOTTER   **
5 REM **   BY ANDREW WILLOWS  **
6 REM *****************************
10000 FORI=1TO4:LPRINTCHR$(10):NEXT:Y=0
10010 LPRINTCHR$(18):LPRINT"L0"
10020 LPRINT"A":LPRINTCHR$(18):C=6
10030 FORX=0TO127
10040 A=POINT(X,Y)
10050 IFA=1,C=2:'  GREEN
10060 IFA=2,10140' YELLOW
10070 IFA=3,C=1'  BLUE
10080 IFA=4,C=3'  RED
10090 LPRINT"C";C
10100 LPRINT"J3,0,0,-4,-3,0,0,4":LPRINT"R3,0"
10110 NEXT
10120 Y=Y+1:IFY=64,LPRINT"A":END
10130 LPRINT"R-384,-4":GOTO10030
10140 LPRINT"R3,0":GOTO10110
```
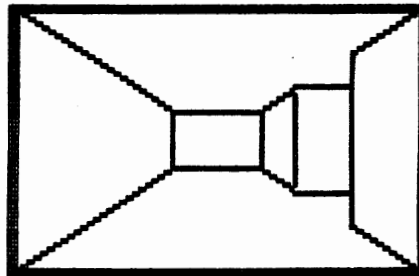
This program allows people who own a
PRINTER/PLOTTER to be able to get a
hard copy of the mode(1) screen.
This program takes a while to make
a copy but it is well worth waiting
for as it is in colour which has
advantages over a dot matrix printer.
To make a copy of a screen merge
this program to the end of the one
with the screen and when the screen
is complete enter a line in your
program to say 'goto 10000'
all colours are printed in their
wright corrosponding colour except
yellow which is left as a blank space.

GREEN-GREEN
YELLOW-BLANK SPACE
BLUE-BLUE
RED-RED

SOON SOON SOON

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1 SPACE

ENHANCED CLS.

BY Larry Taylor.

This is the short M/L routine as
mentioned in Larry's article in
LE'VZ #16.

```
0001 ;############################
0002 ;# ENHANCED CLS COMMAND #
0003 ;# BY LARRY TAYLOR 1986 #
0004 ;############################
0005 ; ORIGIN = 7B00H
0006 ;THIS SECTION RELOCATES
0007 ;THE PROGRAM TO THE TOP
0008 ;OF AVAILABLE MEMORY.
0009 ;
0010 VCTR EQU  7A28H      ;SET VCTR AS 7A28H
0011      LD   SP,7700H    ;LOAD STACK POINTER
0012      LD   HL,(7BB1H)  ;GET THE TOP OF MEMORY
0013      LD   BC,ENDP-NVCT ;GET LENGTH OF PROGRAM
0014      PUSH BC          ;SAVE PROGRAM LENGTH
0015      XOR  A           ;RESET ALL FLAGS
0016      SBC  HL,BC       ;TAKE LENGTH FROM TOP OF MEMORY
0017      LD   (7BB1H),HL  ;LOAD NEW TOP OF MEMORY
0018      PUSH HL          ;SAVE NEW TOP OF MEMORY
0019      XOR  A           ;RESET ALL FLAGS
0020      LD   BC,33H      ;RESERVE 50 BYTES STRING SPACE
0021      SBC  HL,BC       ;TAKE SPACE FROM TOP OF MEMORY
0022      LD   (7BA0H),HL  ;LOAD START OF STRING SPACE
0023      POP  DE          ;RETRIEVE TOP OF MEMORY
0024      INC  DE          ;INCREASE BY ONE
0025      LD   HL,(7B04H)  ;GET CURRENT RST10H VECTOR
0026      LD   (VCTR),HL   ;STORE IT IN 7A28H
0027      LD   (7B04H),DE  ;LOAD NEW VECTOR
0028      LD   HL,NVCT     ;GET START OF PROGRAM TO MOVE
0029      POP  BC          ;RETRIEVE PROGRAM LENGTH
0030      LDIR             ;MOVE TO NEW LOCATION
0031      CALL 1B4DH       ;DO A NEW
0032      JP   1A19H       ;JUMP TO READY MESSAGE
```

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    As we have not released any new software for this LE'VZ, I will only print
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please refer to previous LE'VZs as all software is initialy given a brief
description as NEW SOFTWARE. The alternative is to send for our catalogue,
VLISTZ Make sure you send a S.A.S.Envelope, 230MM x 100MM.

    I would like to mention that a BASIC COMPILER and some other very
interesting software is available by sending a S.A.S.E. to:-
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'Phone (069) 621 678.

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D/TU2	EDITOR/ASSEMBLER	$ 20.00. VZ3-VZ4.	T/DG38	WORDSQUARES.	$ 10.00. VZ2-VZ4.
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D/TE5	COORDINATES	$ 10.00. VZ2-VZ4.	DU22	DISK COPY.	$ 10.00. VZ1-VZ4.
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D/TE8	BLOCK PUZZLER	$ 10.00. VZ1-VZ4.		* NEW SOFTWARE *	
TE20	PLUS and MINUS	$ 10.00. VZ1-VZ4.			
TE24	MATHS	$ 15.00. VZ3-VZ4.	D/TG44	MONOPOLY.	$ 17.00. VZ3-VZ4.
TE25	QUEENSLAND	$ 10.00. VZ1-VZ4.	D/TG45	MONOPOLY.	$ 19.50. VZ4.
TE27	EUROPEAN CAPITALS	$ 10.00. VZ1-VZ4.	D/TG50	ESCAPE RIVER.	$ 15.00. VZ3-VZ4.
TE30	CAMPING	$ 10.00. VZ1-VZ4.	D/DB46	QUICKWRITE.	$ 40.00. VZ3-VZ4.
D/TG2	MANSION and NOVA	Deleted.	DU47	DISKOPS1.	$ 10.00. VZ3.
D/TG3	VZ MONOPOLY.	Deleted.	DU47A	DISKOPS2.	$ 10.00. VZ4.
TU12	SEARCHTAPE	Deleted.	D/TG42	AIRTRAFFIC CONTROLLER.	$20.00. VZ3-VZ4.
D/TG13	SCOTLAND YARD	$ 12.50. VZ3-VZ4.	D/TG43	LAARJET.	$ 20.00. VZ3-VZ4.
DB4	LE'VZ D'BASE	$ 98.00. VZ3-VZ4.	DU49	VZ-EPSON PRINT/PATCH.	$ 15.00. VZ1-VZ4.
TB15	DATABASE-VZ	$ 25.00. VZ3-VZ4.	D/TG54	GOLF.	$ 15.00. VZ3-VZ4.
TG35	HAUNTED MANSION	$ 12.50. VZ3-VZ4.	DU1	CONVERT2.	$ nil VZ3-VZ4.
TU6	VZ EXTENDED BASIC	$ 20.00. VZ1-VZ4.		See DB46 QUICKWRITE.	
TU7	PROTECT	Deleted.	D/TG53	GALACTIC EMPIRES.	$ 15.00 VZ3-VZ4.
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This new version finds VZ memory size itself			D/TG52	SOLO BATTLESHIPS.	$ 15.00. VZ2-VZ4.
TU10	EXTENDED BASIC	$ 12.50. VZ3-VZ4.			
TU11	ARRAY/RESTORE	$ 14.95. VZ3-VZ4.			

You must have TU10 to use TU11.
D/TU12	FILESEARCH	Deleted.
DE1-8	EDUDISK	$ 50.00. VZ3-VZ4.
T/DE9	MEATPIES V2.	$ 15.00. VZ3-VZ4.
TU18	LOAD XX80 FILES.	$ 20.00. VZ1-VZ4.

This new version finds VZ memory size itself.
T/DG36	BLACKJACK.	$ 20.00. VZ3-VZ4.
T/DG37	POKER MACHINE.	$ 20.00. VZ3-VZ4.

<<<<< PRINTERS. >>>>>

I did a count of the various types of printer and
printer/plotters folk are using.
    This is for past and present OOPs since July
1984.
PP40   22.   TP40   6.
Brother 600 2.   GP100   15.

All these are one each.
CPA 80, M1009, MX 80, BX 80, STAR NX-10, GP80
TRS DMP 105, CPB 80P, TRS80 VII, GP200X
STR GEM 10, DP 515 STR, SEN P1090, CITIZEN 120D,
CP 80, BMC 100.
There would be many more of course, but it gives
the reader an idea of the wide range of units
used. All (?) these printers should be suitable
for use with most other computers when and if you
may move onto another computer. Tut tut.
(VZ)

FRONT COVER COMPETITION.

    I am sorry that there were very few
entries for LE'VZ front cover. I thank
the folk who did take the time to make
up a design but none were what I was
looking for.

                    (VZ)

"Doctor, Doctor! I feel like a
bar of soap!"

    "That's life, boy ..."

Doctor, Doctor! If I take these
green pills will I get better?"

    "Well, nobody I've given them to
has ever come back."

"Have you got holes in your
socks?"

    Certainly not."

    "Then how do you get your feet
into them?"

PRINTER RIBBON RE-INKING.

To help printer users to save a
little money, some ribbons can be
re-inked. I used to re-ink our
GP100 ribbons by pulling apart the
end that houses the foam plastic
inker. I used ordinary rubber
stamp pad ink. This extended the
life of the ribbon until it
stretched to much.

This firm will re-ink most other
types of ribbons.

JANE'S COMPUTER SUPPLIES,
48 CRIBB ST,. MILTON.
QLD. 4064. AUSTRALIA.

LE'VZ FORMATS.

To help me time-wise to make LE'VZ a better magazine, and yourself to get the most out of it, please read this page.

ALL PRICES are in Australian Dollars.

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NEW MEMBERS must start by sending $4.00 as I do not charge a yearly subscription. This makes it worth while entering your name, address and other data into our D'BASE. You then receive the current issue if it is in a certain time period between the main send LE'VZ runs. If that is close to the next issue, you will recieve that and not the "old" current issue. New Members can send more than $4.00, as long as it is in multiples of $2.00.
Present OOPs have their $ credit printed at the top of their name and address label if sent in the main run. If your credit is less than $2.00., then a little reminder slip is included with the LE'VZ sent, stating that this is your last issue. Some folk have various money amounts left over from other software or hardware purchases put into their LE'VZ credit, and so odd $ amounts do occur.

BACK ISSUES are from #8 to the current issue. The price is $3.00 each. This includes surface/air postage within Australia and Air Mail to New Zealand. If you require more than two copies at one time, extra money must be sent to cover postage.
We usually have most Back Issues in stock. We send what we have and back order the others for you if required. If they are not sent within a couple of months, or with the next Current issue, please remind us.

GENERAL LIST refers to OOPs who want their name, address and data made available to other OOPs when asked for. You may like to contact OOPs in your state, or OOPs with VZ200s. Not all OOPs want their name and information made public, so if that applies to you, you must answer N (no). IF YOU DO NOT WANT YOUR INFO MADE PUBLIC, ANSWER N (no) ON THE DATA SHEET. IF YOU DO NOT ANSWER Y (yes) OR N (no) THEN YOU WILL AUTOMATICALLY BE PUT ON THE GENERAL LIST.
Remember, you may receive letters from OOPs months after you may have sold your VZ.

ANY COMMUNICATION to me that requires a written reply must be accompanied by a Self Addressed Stamped Envelope. Do not expect an immediate reply, as I may need to contact others to formulate an answer.
Always state your record number. That could be between A02 and A98, B01 and B98 or C01 and CXX. I have about 240 financial and unfinancial folk to keep track of. From LE'VZ #15, your record number and $ credit are printed at the top of your name and address label.

DO NOT TELEPHONE ME ON SUNDAY!!!

CIRCUIT, ROM and PROGRAMME LISTING PRINTOUTS can be sent to you at 20C per A4 page plus postage. Do not ask for the complete VZ ROM listing as it is very long and is about 15MM in thickness.

LETTERS TO THE EDITOR are welcome either as general comments, complaints or asking for help. As with contributors, please ensure that your typewriter or printer prints clear and DARK. In the new 35 character normal size print, IE. 90MM line length, right justified or wragged. If you have to write by hand, use a RED pen and write in the format just mentioned.

ADVERTISING is a free service to OOPs who are financial, for personal use only. Please use the above 35 character format. About 100 words or less.

CONTRIBUTIONS are very welcome. Please write your letter on a separate piece of paper to your contribution, which allows separate filing of material. You can send in programme listings in M/L or BASIC. Hardware modification or equipment drawings. Hints and any useful information. As above, use the new 35 character format except if it is a large circuit, drawing or photo. If it is a full page contribution reduce by photo copying so that there is a 20MM margin all the way around.
In fact I would like to receive more hardware contributions. Also photos of your equipment would interest others. There is a little problem here though as different photo copyiers reproduce certain colours differently. We can but try.

BASIC AND M/L PROGRAMME LISTINGS need special requirements.
Programme listings in M/L or BASIC can be sent as printed in normal size print which I can reduce-copy to make the master. Please make sure the print is dark and clear. The better approach is to send the programme on disc or tape. This enables me to give it a short test and check that it does at least does RUN. I can then print it in reduced mode while <LISTing> it.

TAPE/DISC CONTRIBUTIONS are therefore the best to send in this regard. This applies to programme listings or text. In regards to text, please send on ELF Wordprocessor tape which I can convert to QUICKWRITE Wordprocessor files or QUICKWRITE files on disc. Send in a padded post bag, and we will return it to you as soon as possible. We will pay the return postage. In this way if if it is a programme, it can be later issued as a PUBLIC DOMAIN programme. You must let me know if you will allow this to happen.

VPROGRAMMEZ-VHINTZ-VHARDWAREZ book. People have suggested that I print a second book. Please let me have permission in WRITING if you would like any of your contributions included in it.

Finally, I do not promise to print any or all contributions, this is at my discretion.

DOT MATRIX PRINTERS by Larry Taylor

The VZ is a versatile, little computer, especially if teamed with a peripheral device. When that device is an EPSON type dot matrix printer, its capabilities can greatly enhance the VZ's versatility.

Dot matrix printers form their characters from a series of dots. This type of printer falls into one of two categories either impact or non-impact. There are three main types of non-impact printers, thermal, electrostatic and ink jet. Thermal print heads contain a set of fixed pins, which are heated rapidly to produce a dot on specially treated, heat sensitive paper. Electrostatic print heads, also consist of fixed pins, which produce a tiny electrical discharge between the pins and an aluminium coated paper, forming the dot. Ink jet print heads are comprised of a vertical line of pin holes, through which a fine jet of ink is squirted onto the paper to create each dot.

Currently, impact type printers are the most common. The print head in an impact type printer usually consists of a line of pins arranged vertically. These pins strike against an inked ribbon to leave an impression on the paper. Each pin can be fired independantly. By firing all or some of these pins, a column of dots can be formed. The matrix used for most upper case (capital) letters is 5 dots wide and 7 dots high. To produce a character, the pins are fired forming a column of dots. The print head then moves one dot position and the pins fire again. This happens three more times to produce an upper case letter 5 dots wide.

Unfortunately, while the principle of their operation is similar, dot matrix printers differ in other ways. Software codes that are sent from the computer to the printer determine which pins will be fired. Not all printers will react to those codes in the same way. There are basically three families, EPSON, TANDY and APPLE, each conforming to a different standard. Both the EPSON and APPLE types address 8 pin print heads, whilst the TANDY types possess only 7 pins. Each pin is given a weighted value. In the case of EPSON types, the topmost pin has a value of 128, whilst the bottom pin has the value 1. These values are reversed for APPLE and TANDY printers. The bottom pin on a TANDY type is the seventh one and it has the value 64. TANDY type printers will only accept codes in the range from 1 to 127. The BP-100 belongs to the TANDY family and the VZ's ROM is set up to work with this type of printer. Since the codes used aren't compatible with EPSON type printers, a software patch is needed. The value of such a patch can be determined by looking at the relative merits of the two types of printers.

The BP-100 has tractor feed only, which requires the use of paper with sprocket holes. It has a print speed of 30 characters per second (30 cps) and is capable of unidirectional (left to right) printing only. This printer has both character and graphics modes. In character mode it possesses just the one typeface, which has no true descenders. That is, the tails on the lower case letters g,j,p,q and y do not descend below the line as they normally would. The only typestyle change, that can be made to the existing typeface, is that each character can be printed in double width (expanded) form.

On the other hand, software such as the VZ-EPSON Printer Patch, WORDPRO and QUICKWRITE, allows the VZ to make the most of the facilities provided by EPSON type printers. All allow EPSON codes to be sent directly to the printer.

Consequently, instead of being limited to the BP-100's meagre repertoire, a whole range of printers, with a host of enhanced features, is on offer. Most provide tractor and friction paper feeds, though a few require that the tractor feed be bought separately. In some cases, it may be possible to purchase a cut paper feeder, which can be useful, when printing multiple copies of correspondence on single sheets. Logic seeking (where the head looks to move the shortest distance possible) and bidirectional printing (the head prints on both left to right and right to left passes), means speeds can range from a minimum of 80 cps to 200 cps and more. These speeds are, of course, optimum values.

Though most printers possess only two typefaces (character sets), pica and italic, which are stored in an internal ROM, they compensate for this by offering a variety of typestyles. Different typestyles are formed by slightly modifying each character as it is printed. These include elite, condensed and double width. A few printers also offer double height and reverse print. In addition, there are features such as subscript (below the line) and superscript (above the line), emphasized and double strike. Proportional spacing is also available, which adjusts the distance between letters, according to their width. Some printers may have a high density (near letter quality) facility as well. With this the print head makes a second pass along each line, filling in the gaps between the dots, which form each character. Although slower, it results in better formed characters.

The ability to control line feeds to within 1/216 of an inch is desirable when compared to the BP-100's 1/6 of an inch. This is particularly useful to anyone, who has struggled to get mailing labels to line up on the printer. Some even allow the paper to be fed in reverse as well as forward. (This entire article was written using WORDPRO and printed in a single pass. The two column format was achieved by altering margin settings and using the printer's reverse feed.) The standard features all have recognized EPSON codes, whereas other features and their codes may vary from one printer to the next. The following table displays the codes, in decimal form, along with the resulting print type.

Standard Epson Codes

[27,80]	Normal Pica Print
[27,112,1]	Proportional Print
[27,77]	Elite Print
[27,52]	*Italic Print*
[14]	Double Width
[15]	Condensed Print
[27,69]	Emphasized Print
[27,71]	Double Strike Print
[27,45,1]	Underlined Print
[27,83,0]	Superscript Print
[27,83,1]	Subscript Print

Non-Standard Codes

[27,97,1]	High Density Print
[27,126,50,1]	REVERSED PRINT
[27,104]	DOUBLE HEIGHT

Whilst there is considerable standardization of EPSON print codes, there seems to be very little when it comes to the format used to present them. When examining printer manuals, the presentation of these codes can appear quite confusing. Some examples are given below. Each is supposed to show which codes are needed to switch on Emphasized Print. As shown in the table, this simply involves sending the two values 27 and 69 to the printer.

        Printer Manual 1   ESC+E [(45, C5)H, [69,197] D]
        Printer Manual 2   ESC E
        Printer Manual 3   <ESC> 69 45
        Printer Manual 4   <ESC> E
        Printer Manual 5   [1B]H [45]H or $[27]_{10}$ $[69]_{10}$

If you're confused by the above, don't feel bad, I found it just as difficult to understand? Basically the codes are presented in three ways, ASCII, Decimal (Base 10) and Hexidecimal (Base 16). ESC stands for Escape and represents the Decimal value 27. In Hexidecimal form the value 27 is equal to 1B. If a number has no identifying character or is followed by either a D or 10, then it is considered to be a decimal number. If it is followed by an H or 16, then it is considered to be Hexidecimal. So the three ways of representing the code required to switch an EPSON printer to Emphasized mode are summarised below.

        ASCII   ESC E
        Decimal   27   69
        Hexidecimal 1B   45

In VZ BASIC it would be accomplished by:
        LPRINT CHR$(27);"E";
    or LPRINT CHR$(27);CHR$(69);

Word processing software such as QUICKWRITE and WORDPRO allow print codes to be embedded in the text. Since these programs bypass the VZ's printer driver, any code value used will be sent directly to the printer. The following examples, illustrate how each of these programs enable a change of typeface at the beginning of a line.

QUICKWRITE embeds codes at the start of a line of text. The code must be preceded by a carriage return <CR>.
    eg.   <CR>[27][52]This is a word processing program.
WORDPRO uses printer control lines which are preceded by a print flag <PF> and end in a carriage return <CR>.
    eg.   <PF>N=27,52<CR>
             This is a word processing program.
The result, when printed from either program is as follows:
             This is a word processing program.
Although the manual says otherwise, WORDPRO is able to change typefaces in the middle of a line. The procedure is a little more complicated and involves turning the line feed command on and off. My thanks to John Chapman for supplying the method used.
    eg.   <PF>F=N<CR>   (set line feed off)
             This is a<CR>
             <PF>N=27,52<CR>   (switch italics on)
                  word processing<CR>
             <PF>N=27,53 F=Y<CR>   (italics off, line feed on)
                       program.
The result, when printed is as follows:
             This is a *word processing* program.
I've been informed that a recently updated version of QUICKWRITE will also be able to do this.

Whilst both of these approaches are satisfactory, they require the user to be familiar with all of the different print codes. Some word processing packages allow a label to be assigned to each print code, when the program is first set up. These can then be inserted in the text as required without the user having to know the code.

One problem often experienced, when attempting to use the VZ with an EPSON type printer, is that EPSON codes often alternate the values 1 and 0, for switching on and off a particular feature. For instance, the code used to enable and disable underlining [27,45,n] is identical, except for the last value n. Using the value n=1 selects underlining, whilst the value n=0 turns it off. The current VZ printer routine will not allow the value 0 through to the printer. Therefore, switching on underlining will work, but switching it off will not, and the same applies to similarly structured codes. Also affected, is any print code value greater than 127, which will be interpreted by the VZ's ROM routine as being either a graphics or inverse character. Since TANDY type printers do not store any characters in this range, the value will be intercepted by the VZ's ROM and replaced by a stream of graphics data. Whilst this data will enable a printer such as the BP-100, to print the character, it will not be compatible with an EPSON printer. These difficulties can be overcome by using a printer patch or by sending the value directly out the printer ports (0DH and 0EH). Print codes sent to the printer in this way, will be acted on without interference. It should be noted, however, that any characters printed by an EPSON printer, corresponding to codes in the range from 95 to 255, will not be the same as those displayed on the VZ's screen.

A number of printers come equipped with a RAM buffer. Instead of the computer being tied up waiting for the printer, the buffer acts as a storage area for data to be printed and so frees the computer sooner. A second use, is as an area for downloadable characters. These are shapes, which the user may design or which are modifications of the existing character set. By storing these shapes in the buffer, the printer can print them, as if they were part of the normal set.

In bit image (graphics) mode, print resolutions ranging from 480 to 1920 dots per line are possible. This mode allows the printing of shapes not held in the printer's ROM and is used when doing a dump of a HIRES screen. It should be noted that the VZ's screen is only 128 pixels wide. The printer is capable of 15 times this resolution, allowing it to depict much finer detail than is possible on screen.

In the world of printers, the primary standard has been set by EPSON. There can be no doubt of this, since the majority of printer and computer manufacturers produce equipment, which conforms to it. IBM's adoption of the standard is further confirmation. Even the TANDY printers, offer, in their latest models, an IBM-EPSON compatible mode. Your VZ may not be able to compete in the real world, but your printer can. Selecting an EPSON type printer to partner your VZ, means stepping into the mainstream of the computing world. When you finally outgrow your VZ, you will still have a useful peripheral that's able to communicate with almost any computer you happen to choose.

(VZ)

QUICKWRITE AND PRINTERS.

I receive scores of enquiries from folk wanting to know whether to buy a *printer/plotter or printer*. Basicaly a printer/plotter is designed to draw graphs, circles, squares and various shapes. Although it can print ordinary text, it is rather slow in operation. The DSE. TP 40/PP 40 types are quite small using paper 115 MM wide.

A PRINTER is designed for printing text at a faster speed. They can also print graphs and graphics, but printing of text is the usual use. So if you are contemplating purchasing a printer/plotter or standard printer, think carefuly before you do so. Mr.Printer, alias *LARRY TAYLOR'S* article on pages 12 and 13 should be read to help you decide.

Suitable articles also appear from time to time in various magazines, IE:-

A.P.C Special 1986.
TODAY'S COMPUTERS Feb. 1985.
E.A. Dec. 1984.
E.A. Nov. 1983.

QUICKWRITE WORD PROCESSOR AND PRINTERS.

Without a doubt I think that our QUICKWRITE is the best Wordprocessor available for the VZ. See a short demonstration printout in LE'VZ #16, printed by our CITIZEN 120D printer which shows only a few print styles that can be acheived with QUICKWRITE.

The author of QW has not printed the printer control codes in the Operators Manual, because as you can see there are many different codes for various printers, as mentioned in Larry's article.

QUICKWRITE V3 control codes must be typed in at the very beginning of a line that you wish to print in a particular print style. This is what I am going to show you here. As Larry mentioned, although the DSE. WORDPRO Wordprocessor Cartridge unit is designed to do a similar thing, a word or words (text) which is not at the start of a line, can be printed in a different style can be acheived, it is very cumbersome to do.

The next version of QUICKWRITE allows this to be carried out easily by simply typing in a single character. The user can design a series of type styles which suit your printer and save to disc. With either version of QUICKWRITE the user must know the control codes for the printer in use.

I now print a few of these for our CITIZEN 120D and QW V3. All codes are in ASCII enclosed in square brackets and must immediatly follow a <CR> (carriage return, end of line) EI:-

Expanded print one line   on   [14]
Condenced print on   [15]
     "   off   [18]
Double height on   [27][126][49][49]
     "   off   [27][126][49][48]
Reversed print (white on black) on, plus
Double height on, plus Italics on
[27][126][50][49][27][126][49][49][27][52][27][45][49]

The last one switches the printer to three styles and so is rather long. So there you are, all quite simple when you know how. By the way, the TP 40 F/Plotter can be used with QUICKWRITE, its just a matter of typing in the correct codes.

                                              (VZ)

GOD showed his love for us by sending his only Son into the world, so that we might have life through him.

                    I John 4:9

Mr.Peter Hickman of P.O. Box 8, WERRINGTON. NSW. 2760, sent this little BASIC routine that stops a printer printing over the folds of fanfold paper.
It does the same job as the routine sent in by Mr.F.Rees in LE'VZ #16 PAGE 4.

I USE FAN-FOLDED PERFORATED PAPER 9.5 X 11 INCHES - APPROX QUARTO. TO GET THE DISASSEMBLER TO PRINT 60 LINES PER PAGE, A FEW LINES CAN BE ALTERED. NOTE THAT LOCATION 30761 IS THE LINE COUNTER FOR LPRINTING. ADD THESE LINES TO YOUR PROGRAM:-
19914 IF PEEK(30761)<60 THEN 19920
19916 FOR NP=1TO6: LPRINT: NEXTNP
19918 POKE 30761,0
27000 POKE 30761,0
27010 LPRINT"VZ-200 Z-80 DISASSEMBLER V1.0:RETURN"

IF YOU KNOW HOW TO INTERCEPT THE LLIST ROUTINE TO GET THE SAME EFFECT, PLEASE LET ME KNOW.

DISSABLE <LIST>/<LLIST>

This little M/L routine will enable you to dissable the <LIST> and <LLIST> function of the VZ. It could be incorporated in a BASIC programme but of course it is only effective after the programme is run.

```
001 ;POKE TO DISABLE L/LL
002 **POKE 2**
003 **??**
004    LD    A,196
005    LD    DE,31199
006    LD    (DE),A
007    LD    A,114
008    LD    DE,31200
009    LD    (DE),A
010    LD    A,0
011    LD    DE,31201
012    LD    (DE),A
013    JP    1A19H
```

ART GALLERY SOFTWARE

ART GALLERY is based on an APPLE and IBM program called PRINT SHOP.
It consists of two programs. POSTER SHOP is a Graphical Word Processor which allows you to type in High Resolution mode. Also draw shapes, cut and paste.
FONT GENERATOR allows you to create different lettering styles which can be used at anytime.
Posters can be saved and loaded from disk and printed out using an EPSON compatable or GP100 printer.
Requires a VZ200+64K or VZ300+32K DISC SYSTEM.
Comes complete with two example fonts, an example poster and 11 page instruction manual.
The price is $20.00. and is available from :-

MR.BRUCE KITCH, 7 EURELLA ST., KENMORE, 4069.
QLD. AUSTRALIA   Phone (07)378 3745

BRISBANE V Z USERS WORKSHOP.

Well, we have finally decided on this as our groups name, the decision was made at our last meeting, which was held at Capalba State High School, on Saturday the 4th. of July.

Until now, our meetings have been very informal, but thanks to efforts of John D'Alton and Bob Jones we started this meeting with a discussion on the general format we should follow.

Our First decision was that the workshop must get underway by 1 pm. sharp, beginning with "HOUSE KEEPING" (approximately half an hour), then "QUESTION and ANSWER TIME" (approximately half to one hour). We also hope to have a member of the group give a small semi-formal talk on various technical aspects concerning the V Z, (approximately half to one hour). "SHOW and TELL" will be next, this time will be set aside so that members can have the opportunity to demonstrate their own projects or any new hardware or software they may have. Jeremy Lee gave us a demonstration of "CHIP 8", which is a machine language program using only 4096 bytes, which will produce high speed, high resolution graphics. Finally, Eddie Tomes, who compiles a commercial software catalogue, will give a "SOFTWARE REPORT".

Consistent with our policy of informaltity, we decided not to create the usual positions of President or Chairman, however a voluntary position of Co-ordinator and treasurer was proposed and Bob Jones has kindly accepted this role. Bobs address is :-

Mr.Bob Jones, 63 Tingalpa St., Wynnum West. QLD. Phone (07)396 0376.

The B.V.Z.U.W. has available for sale a "DISK MENU" program which was generously donated by Larry Taylor, thanks Larry. The sales from this and the proposed attendance charge of $2.00 adults and .50c for children, will help to cover the cost of renting the school room.

Thanks also to John D'Alton for donating a copy of the "QUICKWRITE" Word Processor to the workshop, it will assist in the compilation of this report.

In an effort to increase our attendance, we have approached some of the Dick Smith stores and they are allowing us to advertise on there store notice boards.

Thanks again to John D'Alton for making this space available in LE'VZ. Thats all for now.

2256 CAANS,

JOHN WILKINS.

---

* WORD PUZZLE ANSWERS. *

Here are the words that are hidden in the Wordsquare on page 8.

RAM
ROM
BAUD
DISC
TAPE
APPLE
MODEM
BYTES
AIODS
HULLO
PLOTTER
PRINTER
JOYSTICK
SOFTWARE
COMPUTERS
QUEENSLAND

VLISTZ

This is our catalogue of all the software we sell from VSOFTWAREZ.

This is our registered business name in Queensland. If you require a VLISTZ, then send a S.A.S.Envelope 230MM X 100MM to the address on page 10.

(VZ)

(cut here)

Date ....19..... Code # if known .... This LE'VZ number ......
Surname....................... Mr, Mrs, Miss and Christian name...................
Address.....,... ..Post Code ....
Telephone number. STD( ).................... Onto General List Yes/No..........
Computer. VZ200 and/or VZ300...............Any other computer...................
Printer and/or plotter......................................Disc system Yes/No.....
RAM Expansion........K. Tape recorder. VZ DTR or other............................
RS232 terminal..... Yes/No.........Modem Yes/No.......... Brand...................
Interest. Business, games, M/L, BASIC, hardware, etc.............................
....

DATA SHEET

I request all OOPs (Oners-Operators-Programmers) to complete, cut out and send back to me. As mentioned elsewhere in this LE'VZ, this is useful for OOPs who may like to contact other OOPs who live in their vicinity, etc. Answer N (No) if you do not wish your name put on this General List. If the answer is Y (Yes) or not answered at all, you will be put on the General List.

HARDWARE AND FIRMWARE FOR SALE.

VSOFTWAREZ, 39 Agnes St., TOOWONG. QLD. 4066.
AUSTALIA. 'Phone (07) 371 3707.

Unlike our software prices, these do NOT include postage. Always include extra money with your order and we will send any surplus back in the parcel or put it towards any credit you may wish, such as to LE'VZ, if you are an OOP. If you wish to receive LE'VZ, read page 11.
Prices are in Australian dollars (AUD) as at the 1st. of August 1987. Items available while stocks last.
There is NO WARRANTY on used items, but all are tested OK.

NATIONAL tape recorder	used	$ 20.00.
~~OP100 printer ribbons~~	~~new~~	~~$ 22.00 for two.~~
~~These are not the exact type, but a few minutes fiddle.~~		
~~We have had trouble obtaining these, so this will be the last lot.~~		
VZ200 rubber membrane keys	new	$ 18.00 each.
VZ300 rubber membrane keys	new	$ 18.00 each.
C10 blank tapes	new	$ 6.50 for five.
C20 blank tapes	new	$ 7.00 for five.
Floppy discs NASHUA DDSS	new	$ 18.00 for ten,
bulk, so they are not in packs.		
VZ300 & p/pack & manual	used	$ 50.00.
VZ 300 Disc Drive	used	$270.00.
VZ Disc Drive Controller	used	$ 60.00.
16K RAM Pack with VZ200/VZ300 changeover		
switch	used	$ 60.00.
Printer interface	used	$ 25.00.
16K RAM pack VZ200.	_u_	_50-00._
CITIZEN 120-D Printer	new	$490.00 including
sales tax.		

We are now Agents to sell this printer. It is the best printer in its price range. As you can see elsewhere in this LE'VZ, I have printed just a few of its printer/font styles.

Its recommended price is $586.00 s/tax included. There is a 12 month warranty, backed up by DATATRONICS who are in most capital cities in Australia, so if problems should occur, the unit need only be sent to the nearest centre. Cartage costs are of course extra, paid by the purchaser, so include about $20.00. for this.

BOOKS.
VPROGRAMMEZ-VZ-VZ	new	$ 18.50 each.

Surface postage in Australia and NZ is included.
This is my own special book for beginners and advanced VZers.
BASIC Easier and Faster TRS80	new	$ 10.00 each.

By Lewis Rosenfelder.

This unit plugs into your PRINTER INTERFACE SOCKET.
You can select external power supply, or with a small modification to your printer interface the power is supplied by the VZ itself. This eliminates the need for another power-pack.
The module comes completely built and tested, housed in a plastic case with the Centronics socket fitted. Also includes internal speaker in the case, switchable to an external speaker or amplifier.
Also comes complete with software on tape consisting of Phase Composer and Dictionary to allow for initial testing. The software output routines enable you to get the module up and yapping at you from the word go. Unit comes with an instruction manual.

PRICE $95.00.
Write to:-
VZ DOWN UNDER. Scott Le Brun, 5 Cameron Court, WANTIRNA. VIC. 3152. AUSTRALIA.

E&F   W.P.PATCH

This single Patch will convert your E&F TAPE WORD PROCESSOR for full DISK use while retaining all TAPE functions. It can be used with 1 or 2 DRIVES. Below are the two Menus.

E)DIT TEXT	L)OAD
C)LEAR TEXT	S)AVE
P)RINT TEXT	D)IR
L)OAD FILE	E)RA
S)AVE FILE	R)EN
V)ERIFY FILE	I)NIT
Q)UIT PROGRAM	1-2) DRIVE 1
D)ISK MENU	M)ENU

An option for invisible file names is also provided so your sensitive files are protected. A 16K RAM PACK is needed for VZ200/300. The price is $10.00, while for NZ $12.00 AU$ and is available from :-
HUNTER VALLEY VZ USERS' GROUP P.O.BOX 161 JESMOND 2299 N.S.W. AUSTRALIA   Phone (049)51 2756

30-7-87
VZ300 _Alvin Graham._
Randwick Tas.,
591 8071.
I said, I want OOA to have opportunity to buy too — but over in couple of months.

_1X OP100 $160-00,_

COMMERCIAL SOFTWARE
for the DSE VZ200-300 COLOUR COMPUTER

****

PROGRAM NAME — DISTRIBUTOR

****
EDUCATIONAL PROGRAMS
****

Program	Distributor
Speed & Accuracy	LYS
Study Aid	LYS
Maths Pack	MoC
Code Maker/Break	MoC
Number Challenge	MoC
Word Challenge	MoC
Radio Man Pack	HIR
Parent Teacher Pack	HIR
Statistics I	DSE
Statistics II	DSE
Speed Reading	DSE
Typing Teacher	DSE
Music Writer	DSE
Spellomatic 1 & 2	DSE
Spellomatic 3 & 4	DSE
Flashcard 1 & 2	DSE
Flashcard 3 & 4	DSE
Metric Sprcatcher	DSE
Whizkid Sprcatch	DSE
Maths Armada	DES
Elementry Geometry	DSE
Word Matching	DSE
Keyboard	VSW
Wordmatching	VSW
Meatries	VSW
Maths Countdown	VSW
Coordinates	VSW
Tower Of Hanoi	VSW
Microscope	VSW
Block Puzzler	VSW
Meatries VZ	VSW
Plus And Minus	VSW
Maths	VSW
Queensland	VSW
European Capitals	VSW
Camping	VSW
Edudisk	VSW
Morse Code	MIL

Program	Distributor
Snertle	LAS
Maths Countdown	LAS
Coordinate	LAS
Microscope	LAS
Keyboard	LAS
Tower Of Hanoi	LAS
Meatries v2	LAS
Type Teacher	BNE.

****
GAMES PROGRAMS
****

Program	Distributor
Morgoth	COS
Boskone Alert	COS
Rally Racer	COS
Defence Penetrator	COS
Super Invaders	MIL
Pak Man	MIL
Biorythm	MIL
Snake Maze	LOW
Ten Pin Bowling	MoC
Graphic Golf	MoC
Enchanted Princess	MoC
Gamblers Pack	MoC
Hi Jinks	MoC
Sultans Palace	MoC
VZ Racer	MoC
Star Pilot	CAR
Skiing	CAR
Target	CAR
Golf	CAR
Hansman	RHO
Flight Deck	VSW
Learjet	VSW
VZ Monopoly	VSW
Flying Saucer	VSW
Haunted Mansion	VSW
Mansion / Nova	VSW
Scotland Yard	VSW
Blackjack	VSW
Poker Machine	VSW
Word Squares	VSW
Computer Monopoly	VSW
Trivial Cult	VSW
Scotland Yard 2	VSW
Air Traffic Controller	VSW
Monopoly v2	VSW
Escape River	VSW
Ghoulbusters	CEL
Royal Poker	CEL

Program	Distributor
Thermonuclear War	CEL
Galactic Fighter	CEL
Lunar Landers 2020	CEL
Cataclysm Catapillar	CEL
Jailhouse/Breakout	CEL
3-D Merciless Maze	CEL
Minotaur Periless	CEL
Battle Galaxy 7	CEL
Airlocks Maze	CEL
Reactor Destruction	CEL
Titanium Triology	CEL
Conan The Barbarian	CEL
Battle Of Vietnam	CEL
Two Up	LYS
Russian Roulette	LYS
Beat The Bus	LYS
Mousetrap	LYS
Alien Escape	LYS
Cub Scout	LYS
Asteroid Field	LYS
Little Packer	LYS
Caverns of Venus	LYS
Goldmine Adventure	LYS
VZ Startrek	LYS
The Enchanted Princess	LYS
Ten Pin Bowling	LYS
Graphic Golf	LYS
The Lost Sword	LYS
Castle	LYS
Haunted House	LYS
UFO's	LYS
Pharaoh's Tomb	LYS
Land of Scrod	LYS
Adventure Island	LYS
Convoy	LYS
Alien Rain	LYS
Yahtzee	LYS
Triffids : 2040 AD	LYS
Melbourne Cup	LYS
Pyramid Adventure	LYS
VZ Star Trek II	LYS
City Blitz	LYS
Slot Machine	LYS
Matchbox	DSE
Poker	DSE
Hansman	DSE
Slot Machine/Roulette	DSE
Blackjack	DSE
Circus	DSE
Biorythm	DSE
Invaders	DSE
Dynasty Derby	DSE
Learjet	DSE
Ghost Hunter	DSE
Hoppy	DSE
Super Snake	DSE
Knights & Dragons	DSE
Defence Penetrator	DSE
Star Blaster	DSE
Asteroids	DSE

Program	Distributor
Air Traffic Controller	DSE
Tennis	DSE
Checkers	DSE
Ladder Challenge	DSE
VZ - Panic	DSE
Planet Patrol	DSE
Othello	DSE
Draculas Castle	DSE
Backsammon	DSE
Attack Killer Tomato	DSE
Chess	DSE
Duel	DSE
Formula One	DSE
Kamakazi	DSE
Missile Attack	DSE
Disout	DSE
Hamburger Sam	DSE
Lunar Lander [Laser]	DSE
Lunar Lander [VZ300]	DSE
Galaxon	DSE
Dawn Patrol	DSE
Tennis Golf Lesson	DSE
Horse Rabbit Racing	DSE
Crash	DSE
Penguin	DSE
Pharoahs Curse	DSE
Maze of Argon	DSE
Space Ram	DSE
Poker	BJE
Circus	BJE
Invaders	BJE
Ghost Hunter	BJE
Hoppy	BJE
Super Snake	BJE
Knights & Dragons	BJE
Defence Penetrator	BJE
Star Blaster	BJE
Asteroids	BJE
Panic	BJE
Planet Patrol	BJE
Ladder Challenge	BJE
Learjet	BJE
Air Traffic Controller	BJE
Rally X	BJE
Checkers	BJE
Hangman	BJE
Blackjack	BJE
Golf Lesson	BJE
Tennis	BJE
Galazian Adventure	BJE
Snake	TAI
Snake Trap	TAI
Phantom Driver	TAI
Word Teaser	TAI
Ghostly Maze	TAI
Pattern Guess	TAI
Bright Idea	TAI
Cross Over	TAI
Snake Trails	TAI
Shark Bait	TAI

Program	Distributor
Grave Disser	TAI
Missile Safe	TAI
Three Hundred	TAI
Shoot	TAI
Hunter	TAI
Fighter	TAI
Piano Songs	TAI
Save Me	TAI
Cavern Chaos 2	TAI
Enervac	TAI
Circuitry	TAI
Fuse	TAI
Mower Mania	TAI
Flag Climber	TAI
Astro Save	TAI
Star Treker	APE
The Lost Crown	APE
Teacher Zapper	SOR
Solo Battleships	LAS
Magnum Quest	LAS
Escape River	LAS
3D Maze	LAS
Draculas Maze	BNE
Castle Greystone	VDU
Galactic Empires	VDU
Haunted Mansion	VDU
Knights Quest	VDU
Scotland Yard	VDU
Snake Duel	VDU
Stellar Wars	VDU
VZ Monopoly v2.0	VDU

****
BUSINESS PROGRA***
****

Program	Distributor
Le'VZ Statement	VSW
Cheque Ledger	VSW
Cash Book Ledger	VSW
Le'VZ D'base	VSW
Database VZ	VSW
Mailing List	VSW
Quickwrite	VSW
Metic Conversion	LYS
Racing Selector	LYS
Check Record	LYS
Master Finance	LYS
Speed & Accuracy	LYS
Lemonade Stand	LYS
Study Aid	LYS
Card File	LYS
Decision Evaulator	LYS

Mailing List DSE
Portfolio Management DSE
Discounted Cashflow DSE
Financial Cashflow DSE
Word Processor DSE
Matrix DSE
Database DSE

Word Processor DAW
Data Master DAW
Address Book DAW

Super Word Processor BRO

Matrix Utilities APE
Finance Helper APE
Electronic Aid APE

P.I.N. File 2 BNE

Vz Database VDU

****
UTILITY PROGRAMS
****

VZ Extended Basic S.O. VSW
Protect VSW
Cmerge/Delete/Renum VSW
Monitor / Debugger VSW
Extended Basic N.O. VSW
Array / Restore VSW
File Search VSW
Copy / Protect VSW
Disc Guard VSW
Editor Assembler VSW
Colour Graphics VSW
Weaving Drafts VSW
Utilitys VSW
Disassembler VSW
Disk Copy VSW
VZepson Print Patch VSW
Load XX80 Files VSW
Search Tape VSW
Disk Ops 1 VSW
Disk Ops 2 VSW

Colour Graphics PAM

VZ - Mon 80 LYS

Program Copier CEL
Screen Drawer CEL
Hackers Delight CEL

Introduction to Basic DSE
Hex Utilities DSE
Disassembler DSE
Editor Assembler DSE

Sprite Generator DSE
VZ Extra Commands LEH
Monitor Debugger WOB
Renumber Merge WOB
Word Processor DAW
Program Copier SAR
VZ Debug MIL
Graphics Pack MIL
Retrieval Program BRO
Copier SUN
Diskguard LAS
Filesearch LAS
Epson Print Patch LAS
Copypro 4 LAS
Colour Hardcopy LAS
Fast Disk & Menu LAS
VZrcbad LAS
Disk Toolkit LAS
Extended Basic G.W. LAS
Magic Paint LAS
VZ Bascom LAS
Disk Menu BNE
Poster Shop BNE
Tape I.D. 3 BNE
Tape List BNE
VZ Chip 8 GRI
Namestar-Shopstar VDU

++++++++++++++++++++++++++++
****
Software Companies Decoding
****

DSE Dick Smith Electronics
LYS Lysco
VSW Vsoftwarez
CEL Celestron
COS Cosmic
DAW L Dawson
HIR John Hirst
McC G McCleary
MIL R S Miller
LOW B Low
CAR Adam Carter
RHO Chris Rhodes
PAM Pam Software
TAI Lee Tait
SAR N Sarafoudis
LEH G Lehman
WOB W Obrist

****
This list is as complete as
current information shows.
****
To prevent this software being
lost to the future groups of
VZ'ers, it would be an
advantage to have a Central

BJE S Bjelic
APE APE Software Co
SOR J L Sortland
SUN E Sundstrup
BRO G Browell
LAS LaserLink
GRI Griffin
BNE Brisbane Workshop Grp
VDU VZ Down Under

****
****
A number of programs appear under
different suppliers and are the
same programs also several
versions have been sold over
the years as programs are
developed and improved.
****
****

Some Software companies and
writers have now closed or are
distributing under other names.
**********   ********
J. D'alton is also VSOFTWAREZ

LYSCO [Leon Young Software] to
stop selling VZ software as of
31 July 1986. But as yet no
word of Who will take over
sales and distribution

N. Sarafoudis also CELESTRON

COSMIC acquired by DSE

R. S. Miller closed down

Hi-Com Programs also J Hirst

Celestron programs almost
unobtainable even with a
personal approach. I have seen
1 program.

BJE programs appear to be
copies of DSE programs
VSW Flight Deck appears to be
incorrect name for Air Traffic
Controller

Library to hold a copy of these
programs so that once the
Distributor leaves the
marketplace the Central Library
would then be able to provide
future clients with programs
without contravening Copyright.
A small charge could be made
for the tape or disk and some
royalty payment to the
participating writers. Please
give your thoughts on this.
****

I would like to hear from any
person who has either new or
old software that is not listed
here so that this Catalogue can
be updated at regular
intervals.

Any new products will only help
to expand the usefulness of the
VZ computer and any advice must
contain Name and Address of
Writer or Distributor so this
catalogue can be updated.
****
Please note :- As
compiler of this list I do not
hold copies of, or possess
distribution rights for all
programs mentioned in this
Catalogue, but I will assist in
contacting the software houses
applicable for the program.
****

Any update or correction to the
above listings please forward
to :-

Eddie Tomes
3 Kilkenny st. Caralaba Qld.
4157
Telephone .07- 3902797
****
Compiled and updated:-
July 1986, December 1986, June
1987.