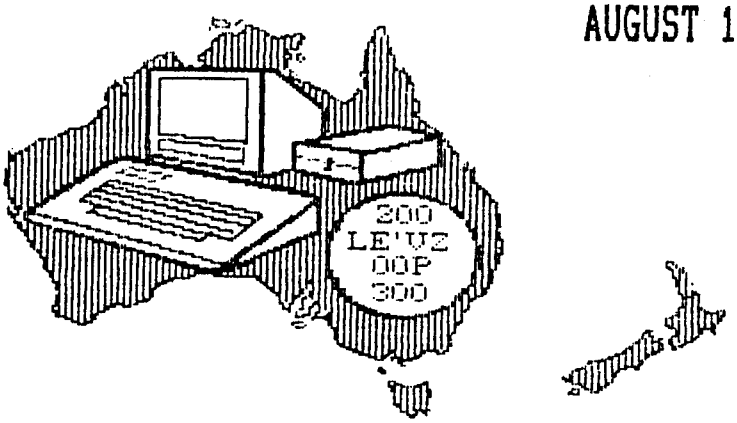
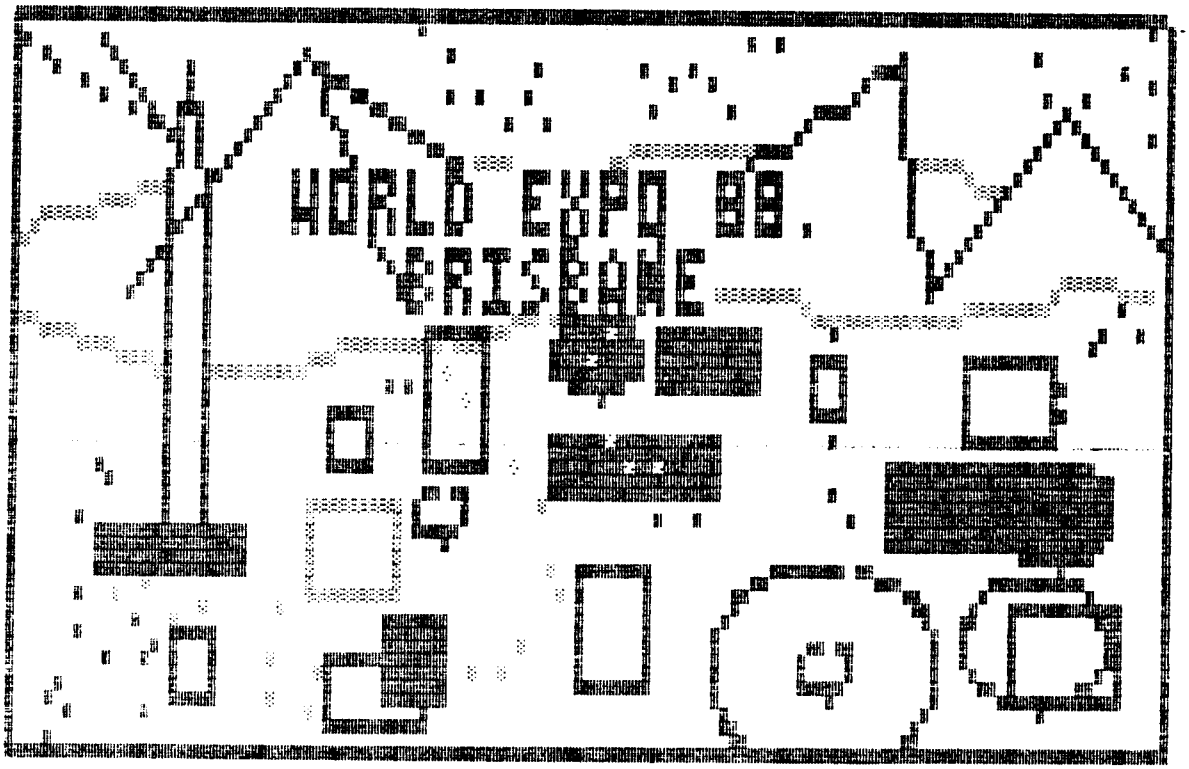
* LE'V2 200/300 *

Ouner's Operators Programmers

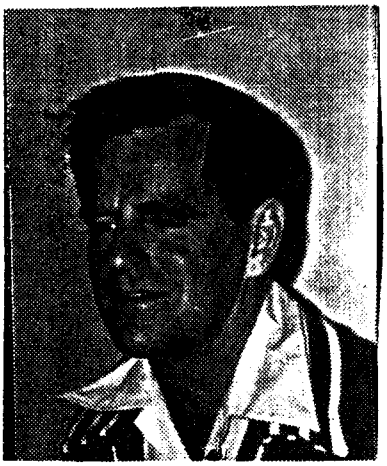
** THE SOUTH PACIFIC MAGAZINE FOR VZ COLOUR COMPUTERS **

AUGUST 1988. $20 A$2.00.





EDITORIAL



How youorl,
Howdy,

Well Marie and I have finaly returned to this sunburnt country of milk and honey. Its good to get away from ones own country but just as good to return to it and our relatives and friends. For those who do not know where we went, we holidayed in the U.S.A and Mexico. What a cultural differance between those two countries. I had a great time speaking a little Spanish (una pocito habla Espanol). I hope that's correct.

I drove over 7000 miles in two cars on the other side of the road and visited twelve states including Washington D.C. The affluence of Florida has to be seen to be believed. What wonderfuly friendly helpful folk. What fantastic scenery and road systems. But ---, small computers are not popular. I checked in bookshops and the only reference to computers other than IBM and Compatables were to APPLE, ATARI, TRS 80 and COMMODORE 64/128. No VZ, SPECTRUM, AMSTRAD, MICROBEE, BBC etc. But what there is costs about half what we in Australia have to pay. ***See my article elsewhere in this LE'VZ.***

The U.S.A. is certainly the hi-tch country, way ahead of us "down under".

It was great seeing the sun in the southern hemisphere although it was confusing for me for a couple of weeks. Gas (petrol) averaged at US 90c per gallon. Food about half what we pay. Nearly all we spoke to had seen Crocodile Dundee and Jackoe's adverts on TV. But sad to say very little else about Australia or any other country, even Mexico or Canada. Only a handful knew that World Expo 88 was held in Australia. So of course they wanted to hear us talk and tell them about our country.

World Expo 88 is going ***great.***
I hope some OOPs have been or are intending to attend it. Be prepared to spend a couple of weeks at it. Sorry to say, but as expected, the other Australian States displays are rather poor. They just did not have enough time to plan. I am very disappointed with my home state of Tasmanias effort. Whereas the Queensland pavilion is excellent. It and some other good pavilions have copied some of the technics employed at Disney World and EPCOT that we visited in Florida.
The New Zealand pavilion is also one of the top ten, well done Kiwis. The Pavilion Of Promise uses old and new technology in the use of mirrors and laser lights and is also amongst the top ten. There are lots of computers in and outside of the pavilions. Most are touch screen units which require input from people, VERY GOOD!!

A few things have been happening in VZ World while we have been away. Articles in E.T.I and A.E. magagazines. See my article elswhere. Remember to check some of the other VZ User Group newsletters. Of course we should all know that DSE no longer sell the VZ. It was only a matter of time, the way of all good computers. We will support the VZ as long as sufficient folk contribute and others require assistance. I hear that D.S.E. are selling some stock rather cheap, IE. RTTY and RS232 units at around AUD$30.00 each.

I mentioned in my Editorial in LE'VZ #19 about a new small computer magazine called ***MEGACOM*** soon to be released. Well it is still on the way, the first issue should be out now so hopefully by the time you read this some folk will already have seen it.

Last but not least, this ***LE'VZ*** is its fourth birthday issue. Yes, I started publishing it in June 1984. Time marches on.

Happy computering,
GOD bless.

CONTENTS.

LE'VZ 200/300 OOP IS PUBLISHED BY MR J.C.E. D'ALTON OF 39 AGNES ST, TOOWONG, QLD. AUSTRALIA. TELEPHONE (07)371 3707.

OUR QUICKWRITE WORD PROCESSOR IS USED EXTENSIVELY.

SUPER DISK MENU

SCOTT LE BRUN - VZ DOWN UNDER

Not another disk menu! I hear you ask. Yes. But this one is uniquely different.

The problem with conventional disk menus is that they have to be physicaly modified to suit each different disk that you want to use it for. You have to change around RUN"XXXXXX" & BRUN"XXXXXX" and so on.

But not with SUPER DISK MENU. This program, when updated from a single push of a key, reads what is on the disk and then it MODIFIES ITSELF to suit the various programs on the disk.

HOW IT WORKS:- When the UPDATE option is selected, it reads the directory and prints it on the screen. It then uses <PEEK>s & <POKE>s to copy what is printed on the screen into <DATA> statements located near the start of the program.

Once <RUN>, it <READ>s the <DATA> statements into an array of strings and prints the strings onto the screen alongside a number which when pressed, selects that particular program for loading.

Lines 220 & 222 check to see whether the filename read from the <DATA> statements is suitable for loading. Only <T>ext or <B>inary files can be loaded. If it detects a <D>ata or <W> file, it ignores them and proceeds to the next file. If it finds a <A> or <space>, it takes this as the end of the list of files.

Once a file has been selected, it then <POKE>s in the token coresponding to the necessary command:- RUN or BRUN. It then copies the file's name after it and encloses the filename with inverted commas ("). After this is done, it then just executes a <GOTO> instruction which makes it jump to the line where the RUN, BRUN command was poked, which it executes, loading in your program.

The <BRUN> command consists of ASCII 66 & 142. Which are B & RUN put together, instead of a single ASCII number. Since this takes up an extra byte, the <RUN> command will be a bit shorter and an overlap will occur. To get around this, the program <POKE>s in a colon <:> before the <RUN> statement.

WARNING:- Don't alter lines 10 to 115 (or insert lines in between) or the program will crash.

To use the SUPER DISK MENU. Just type in the program and <SAVE> it to disk (For a backup). Now run the program, select the UPDATE option and insert the disk that you wish the MENU to be on. (Make sure that a file exists on the disk called "MENU".) Just follow the prompts and it will <SAVE> itself to disk.

The program can only store 15 filenames in it's DATA statements. If more than 15 files exist on the disk, it will take the last 15. To allow more files, put MENU as the first file, as you don't need to load it. Any files that you don't use often, put near the start also.

To change from disk to disk, just load the MENU from one disk and select the UPDATE option and then insert the next disk and it will adjust itself accordingly.

If you find yourself in strife, just write to me explaining the problem and I'll see what I can do.

I'm sure you'll find this MENU to be extremely useful. I know that I do!

If you have any problems with this program or you have any suggestions on how to improve it, feel free to write to me.

SCOTT LE BRUN
59 BRENTWOOD DRIVE
WANTIRNA VIC 3152.

```
10 REM SUPER MENU
20 REM BY SCOTT LE BRUN
30 REM VZ DOWN UNDER
40 REM AUGUST 1987
50 GOTO120
60 DATA AAAAAAAAAA,AAAAAAAAAA,AAAAAAAAAA,AAAAAAAAAA,AAAAAAAAAA
70 DATA AAAAAAAAAA,AAAAAAAAAA,AAAAAAAAAA,AAAAAAAAAA,AAAAAAAAAA
80 DATA AAAAAAAAAA,AAAAAAAAAA,AAAAAAAAAA,AAAAAAAAAA,AAAAAAAAAA
90 DATA AAAAAAAAAA
100 :RUN"AAAAAAAA":
110 STOP
115 DATA AAAAAAAAAA
120 CLEAR100:DIMA$(16)
130 CLS:POKE30777,1:COLOR4
140 PRINT"                                                              ";:REM 32 SHIFT+J
150 PRINT"                                                              ";
160 PRINT"                                                              ";:REM 32 SHIFT+J
170 FORI=1TO12:PRINT"                                                  ";:NEXT
175 REM ABOVE LINE- 1 SHIFT+J, 30 SPACES, 1 SHIFT+J
180 PRINT@480,"                                                              ";:REM 31 SHIFT+J
190 POKE29183,191
200 D=0:FORT=0TO1
210 FORI=1TO8
215 READA$:A$(I+T*8)=A$:L$=LEFT$(A$,1)
```

GOTO PAGE 4

```
220 IFL$="T"ORL$="B",240
222 IFL$="D"ORL$="W",215
228 IFD=0,I1=I:T1=T:D=1
230 GOTO270
240 P$=RIGHT$(A$,LEN(A$)-2)
250 IFT=1ANDI=1,PRINT@98+I*32+T*14,I+T*8")- "P$:GOTO270
260 PRINT@97+I*32+T*14,I+T*8")- "P$
270 NEXT
280 NEXT
290 A=I1+T1*8:PRINT@97+I1*32+T1*14,A")- [illegible]"
300 POKE30777,35
310 PRINT@418,"YOUR SELECTION";:INPUTB$:B$=LEFT$(B$,LEN(B$)-1)
320 B=VAL(B$)
330 IFB<1ORB>A,310
340 IFB=A,440ELSEPRINT@481,"                                ";
350 PRINT@481,"[illegible]";A$(B);
360 L=31757:P$=RIGHT$(A$(B),LEN(A$(B))-2)
370 IFLEFT$(A$(B),1)="B",POKEL,66:L=L+1ELSEPOKEL+11,58
380 POKEL,142:POKEL+1,34
390 FORX=1TO8:L$=MID$(P$,X,1):LL=ASC(L$):IFLL>92,LL=LL-64
400 POKE(L+1+X),LL:NEXT
410 POKEL+10,34
420 GOTO100
430 GOTO430
440 CLS:PRINT@3,"[illegible]";
450 A$=INKEY$:A$=INKEY$:IFA$="",450ELSECLS:DIR
460 NF=0:FORI=0TO14:P=28672+I*32
480 NEXT
490 FORN=0TO4
510 FORI=0TO9
520 POKE31558+I+N*11,PEEK(28672+I+N*32)
530 NEXT
540 NEXT
550 FORN=0TO4
570 FORI=0TO9
580 POKE31619+I+N*11,PEEK(28672+I+32*5+N*32)
590 NEXT
600 NEXT
610 FORN=0TO4
630 FORI=0TO9
640 POKE31680+I+N*11,PEEK(28672+I+32*10+N*32)
650 NEXT
660 NEXT
665 PRINT@488,"[illegible]";
667 A$=INKEY$:A$=INKEY$:IFA$<>"Y"ANDA$<>"N",667
669 IFA$="N",RUN
670 PRINT@482,"[illegible]";
680 A$=INKEY$:A$=INKEY$:IFA$="",680
690 ERA"MENU":SAVE"MENU"
700 PRINT@480,"[illegible]";
710 A$=INKEY$:A$=INKEY$:IFA$="",710ELSERUN
```

END

>>> PRINTER GRAPHICS <<<

BY LARRY TAYLOR

This is another fine contribution by Larry. He manages to find time to develop the various contributions and software between his busy life as a school teacher.

His article commences on ***page five*** and then concludes with his ***DOT MATRIX GRAPHICS EDITOR*** on ***Page seven.***

I hope to print an article about downloading characters which you have designed yourself in a future LE'VZ.

(JD).

DOT MATRIX GRAPHICS by Larry Taylor

Whilst most EPSON printers and their innumerable emulators share a common set of print codes, there are often extensive variations to each printer command set. Competing brands, in an attempt to outdo the opposition and distinguish themselves from other printers in their price range, will offer various enhancements over a base EPSON model. These may include a choice of typefaces and printstyles, letter quality print, or even increased speed. Some of these improvements are achieved through hardware modifications, such as increasing the number of pins in the printhead, whilst others are due to the software installed in the printer's ROM.

One area where software differences between printers can be immediately noticed, is in the way a single character is printed on paper. Each character printed, consists of columns of dots in series. The number of columns, and in particular the number of dots in each column, will vary according to the capabilities of the printhead in each printer. Software can, however, make a difference to the final appearance of the character. My first EPSON compatible printer was a BMC BX-80, which eventually gave way to an OLYMPIA NP165. A simple comparison of characters printed by these two machines showed there was a very obvious difference. The dot columns printed by the BMC are close together, whilst those displayed by the OLYMPIA are slightly spaced. This results in a character printed by the BMC being marginally narrower than that created by the OLYMPIA. This difference in dot density, is due to the control, which the ROM software exercises over the data, which ultimately operates the printhead. Most EPSON type printers possess two, bit image modes, that allow the user to directly control, which pins are fired in the printhead. All the characters produced by a printer are created using these bit image facilities. However, because the printer stores the machine code driver routines and the character shape tables (these are sets of numbers, which determine a character's shape) in its own ROM, it can churn out its own predesigned shapes considerably faster, than it can the individual bit image data transmitted to it by a host computer. The use of an inbuilt RAM buffer and a facility for downloading character data to the printer is an attempt to partly overcome the speed limitations of dot image processing.

The term, bit image, may need some explanation. A byte of data on a computer, such as the VZ, consists of eight bits. Each of these individual bits can only be equal to one or zero. To correspond to this, a printhead, in its simplest form, consists of 8 pins arranged vertically. When a single byte of data is sent to the printhead, the value of the individual bits will determine which pins are fired. For example, if bit 4 is equal to one then pin 4 will produce a dot on the paper. This is often referred to as the printer's graphics mode, because it can be used to produce shapes drawn by the user. The size and shape of the image to be produced is limited only by the width of paper the printer can handle.

The two, bit image modes on most EPSON type printers are usually referred to as single or normal density and double density. These terms, basically refer to the number of dots that can be printed across the page. In double density mode, twice the number of dots can be printed across the page as there would be in single density, however, since the paper width is the same, the dots have to be much closer together, giving the resulting image a much darker appearance. The actual number of dots printed varies from printer to printer. The EPSON standard usually specifies 480 dots in single density mode and 960 dots in double density. My BMC BX-80, however, does not conform to this and chooses, instead, to use 640 dots and 1280 dots respectively. The OLYMPIA, on the other hand, whilst conforming to the EPSON original, additionally offers, a further four 8 pin bit image modes and two, which utilise a ninth pin. One of the 8 pin modes is referred to as quadruple density and can print 1920 dots across the page. As well, this printer allows for 640 dot and 1280 dot modes to be accessed. These modes are cryptically referred to as CRT graphics, which I can only assume stands for Cathode Ray Tube, since the manual doesn't tell me. Not being familiar with the screen resolution of oscilloscopes, I can only guess that these dot widths are necessary to allow the full width of such images to be dumped to the printer. Although these modes haven't been assigned the standard EPSON codes, it does show that the OLYMPIA can emulate the BMC, if necessary.

This lack of conformity is what caused problems for me, when I came to write the screen dump routines for the VZ-EPSON Printer Patch. As we all know, the MODE(1) screen, on the VZ, is 128 pixels wide and there can only be four colours on the screen at any one time. To print a representation of the screen on paper, it is necessary to first work out a dot image to stand for each differently coloured pixel. Green was most easily represented as blank, whilst red was displayed as completely black. Yellow had to be shown as a slightly lighter image than that displayed for blue. I then had to decide on how many dots wide, I would make each pixel image. To calculate this, the number of pixels, 128, is multiplied by the number of dots in each printed image and then displayed as a total. The simple mathematics is displayed below.

128 X 3 dots = 384 dots
128 X 4 dots = 512 dots

I was unaware of the differences between printers outlined above, so in my earlier versions of the patch I opted for a 4 dot width, which meant that the screen dump was 512 dots wide. Since my BMC was capable of a 640 dot width and I was well within that, I experienced no problems. Not so, those purchasers of the patch who owned EPSON type printers, which conformed to the 480 dot standard. These people discovered, to their dismay, as I did after buying the OLYMPIA, that when they did a screen dump, 32 dots or 8 pixels from the right hand side of their picture didn't fit on the page. It was therefore necessary to make a small change to later versions of the patch (Version 1.4 being the most recent), so that the pixel images used were only 3 dots wide. This gave dumps with a total dot width of 384 dots. Solving this problem was easy, but because of the difference in dot density between the BMC and OLYMPIA, screen dumps done on the BMC now appear too narrow. I cannot see any simple solution to this problem, as it is controlled by the software within each printer's ROM. Nevertheless, I hope that this has helped to answer some of the queries I have had from people concerning operation of the screen dump.

In this next section, I will attempt to explain how the standard bit image modes of an EPSON compatible printer can

be accessed from BASIC. Because the method used for either mode is very similar, our discussion will focus on single density dot graphics. Various printer manuals display the necessary code in one or more of the following ways.

ASCII	ESC	K	+	n1 + n2
Decimal	(27)D	K(75)D	n1	n2
	$[27]_{10}$	$[75]_{10}$	[n1]	[n2]
Hexidecimal	(1B)H	(4B)H	(n1)	(n2)
	$[1B]_{16}$	$[4B]_{16}$	[n1]	[n2]

The first two values [27] and [75] put the printer into normal density bit image mode. The next two values, n1 and n2 tell the printer how many bytes of graphic data will be transmitted. They are arranged in low byte, high byte order. For example if we were doing a screen dump, each line would require 384 bytes of data. The low byte and high byte can be calculated in this way.

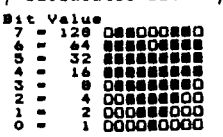
high byte n2 = INT(384 / 256)
low byte n1 = 384 - n2 * 256

Using this method n1 = 128 and n2 = 1. These values will, of course vary according to the number of bytes to be sent. What follows next, is a stream of graphics data, which, in the case of the example used above, will consist of 384 individual bytes. Provided the low byte, high byte values, when calculated out,

eg. no. of data bytes = n1 + 256 * n2

equals the number of graphics data bytes which follow, the design will be printed. If the printer does not respond by printing the graphic, it will usually mean that either the low byte - high byte values haven't been entered correctly, or that the printer has not yet received the expected number of data bytes and is waiting for them.

To illustrate the procedure, I will demonstrate how to print this heart shaped character ♥ using single density, bit image, dot graphics. This character consists of nine dot columns. Each column is represented by a single byte of data. In addition, every column is made up of eight rows, each of which is represented by a single bit within the byte of data. When reading a column from the bottom up we begin at bit 0, which has the value 1, and finish at bit 7, which is equal to 128. A single data byte is calculated by totalling these row values assigned to each of the dots printed in a column. Because the character consists of nine columns, it is represented by nine similarly calculated data bytes.



By thus totalling each column in turn, vertically, from left to right we arrive at the following byte values.

112, 248, 252, 126, 63, 126, 252, 248, 112

The number of data bytes to be sent to the printer to produce this particular character is nine. Represented in low byte - high byte form this is shown as,

low byte = 9
high byte = 0

So to produce the heart character, we send the following data to the printer.

Put printer in graphics mode :- 27,75,
Number data bytes (low byte - high byte) :- 9,0,
Data bytes :- 112,248,252,126,63,126,252,248,112

The easiest way to accomplish this from BASIC, would be as follows.

```
100 REM SEND EPSON CODE TO PUT PRINTER IN SINGLE DENSITY BIT
110 REM IMAGE MODE.
115 REM ************************************************
120     LPRINT CHR$(27);"K";
125 REM ************************************************
130 REM LOW BYTE - HIGH BYTE DATA TO TELL PRINTER HOW MANY
140 REM BYTES OF GRAPHICS DATA TO EXPECT.
145 REM ************************************************
150     DATA 9,0
155 REM ************************************************
160 REM NINE GRAPHICS DATA BYTES NECESSARY TO PRODUCE A
170 REM HEART SHAPED CHARACTER.
175 REM ************************************************
180     DATA 112,248,252,126,63,126,252,248,112
185 REM ************************************************
190 REM SOME VALUES SUCH AS 0,10,11,12,13 AND THE INVERSE
200 REM AND GRAPHICS CHARACTER VALUES FROM 128 TO 255 WON'T
210 REM REACH THE PRINTER IF WE LPRINT THEM, SO SEND THE LOW
220 REM BYTE - HIGH BYTE AND NINE DATA BYTES OUT THE PORTS.
225 REM ************************************************
230     FOR T=1 TO 11:READ D: GOSUB 300:NEXT
240     END
245 REM ************************************************
250 REM READ PORT ZERO TO CHECK IF PRINTER IS READY. WHEN
260 REM IT IS, SEND DATA OUT PORTS 13 AND 14.
265 REM ************************************************
300     IF (INP(0)AND1)<>0 THEN 300 ELSE OUT 13,D:OUT 14,D
310     RETURN
320 REM ************************************************
```

To further assist those of you, who may still be experiencing difficulty in getting your EPSON type printer to produce dot graphics, I have written a short DOT MATRIX GRAPHICS EDITOR in BASIC. This program enables a design to be drawn on the screen by moving a cursor within a grid, which is 8 rows high and 11 columns wide. Once the design is completed and the RETURN key pressed, the graphics data is automatically tabulated by the program. Following this, the printer is set to single density bit image mode and the eleven bytes of graphics data are sent to the printer, preceded, of course by the low byte - high byte equivalent of the number eleven.

Once the concept of producing images on the printer, using dot graphics, has been fully grasped and you have experienced the first joys of success, there remains only to experiment with your own designs. There are two ways, in which you can create your images prior to transferring them to the printer. The first is to do a drawing on squared paper, calculate the column values, create data statements and then transmit them to the printer. The second, possibly easier method, depending on the resolution required, is to use an EDITOR to draw on the HIRES screen. On completion, it can read the screen, compute the data and send it to your printer. Having used both approaches, I find an EDITOR easier. Don't despair if you don't experience immediate success, my early frustrations culminated in the successful creation of the VZ-EPSON Printer Patch.

GOTO PAGE 7 -->

```
100 REM################################
110 REM# DOT MATRIX GRAPHICS EDITOR #
120 REM#      BY  LARRY TAYLOR      #
130 REM################################
140 REM
150 REM##########################-
160 REM#  EDITOR CONTROL KEYS  #
170 REM##########################
180 REM#  [M]   - CURSOR LEFT  #
190 REM#  [,]   - CURSOR RIGHT #
200 REM#  [.]   - CURSOR UP    #
210 REM#[SPACE] - CURSOR DOWN  #
220 REM#  [M]   - CURSOR LEFT  #
230 REM#  [L]   - INSERT BLOCK #
240 REM#  [;]   - RUBOUT BLOCK #
250 REM#[RETURN]- PRINT SHAPE  #
260 REM#  [C]   - CLEAR SCREEN #
270 REM##########################
280 REM
290 REM##########################
300 REM# INITIALISE VARIABLES  #
310 REM##########################
320    P=28672:D=60:E=207:DIMV(10)
330    POKE30744,0:CLS:COLOR2
340 REM##########################
350 REM# SET UP EDITOR DISPLAY #
360 REM##########################
370    PRINT@  0,"█▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀▀█";
380    PRINT@ 32,"█  DOT MATRIX GRAPHICS EDITOR  █";
390    PRINT@ 64,"█▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄█";
400    FORT=3TO14:POKEP+T*32,154:POKEP+T*32+31,149:NEXT
410    PRINT@480,"█▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄▄";:POKEP+511,151
420    P=28844:PRINT@130,"BIT VALUE███████████"
430    FOR T=7 TO 0STEP-1
440    PRINT@162+(7-T)*32,USING"##   ";T;:PRINTUSING"### ";2^T;
450    PRINT"█           █":NEXT
460    PRINT@427,"█████████████"
470    M=X+Y*32:V=PEEK(P+M)
480 REM###################################
490 REM# READ KEYPRESS AND FLASH CURSOR #
500 REM###################################
510    A$=INKEY$:POKEP+M,V:FORT=1TOD:NEXT:POKEP+M,E
520    FORT=1TOD:NEXT:A$=INKEY$:IFA$=""THEN510
530    A=ASC(A$):IFA=67THENRUN
540    IFA=13THEN560
550    IFA<>32ANDA<>44ANDA<>46ANDA<>59ANDA<>76ANDA<>77 THEN510
560    POKEP+M,V:FORT=1TOD:NEXT
570    IFA$=CHR$(13)THENGOSUB690
580    IFA$="M":X=X-1:IFX<0 :X=0
590    IFA$=",":X=X+1:IFX>10:X=10
600    IFA$=".":Y=Y-1:IFY<0 :Y=0
610    IFA$=" ":Y=Y+1:IFY>7 :Y=7
620    M=X+Y*32
630    IFA$="L":POKEP+M,128
640    IFA$=";":POKEP+M,96
650    V=PEEK(P+M):GOTO510
660 REM##########################
670 REM# CALCULATE DATA VALUES #
680 REM##########################
690    FORX=0TO10:FORY=0TO7:M=X+(7-Y)*32
700    IFPEEK(P+M)<>128THEN720
710    V(X)=V(X)+2^Y
720    NEXT:NEXT
730 REM##########################
740 REM#  PRINT GRAPHIC IMAGE  #
750 REM##########################
760    LPRINTCHR$(27);"K";
770    D=11:GOSUB790:D=0:GOSUB790
780    FORT=0TO10:D=V(T):V(T)=0:GOSUB790:NEXT:X=0:Y=0:RETURN
790    IF(INP(0)AND1)<>0THEN790ELSEOUT13,D:OUT14,D:RETURN
```

END

*** IN BRIEF ***

In the U.S.A President Reagan gave ***Compac*** chief Rod Canion the Commerce Departmant's "E" Award for excellence in exports and export sales.

Sydney firm ***Quantum Technology*** has beaten overseas manufacturers for a contract to build a new Braille computer.

The late Ben Lexon's former name was Bob Miller. He chose his new name by computer.

NASA has buried tens of thousands of computer tapes underground over a couple of decades. One area is the size of 18 footy grounds.

A group of Australian electronic businesses have purchased a big share of ***Microbee*** shares.

* BUBBLE SORTING *

BY GORDON BROWELL

Continuing with Gordon's series of *sorting* contributions. Thanks Gordon.

(J.D>)

BUBBLE SORT

BUBBLE SORT is also called RIPPLE SORT or a title with the word WAVE in it. This is the most popular system. You most likely already have programs with this sort of sort in it. MICRO DATA is one such program. This time, in addition to the suit of playing cards you will also need a coin. Lay the 13 cards in random order in a row on the table. Place your coin below the leftmost card, card no.1. Compare the COINCARD with its neighbor on its right. If the COINCARD is a higher card than its neighbor then swap them over. Otherwise leave them as they are. Now move the coin up to the 2nd card (which may be the same card as before if you made a swap). Then compare this COINCARD with its righthand neighbor and again swap if necessary. Continue moving and comparing until the coin has reached the 12th position. By this time the KING will have reached 13th place. The ACE is a 1. Take the coin back to the beginning again and begin another PASS. This time the QUEEN will arrive at position 12 when the coin reaches the 11th position. Keep going, reducing the PASS by one each time, until all the cards are sorted. See, it was quite easy, after all.

In computer language a PASS would look like this...

```
FORI=1TO12:IFZ$(I)>Z$(I+1)THENSWAP:NEXT
```

I know there is no command in a VeeZed called SWAP, but there is a short routine which does the same thing. The main thing, at this point, is that we will need an OUTER loop to control this one and to reduce the PASS by one each time. How about this...

```
FORJ=12TO0STEP-1
FORI=0TOJ-1
IFZ$(I)>Z$(I+1)THENT$=Z$(I):Z$(I)=Z$(I+1):Z$(I+1)=T$
NEXT:NEXT:RETURN
```

You will see that the OUTER loop, of these Nested Loops, runs backwards from 12 to 0. The INNER loop, therefore, being J—1 must run for 12 the first time, then for 11, then for 10 and so on. Just what we wanted, eh?

Also notice that we have used a TEMPorary String Variable in which to park the data so that it won't get lost while we do a swap. Being a sub-routine RETURN goes back to PRINT the sorted list. Here then is an EXAMPLE PROGRAM...

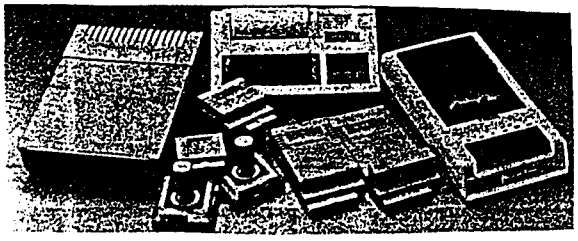
BUBBLE SORT

A MICRO MAGIC program. August 1986.

```
100 CLEAR2000:DIMA$(100):N=1
110 INPUT"NAME";A$(N):IFA$(N)=""THEN120ELSEN=N+1:GOTO110
120 N=N-1
130 FORP=1TON-1:FORI=1TON-P
140 IFA$(I)>A$(I+1)NEXTT$=A$(I):A$(I)=A$(I+1):A$(I+1)=T$
150 NEXT:NEXT

200 FORI=1TON:PRINTA$(I):NEXT
210 PRINT"END OF LIST":PRINT
220 GOTO100
```

When finished entering items to be listed just press RETURN without making an entry. The blank String Variable will be automatically cancelled.



Studio Ad Lib

* PRINTER INTERFACE * UNITS

BY LAURIE WHEETON

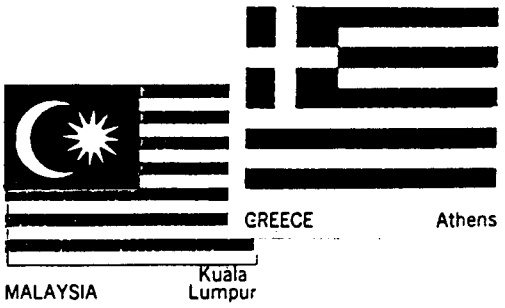
Laurie opened two printer interface units to draw the two circuits on *page nine.*

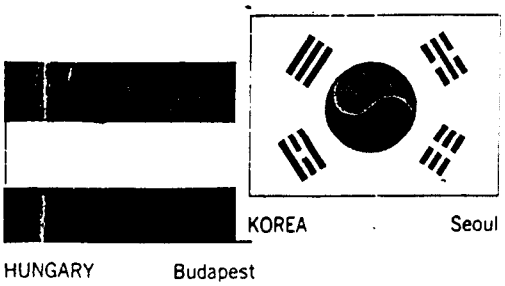
The first with the *G* prefix appears to be the same as printed in the VZ300 Technical Manual. The second unit with the *D* prefix is a little different than the unit as printed in the same Technical Manual on its following page.

So there appears to be at least three different interfaces. If you are writing software for sale, ensure that you take steps to ensure it will work for all units.

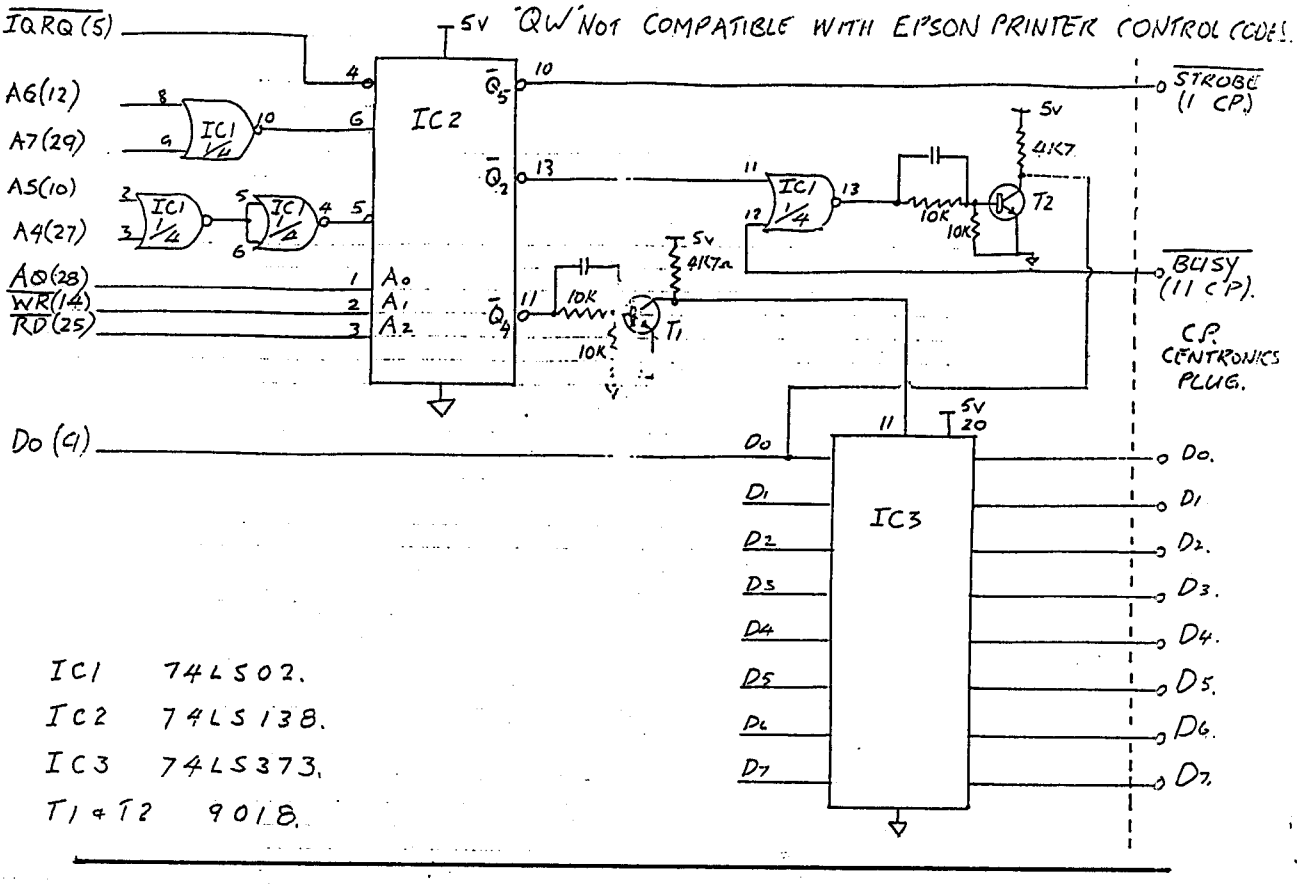
GOTO PAGE 9

(J.D>)



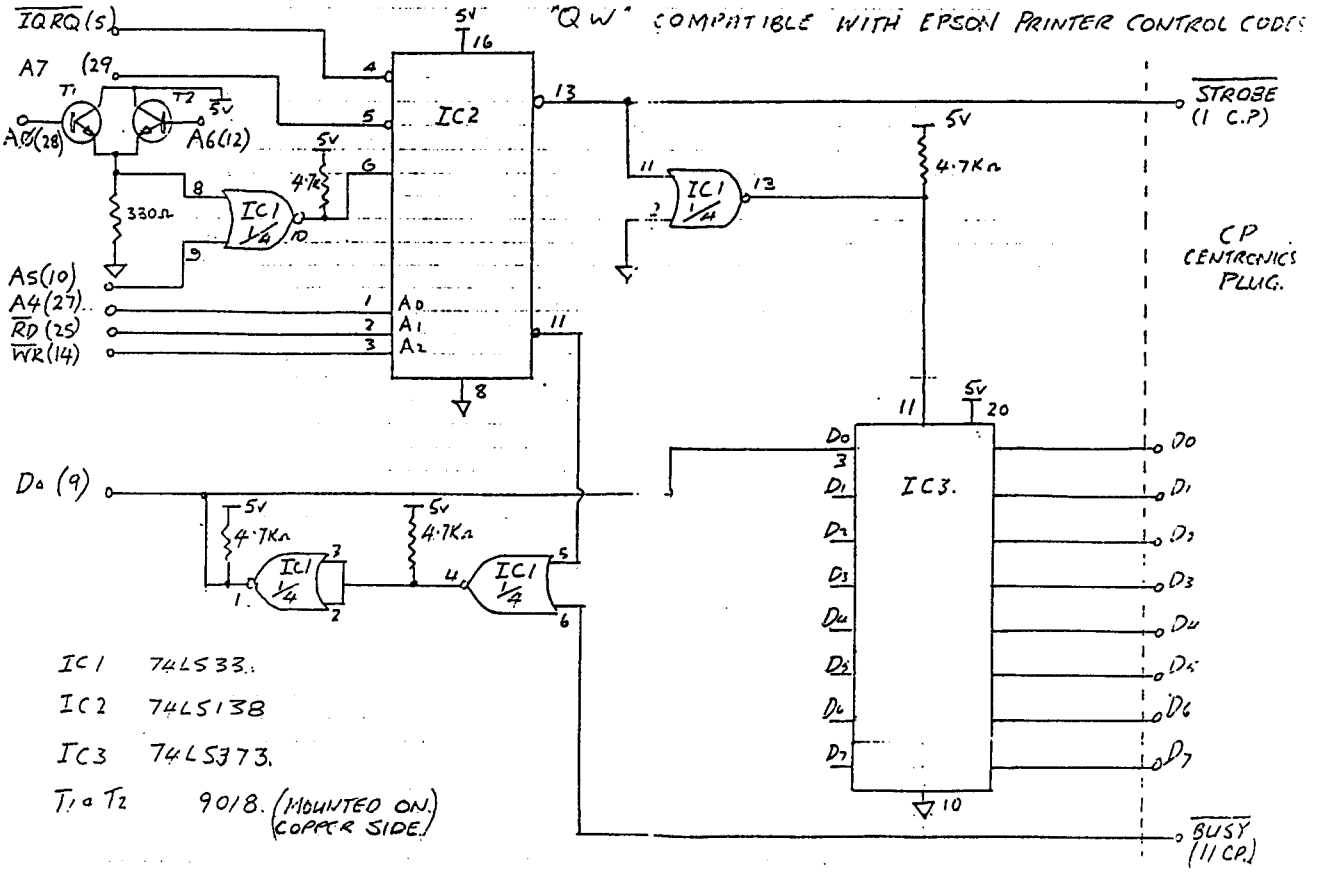


VZ 300 PRINTER INTERFACE P.C.B. 700358 G



IC1 74LS02.
IC2 74LS138.
IC3 74LS373.
T1 & T2 9018.

VZ 200 PRINTER INTERFACE P.C.B 700358D



IC1 74LS33.
IC2 74LS138
IC3 74LS373.
T1 & T2 9018. (MOUNTED ON COPPER SIDE.)

* * MORE ABOUT PRINTERS * *

HEX DUMPS IN PARTICULAR.

Some people who own certain printers may not know what this facility is for, so I hope to explain.

Many or all of the newer printers with ***Epson/IBM*** capability have this ***HEX DUMP*** facility. It is rarely used but never-the-less is an invaluable aid to debugging printer, printer interface or computer problems. HEX DUMP is normaly switched on by manualy switching the printer, usually before 240V is supplied to it.

Some printers print a heading of some description and then wait for data to be sent. The software in use can now be set to ***print*** or ***printer*** and so the data/text is sent to the printer. The information printed is usualy the Hexidecimal or ASCII values of the data/text.

On the right side of the paper is printed the actual text complete with spaces etc. With the ***Citizen 120-D*** printer, the spaces are represented by a small sp, Carriage Return by small cr, Line Feed by small lf and so on. To see these characters it is necessary to use a small magnifying glass. See my demonstration print. The Hex part has been photocopy-reduced so it can be fitted on the LE'VZ page.

The two sections are then checked, character by character to see what ***exactly*** was sent to the printer.

I have printed the ***HEX DUMP*** below from the very start which includes the control codes sent to the printer to the end of the first sentance, the last word being "explain".

MAL PRINT ***

§¾§^11§¾^21§§§§§§§§§§*§*§MORE§AB
OUT§PRINTERS§*§*§§§§§§^20§¾§¾§4
§E§§§§§§§§HEX§DUMPS§IN§PARTICULA
R.§^10§¾§¾§5§F§§§§O§§§§§Some§§p
eople§§who§§own§§certain§printer
s§may§not§¾know§what§this§facili
ty§is§for,§so§I§hope§to§explain.

<CITIZEN> 120-D *** HEXA DECI

```
(0000) 0D 0A 1B 7E 31 31 20 1B 7E 32 31 20 20 20 20 20 20 20 0E 20 20 2A 20 2A 20 4D 4F 52 45 20 41 42
(0020) 4F 55 54 20 50 52 49 4E 54 45 52 53 20 2A 20 2A 20 20 20 20 20 20 1B 7E 32 30 20 0D 0A 0D 0A 1B 34
(0040) 1B 45 20 20 20 20 20 20 20 20 48 45 58 20 44 55 4D 50 53 20 49 4E 20 50 41 52 54 49 43 55 4C 41
(0060) 52 2E 1B 7E 31 30 20 0D 0A 0D 0A 1B 35 1B 46 20 0F 20 1B 30 20 20 20 20 20 53 6F 6D 65 20 20 70
(0080) 65 6F 70 6C 65 20 20 77 68 6F 20 20 6F 77 6E 20 20 63 65 72 74 61 69 6E 20 70 72 69 6E 74 65 72
(00A0) 73 20 6D 61 79 20 6E 6F 74 0D 0A 6B 6E 6F 77 20 77 68 61 74 20 74 68 69 73 20 66 61 63 69 6C 69
(00C0) 74 79 20 69 73 20 66 6F 72 2C 20 73 6F 20 49 20 68 6F 70 65 20 74 6F 20 65 78 70 6C 61 69 6E 2E
```

```
4 REM ################
6 REM #  AGE PUZZLE  #
8 REM ################
10 CLS
12 INPUT"ENTER PRODUCT OF 3 AGES";B :CLS
13 A=INT(B/2)
15 A1=INT(SQR(B))+1
16 A2=INT(SQR(A1))+1
17 PRINT"  X        Y        Z        SUM"
18 PRINTTAB(2)"1";:PRINTTAB(10)"1";:PRINTTAB(17)B;
19 PRINTTAB(25)B+2
20 FORX=1TOA2
30 FORY=1TOA1
40 FORZ=1TOA/X
42 S=X+Y+Z
44 P=X*Y*Z
45 IFX>YTHEN80
48 IFY>ZTHEN80
50 IFP=BTHENPRINTTAB(1)X;:PRINTTAB(9)Y;:PRINTTAB(17)Z;:PRINTTAB(25)S
80 NEXT
90 NEXT
100 NEXT
110 PRINT@492,"[illegible]";
120 I$=INKEY$:I$=INKEY$
130 I$=INKEY$:IFI$=""THEN130
140 IFI$<>" "THEN130
150 GOTO10
```

AGE PUZZLE

BY KEN BRAZIER.

This is an interesting little programme to get your grey matter into action.

A MAN ASKED HIS FRIEND TO WORK OUT THE AGES OF HIS 3 DAUGHTERS. THE CLUES WERE ,THE PRODUCT OF THEIR AGES WAS 72. THE SUM OF THEIR AGES WAS THE SAME AS THE HOUSE NUMBER. HIS FRIEND LOOKED AT THE HOUSE NUMBER AND ASKED FOR ANOTHER CLUE. HE WAS TOLD THE ELDEST DAUGHTER LIKED STRAWBERRY JAM.

(ALL AGES WERE WHOLE NUMBERS)

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.

CURRENT ISSUE price is A$2.00 which includes surface/air postage within Australia and Air Mail to New Zealand. If you require more than one copy at one time, extra money must be sent to cover postage.

LE'VZ IS (C) COPYRIGHT.

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 GENERL 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. Als photos of your equipment would interest others. There is a litti problem here though as different photo copyiers reproduce certair 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 E&F 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.

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

Muchas Gracias.

INFORMATION CONTACTS.

Here are some other folk who you can contact. Always include a SASE. if you require a written reply. If you don't live in the same country, send a couple of International Reply Coupons. These are available at Post Offices througout the world. Please use good judgement if you telephone, perhaps not on Sundays. Check with the person concerned.

Graphics, M/L, printer info, educational.
Mr.Larry Taylor, 4 Columbia Court, SPRINGWOOD. QLD. 4127. 'phone (07)208 1258.

M/L, hardware, BASIC programming and his special list of all types of info.
Mr.Bob Kitch, 7 Eurella St., KENMORE. QLD. 4069. 'phone (07)378 3745.

Software list.
Mr.Eddie Tomes, 3 Kilkenny St., CAPALABA. QLD. 4157. 'phone (07)390 2797.

General info.
Mr.Stan Noble, 307 Mt.Crosby Rd., CHUWAR. QLD. 'phone (07)281 7854.

Communications, Modems, RTTY.
Mr.Irving Speckman, 78 Waima Crescent, TITIRANGI. AUCKLAND.
New Zealand.

RTTY Units.
Mr.Col Paton. VK4BCP. 225 Pallas St., MARYBOROUGH. QLD. 4650
'phone (075)221 090.

Chip 8 programming.
Mr.Jeremy Lee, c/o P.O. Box 221, ASHGROVE. QLD. 4060
'phone (07)379 7988.

THE.... U.S.A.. SCENE.....

My observations during our U.S.A. and Mexico vacation.

Although our holiday was not a business trip, I did make a few observations of the general electronics and computer scene.

These observations cover a fair bit of the U.S.A. as we travelled in California, Florida, North Carolina, Washington D.C., Colorado, Arizona, Utah and Nevada.

Firstly, it is the land of *Hi-tech*. In one aircraft we flew to Atlanta in, it was possible to telephone by radio anywhere in the world, although it did depend on the weather.

When ringing a long distance phone, same as our STD, one is told by a recorded voice the cost per time segment. *EPCOT* in Florida is an educational fun park that is indescribable. This is where new technology of all types is implimented. By that I mean all facits of life, not just electronics. Thousands of computers must control the place.

It gives one an idea how advanced in *hi-tech* the U.S.A. is.

At least Brisbane's *WORLD EXPO 1988* throws a little light on the subject.

Prices of everything are about half of ours for secondary and primary products. EXCEPT that of homes and some South East Asian products and believe it or not — Floppy discs.

There appears little interest in many "normal" hobbies. I did not see one hobby electronics shop, other than a few *TANDY/RADIO SHACK* stores. I suppose Americans have more interesting things to do than tinker with a soldering iron, sewing machine, wood sander and so on. Just go and buy what is required.

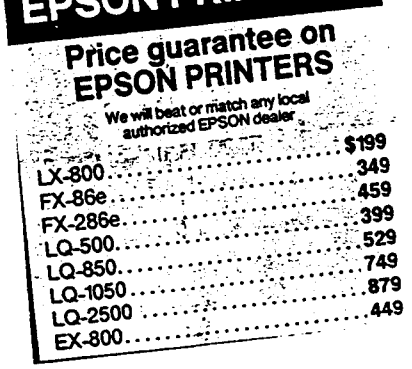
I visited many bookstores and noted the only books and magazines availabe were for *IBM and IBM Compatables, APPLE, ATARI, TRS 80, and COMMODORE*. Our bookstores and newsagents are awash with amateur radio, audio, video, electronics, model planes, photography, stamps, rock magazines and books etc. Boy we really do cater for the bottom of the range hobbyest. I'm not saying whether that's good or bad. Just be very thankful that we have such a choice.

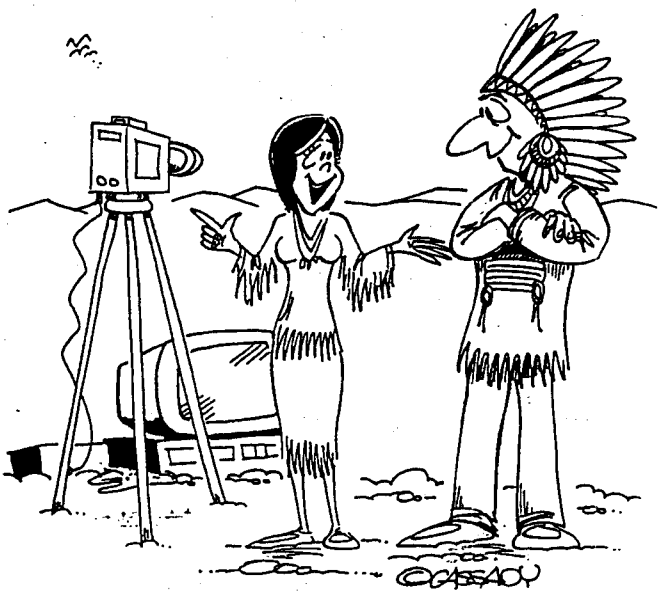
About prices again. Well, just read a few of the adverts that are printed here. An *APPLE II GS* at US$799.00. Wow!!!

BUT — DON'T ORDER ANY ITEMS FROM US!!!!!

In Florida we visited a big store like K-MART, where all the electronic stock could be tested by yourself, without any shop assistant hounding you. The items were all laid out and chained to the shelves. Can you imagine the noise caused by prospective purchasers of printers, typewriters (electric of course), calculators, computers being pounded and so on. A shoppers paradise!!

(J.D.)





"This will record incoming smoke signals while we're out."

Some however, did receive him and believed in Him; so he gave them the right to become God's children.

John 1:12

* * NEWS NEWS * *

While I have been away a lot has happened around the VZ ridges.

Although the VZ is no longer stocked by D.S.Electronics, there is still a flow of software and hardware continuing to emerge.

HERE ARE A FEW.

A new high resolution drawing/text unit is available from Mathew Taylor of 38 Fishing Point Rd., RATHMINES NSW. 2283.

Two new data base units. One from Scott Le Brun, 59 Brentwood Drive, WANTIRNA VIC 3152.

The other from Mark Harwood, P.O. Box 154, DURAL NSW 2158.

A disc disassembler unit from Peter Hickman, P.O. Box 8, HERRINGTON NSW 2760.

An extended DOS BASIC unit from Dave Mitchell, 24 Elphinstone St., NORTH ROCKHAMPTON QLD 4701.

In the magazine, A.E.M April 1988 there is a constructional article to allow 256*192 graphics and upper/lower case text.

May 1988 *E.T.I.* describes an EPROM programmer.

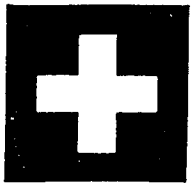
June 1988 *E.T.I.* has a constructional article for a Data Logger.

I must also mention a project called *"SOFT START FACILITY FOR THE VZ-200 VZ-300"* in *VZ USER* March/April 1988.

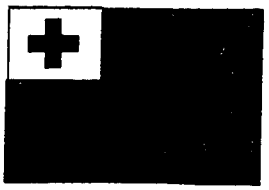
Another interesting hardware project titled *128K SIDEWAYS RAM* by Joe Leon in the May/June 1988 issue of the *H.V.VZ.U.G* Journal.

I remind folk that the other VZ user groups as mentioned elswhere in this *LE'VZ* publish newsletters/journals so feel free to contact them.

(LE'VZ).



SWITZERLAND Bern

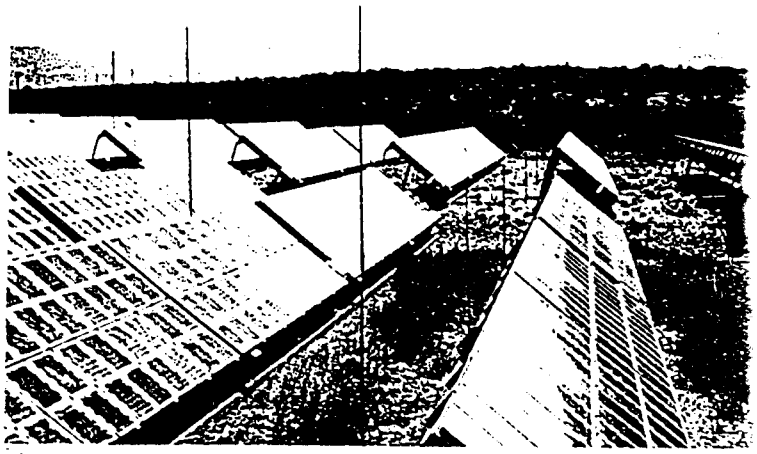


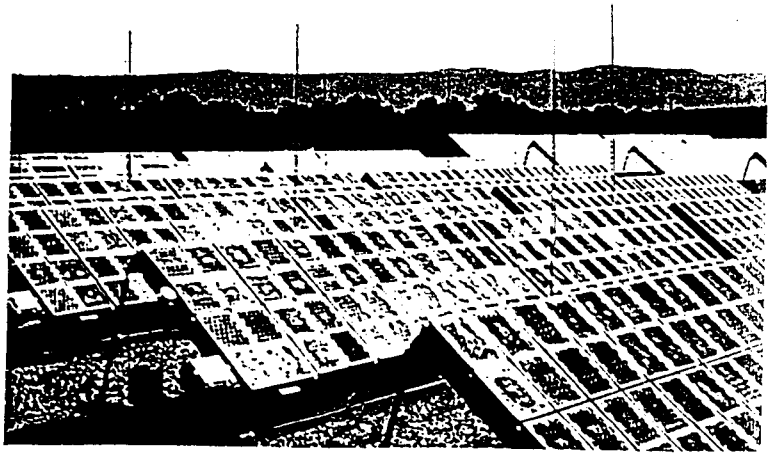
TONGA Nukualofa

SOLAR ARRAY.

One National Park we visited in Utah contains some natural arches or bridges. The visitor centre about the size of two houses and the adjoining motor-home camp ground obtained all its mains power (110V) from the array of *solar-cells* as pictured. Quite interesting.

(LE'VZ).





BVZUW

Sorry to say but there is no news from this Group this issue. It is beyond my control that no one took any notes from the February Workshop onwards.

(J.D.)

SOFTWARE FOR SALE FROM VSOFTWAREZ

39 Agnes St., TOOWONG. QLD. 4066. AUSTRALIA. (07) 371 3707.

AUGUST 1988.

All prices are correct at time of printing, but may change without notice. All articles available while stocks last. All prices in A$.
All tape software includes postage up to four tapes.
When ordering software, always state := which computer VZ200 or VZ300 , if you have an expansion RAM unit , and if you have a disc drive system connected or denote as below.

VZ1 = unexpanded VZ200. VZ2 = unexpanded VZ300.
VZ3 = expanded VZ200. VZ4 = expanded VZ300.

IE. TB15 = Tape only unit of B15. DB5 = Disc only unit of B5.
T/DE4 = Tape or Disc unit available of E4. TU4 = unit only available on Tape of U4. DU22 = unit only available on Disc of U22.
The price stated is for a Tape unit. If a Disc unit is required, add $5.00. to the Tape price. The price of a Disc unit is as stated.

We accept BANKCARD and VISACARD, as well as bank, building society, credit union, private cheques, or Aust Post money orders.
Make cheques payable to J.D'ALTON or VSOFTWAREZ.

* * * NEW SOFTWARE * * *

DTG58. FACTORY. $15.00. VZ3-VZ4.
This is another one of Larry taylors educational/game units. It is a problem solving eductional/game for all ages. The main aim is to set up a factory to duplicate a product which has been designed by the VZ or someone. Eight machines can be used to ROTATE, STRIPE and PUNCH a blank square into a finished product. All in High Resolution.

DU56. DISKOPS4. $10.00. VZ3-VZ4.
This is actually called DISKOPS4 + 2. It superceedes DU47 DISKOPS2 AND DU47A DISKOPS2 which are now Public Domain at the same price of $10.00.
There are three separate utilities on the disc, and are for use with the DSE. Editor Assembler unit. There are eleven additional commands. Instructions are included. DISKOPS4 + 2 patches in permanently with ED/ASS. It then allows LOADing, SAVEing of source code and BSAVEing object code to/from disc. BSAVEing is the same as TO: for tape.
It also includes the normal disc BASIC commands. If a disc error occurs, then DISKOPS4 + 2 BASIC is entered. ASS is to enable the return to the ED/ASS. BASIC does the reverse.
Users of DISKOPS1 and 2 are also catered for.

DB57. QUICKWRITE V4 $40.00. VZ3-VZ4.
This new version DOES NOT replace QUICKWRITE V3. The main difference being that V4 allows the user to imbed special character codes ANYWHERE in the text. This includes a single word or even part of a word, anywhere in a line of text. If you refer to LE'VZ #17 on page 14, I printed a short article about how to use the printer control codes for QW V3. The last one directs the printer to print in three styles, using thirteen codes. With QW V4 these are designed by the user and are represented by A SINGLE CODE CHARACTER and saved onto disc. A whole set of fonts can be built up by the user. I have been testing it for some months now in the publishing of the last few LE'VZ magazines.
QW V4 will also recognise the QW V3 square bracketed control codes. Printing a section of the text is also allowable, even one word.
KILL and RETRIEVE are additional Disc commands. Better editing/viewing facilities. Scrolling forward, backward, to beginning and end of text is easy to achieve.
Purchasers of QW V3 can buy QW V4 at a discounted price of AUD$20.00. An instruction booklet is of course included.

QUICKWRITE CAN ONLY BE PURCHASED FROM US.

If anyone requires a short description of any of our software, 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:-
Mr.Gavin Williamson, 20A Brunker Rd., BROADMEADOW. NSW. 2292
'Phone (049) 621 678.

bankcard VISA

+ EXISTING SOFTWARE.

D/TU2	EDITOR/ASSEMBLER	$ 20.00. VZ3-VZ4.
D/TB1	CASH BOOK LEDGER	$ 20.00. VZ3-VZ4.
TU4	COLOUR GRAPHICS	$ 10.00. VZ3-VZ4.
D/TE1	KEYBOARD	$ 8.00. VZ1-VZ4.
D/TE2	WORDMATCHING	Deleted.
D/TE3	MEATPIES	$ 10.00. VZ3-VZ4.
D/TU3	UTILITYS	$ 15.00. VZ2-VZ4.
TU5	WEAVING DRAFTS	$ 10.00. VZ1-VZ4.
D/TE4	MATHS COUNTDOWN	$ 10.00. VZ3-VZ4.
D/TE5	COORDINATES	$ 10.00. VZ2-VZ4.
D/TE6	TOWER of HANOI	$ 8.00. VZ1-VZ4.
D/TE7	MICROSCOPE	$ 8.00. VZ3-VZ4.
D/TE8	BLOCK PUZZLER	$ 10.00. VZ1-VZ4.
TE20	PLUS and MINUS	$ 10.00. VZ1-VZ4.
TE24	MATHS	$ 15.00. VZ3-VZ4.
TE25	QUEENSLAND	$ 10.00. VZ1-VZ4.
TE27	EUROPEAN CAPITALS	$ 10.00. VZ1-VZ4.
TE30	CAMPING	$ 10.00. VZ1-VZ4.
D/TG2	MANSION and NOVA	Deleted.
D/TG3	VZ MONOPOLY.	Deleted.
TU12	SEARCHTAPE	Deleted.
D/TG13	SCOTLAND YARD	$ 12.50. VZ3-VZ4.
DB4	LE'VZ D'BASE	$ 98.00. VZ3-VZ4.
TB15	DATABASE-VZ	$ 25.00. VZ3-VZ4.
TG35	HAUNTED MANSION	$ 12.50. VZ3-VZ4.
TU6	VZ EXTENDED BASIC	$ 20.00. VZ1-VZ4.
TU7	PROTECT	Deleted.
TU8	CMERGE/DELETE/REN	Deleted.
TU9	MONITOR DEBUGGER	$ 25.00. VZ1-VZ4.
This new version finds VZ memory size itself.		
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.
T/DG38	WORDSQUARES.	$ 10.00. VZ2-VZ4.
T/DG39	COMPUTER MONOPOLY.	Deleted.
T/DG40	TRIVIAL CULT.	$ 15.00. VZ2-VZ4.
T/DG41	SCOTLAND YARD 2.	$ 15.00. VZ3-VZ4.
DB5	LE'VZSTATEMENT.	$185.00. VZ4.
DB16	CHEQUE LEDGER D.	$ 60.00. VZ3-VZ4.
D/TU19	COPY/PROTECT.	$ 30.00. VZ1-VZ4.
DU20	DISC GUARD.	$ 60.00. VZ1-VZ4.
T/DU21	VZ-EPSON PRINT/P.	Deleted.
DU22	DISK COPY.	$ 10.00. VZ1-VZ4.
D/TU48	FILESEARCH.	
D/TG51	BLOCK 1.	$ 15.00. VZ2-VZ4.
DPD1	PUBLIC DOMAIN.	$ 10.00. VZ1-VZ4.
DPD2	PUBLIC DOMAIN.	$ 10.00. VZ1-VZ4.

* NEW SOFTWARE *

D/TG44	MONOPOLY.	$ 17.00. VZ3-VZ4.
D/TG45	MONOPOLY.	$ 19.50. VZ4.
D/TG50	ESCAPE RIVER.	$ 15.00. VZ3-VZ4.
DB46	QUICKWRITE.	$ 40.00. VZ3-VZ4.
DU47	DISKOPS1.	$ 10.00. VZ3.
DU47A	DISKOPS2.	$ 10.00. VZ4.
D/TG42	AIRTRAFFIC CONTROLLER.	$20.00. VZ3-VZ4.
D/TG43	LEARJET.	$ 20.00. VZ3-VZ4.
D/TU49	VZ-EPSON PRINT/PATCH.	$ 15.00. VZ1-VZ4.
D/TG54	GOLF.	$ 15.00. VZ3-VZ4.
DU1	CONVERT2.	$ nil VZ3-VZ4.
See DB46 QUICKWRITE.		
D/TG53	GALACTIC EMPIRES.	$ 15.00 VZ3-VZ4.
D/TE10	SNERTLE.	$ 10.00. VZ2-VZ4.
D/TG51	BLOCK 1.	$ 15.00. VZ2-VZ4.
D/TG52	SOLO BATTLESHIPS.	$ 15.00. VZ2-VZ4.
D/U56	DISKOPS4 +2.	$ 10.00. VZ3-VZ4.
DB57	QUICKWRITE V4.	$ 40.00. VZ3-VZ4.
D/TG58	FACTORY.	$ 40.00. VZ4.

* QUICKWRITE WORDPROCESSOR *

NEW VERSION V4.

Version V4 does not replace Version V3. V4 is a little more complicated to use *but has more* facilities.

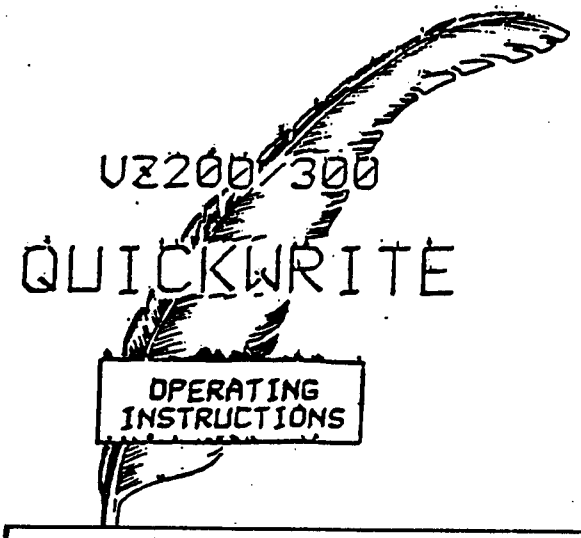
The main one being that printer print styles, often wrongly called fonts, can be changed anywhere in the data/text. This means even part of a word.

Another feature is the ability to scroll up and down, to start or end of the text. This is rather small to read but it demonstrates *what can be done.*

This is printed by a CITIZEN 120 D printer which can print *in the* mode called inversed.

Price A$40.00.

Only available from VSOFTWAREZ
39 Agnes St., TOOWONG. QLD. 4066.
AUSTRALIA.
Phone (07) 371 3707.



FOR SALE

A complete system with various programme tapes, including:-
VZ300 Disc Database programme
One VZ300 computer
16K RAM pack
Disc drive with controller
VZ data-cassette.
Books and instructional manuals.

Contact:-
Mr Ross Kent, M/S 305, BUNDABERG. QLD. 4670.
Phone (071) 793 243.

AUD$450.00 THE LOT.

A batch of programme tapes.
These are from a LE'VZ reader.
There are twenty altogether. Utilities, Games, Business etc.
All original, NOT pirated.
Too many to list. A$5.00 used each.
Contact us:-
VSOFTWAREZ, address elsewhere.

Date .....19..... Code # if known ..... This LE'VZ number is 20.
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 SLIP *****

For my records I request all OOPs (Oners-Operators-Programmers) who have not recently sent me this data to please complete, cut out and send back at some time. 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 1988. Items available while stocks last.
There is NO WARRANTY on used items, but all are tested OK.

C10 blank tapes	new	$ 6.50 for five.
C20 blank tapes	new	$ 7.00 for five.
Floppy discs NASHUA DDSS bulk, so they are not in packs.	new	$ 13.00 for ten,

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 elswhere 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.
VZ200VZ300 Assembly Language Programming Manual for Beginners by Steve Olney. new $ 25.00 each.

OTHER VZ USER GROUPS & CLUBS.

AUSTRALIA.

VZ USER.
MR Mark Harwood, P.O. Box 154, DURAL. NSW. 2158.

VZ DOWN UNDER.
MR George Seegie, 5 Cameron Court, WANTIRNA. VIC. 3152.

HUNTER VALLEY VZ USERS GROUP.
C/O P.O. Box 161, Jesmond. JESMOND. NSW. 2299.

WAVZ ENTHUSIASTS GROUP.
MR Graeme Bywater, P.O. Box 388, MORLEY. WA. 6062.

NEW ZEALAND.

CHRISTCHURCH VZ USERS GROUP.
MR Daniel Ayers, 188 Langdons Rd., CHRISTCHURCH. NZ.

VZ LINK.
MR Peter Hill, P.O.Box 1972 C.P.O. AUCKLAND. NZ.