LE`VZ

200/300 OOP

Happy Birthday!

3

Editorial

Olla Amigos.

Yes, another change to LE'VZ 200/300 OOP. The price is now A$2.00 per copy, but there are more pages with more information, help, hints, programmes etc. I hope YOU like this and future LE'VZs. With special guidelines for contributors to follow, it will make life a bit easier for me. OOPs who have between $1.00 and $1.99 will still receive this issue, as a special change of price gesture.

Also this #16 issue celebrates THREE YEARS of its publication. Happy birthday LE'VZ 200/300 OOP.

I hope to keep a section in each issue for news about our new Workshop group which is being taken care of by Mr. Bob Jones. See page 17 and 18.

Please try to go along to the afternoons and help it grow and grow. You may even learn something, and I am sure you will be able to contribute in some way. Anything of real interest will be printed in LE'VZ so that folk who are out of Brisbane will be kept abreast with programmes, news and information. By the same token, if you are visiting Brisbane you are very welcome to attend.

There is a bit of a "vacuum" created by the departure from the DSE. Hotline in Sydney of Mr.Jamie Perry. He was a very good contact and I hope (don't we all?) that his old position has been filled by another keen VZ computerist.

As you should all know by now, Brisbane is gearing up to hold the WORLD EXPO 1988, from April 1988 to September 1988. We hope to "cook something up" specially during that time. If anyone has any ideas, please let us know. I may print something about it in the next LE'VZ.

As some OOPs know, I sometimes hand-write a little note in some LE'VZs for folk. From this issue, a space will be left on the back page at the bottom. Please turn to the back page NOW and check if I have written anything to you. On the reverse side will be the Records Edit Slip. There is no need for folk to send the slip back each time. Only if you have changed your address, equipment or any other data.

I now have the RS232 Terminal Interface with the modified EPROM which allows a printer to operate when working Bulletin Boards. As promised in an earlier LE'VZ that I would be able to arrange the supply of the EPROM to folk, I am sorry that this is not yet possible, as the writer of the EPROM has not given us all the details as yet. PLEASE BE PATIENT.

Now to finish off, what do you southeners think of "our" Brisbane Bears defeating some of the "old" VFL teams?? Its about time that the competition is called the Australian Football League. Those other "games" are getting a shake up here now.
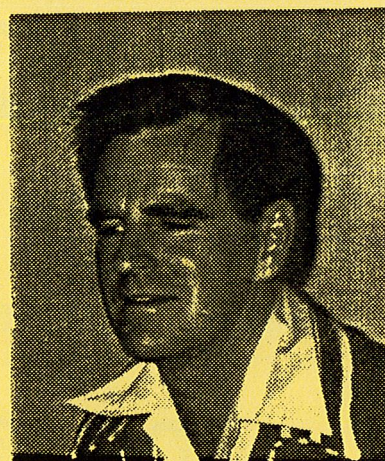
Don't forget if you are in Brisbane at any time, contact me so that we can arrange a meeting. If you ring and receive our D'ALTON SOUND SERVICE telephone answering service, you have thirty seconds to talk and leave a message. Please repeat your 'phone number. We have not been able to return a few calls because we could not understand the caller.

GOD BLESS AND BEST OF HEALTH TO YOU. JOHN.

CONTENTS.

STARTER HINTS FOR BEGINNERS

So you have been smart enough to have purchased, borrowed or lucky enough to have been given a personal computer, a VZ colour computer at that. Perhaps you are having "teething" troubles and not been able to use the great little VZ with ease. It is a fact that a perfect computer operators manual for any computer is impossible to produce. Some user folk say that a particular manual is too simple and childish in its format. Others may say that it is too complicated and hard to follow. IT'S THESE FOLK THAT THIS ARTICLE IS AIMED AT TO HELP.

The first thing that should be done is to affix the computer, tape cassette unit and power packs to a baseboard of some sort in a manner so that there is no movement of the pieces. 99% of problems are caused by loose pieces, in particular movement of the plug-in RAM memory expansion unit. The effects caused by loose pieces are computer "crashes", which means that the programme dissappears, the screen (VDU Video Display Unit) is full of graphic or garbage characters and text. Another is that programmes cannot be loaded into the VZ from tape, and so on. While the system is still in it's warranty period, use wire or sticky tape to hold the units firmly. When the warranty has expired you can then use a more permanent method such a screwed metal brackets.

TAPE LOADING.

Despite sales pitches to the contrary, most cassette recorders are NOT 100% satisfactory to use with most brand computers. This means that programmes can not be loaded the first time, or perhaps not at all. The volume control has to be fiddled with and tried again and again until success may be achieved. The old VIC 20 was designed to use only the Commodore cassette recorder (CTR), and although the VZ does have a specially designed CTR to be used, some folk opt to using an ordinary CTR with the resulting frustration and the early demise of the VZ to a cupboard. The special VZ DTR (Data Tape Recorder) shapes the computer signals before they are recorded and after they are are played back into the VZ, for 99.99% reliability.

If a "bad load" is affected at any part of the programme on the tape, the error message "LOADING ERROR" and "WAITING" below that is displayed in the left bottom of the VDU. You can rewind the tape to try again or if not, just press <CTRL><BREAK> and the "READY" message and flashing cursor will appear as normal.

DSE DEMONSTRATION TAPE.

I advise that you load the demonstration tape that comes with the VZ into the Data Cassette Recorder (DCR), rewind it to it's start and set the tape counter to 000 (zero). Load the programmes by pressing <CTRL><CLOAD><RETURN> and start the DCR and note on paper the DTR counter numbers where each programme starts. In all cases, if the LOADING message appears at number 045, as an example, on the DTR, then write that number down. If at another time you wish to load that programme again, wind the tape back to the start and set the counter to 000. Now wind the tape to about 044 not 045. This is because all programmes and data files have a "Header" on the tape. The "Header" gives various information to the VZ which is put on the tape in the recording mode. This "Header" lasts for about 3 to 4 seconds.

So the tape must in a position for the VZ to receive the "Header", in this example about 044. Some folk instal a sound monitor to their VZ DTR so that this start "Header" can be heard so the tape can be started at the correct position.

To load a particular programme, it's correct file name must be typed in. Say you wish to load GAME TWO you type:- CRUN"GAME TWO"RETURN.

To print the above in instructions in the printed medium, it is denoted this way :- <CRUN>"GAME TWO"<RETURN>. That is if you type CRUN by the normal single key typing manner. If you type in the single key mode as written above each key it is :- <CTRL><CRUN>"GAME TWO"<RETURN>. The file name must be EXACTLY the same as on the tape "Header", and that means any full stops, spaces etc. If you don't know what the file name is then don't type any file name :- <CTRL><CRUN><RETURN> and the first programme that is received will be loaded, together with it's file name. If that is not the programme that you want then stop the DTR and press <CTRL><BREAK>. Wind the tape and try again at another position. If you find the programme, just let the tape run until it is loaded in. This is indicated by either the "READY" and flashing cursor, or the programme/game starting, depending on the type of programme.

There is no need to do a <NEW> to remove that portion of the previous programme that was just loaded before the tape was stopped. The VZ does that for you. Clever isn't it? We do have a Utility programme called FILESEARCH that prints on the VDU and/or printed on paper all the programmes on a tape or disc. It is up to the user to note the VZ DTR tape indicator numbers.

LISTING A PROGRAMME.

There are various ways that a programme can be saved. The letter before the colon and programme name (file name) can be any one of the alphabet. IE. LOADING T: GAME 2, or LOADING B: GAME 7. T and B are the most common. A programme with a T prefix may be listable. A programme with prefix B will not be listable. If you wish to LIST a programme, load it with the <CLOAD> command, not the <CRUN> command, which RUNs the programme straight away and you may not be able to <CTRL><BREAK> it.

To <LIST> it, press <CTRL><LIST><RETURN>. Remember, single key entries can be spelt out. In this case, L I S T. The <LISTing> will start at the lowest line number. If you wish to stop the <LISTing>, just press <SPACE>. To continue press <SPACE> again. The <LISTing> will continue to the last line number, which will be the highest number. If you wish to stop the <LISTing> completly to Edit it, then press <CTRL><BREAK>. Some programmes with a T prefix cannot be readily listed. Some of the earlier DSE. units are in this catagory so that when a <LISTing> is done only one line is printed:- XXX POKE30862,XXX:POKE 30863,XXX:USR(X)

There are other prefixes in use, F, K, S and D which is the normal one for a DATA file. W is used by the Editor/Assembler.

GOTO page 4.

Continuing STARTER HINTS FOR BEGINNERS.

OTHER BRAND COMPUTER TAPES.

Another question often asked is if another computer's (ATARIE, COMMODORE, MICROBEE etc.) programme on tape can be loaded into the VZ. In short the answer is NO NO NO. BUT with a with special software Utility the anwer is YES. One case in point is that by using our VSOFTWAREZ TU18 LOAD XX-80 FILE unit, the early TRS 80 and SYSTEM 80 tape programmes can be loaded in. The programme can be <LISTed> and most probably will require you to change (EDIT) some of it. I do not know of any other such software for other computers, but would like to hear from anyone who does.

MEMORY SIZES.

If your computer has enough Memory, then it will run any normal programme written for the VZ200 or the VZ300. In other words, the VZ200 and VZ300 are entirely compatable, well ALMOST!!. There are a few isolated instances where the printer will not operate with the DSE. Editor/Assembler. Another is that the VZ300 may not operate correctly with the DSE. Word Processor.

But for all intents and purposes, the VZ200 and the VZ300 are compatable.

The confusion arrises where folk are not sure whether their computer's Memory is large enough. There is such a thing called a MEMORY MAP. This is printed in our VPROGRAMMEZ-VHINTZ-VHARDWAREZ Book, in the VZ Technical Manual or can be obtained by contacting Mr.Bob Kitch whose address is printed elsewhere in LE'VZ. It shows quite clearly what you need to know about memory size. Our software listings denote this by a code:- VZ1 VZ2 VZ3 VZ4 and VZ5.

The smallest memory size is the unexpanded VZ200 (VZ1), and the largest are both VZ's with a 64K RAM PACK (VZ5). Of course there are other sizes of memories, most being built up by folk who are technicaly capable. Such units can be supplied, or manufactured, please contact me.

Hopefully this will answer most of the "first time" questions asked by beginners to VZ computing. I may expand on the above in later LE'VZ magazines. If folk have any suggestions in this regard, please let me know.

J.D.

(VZ)

```
************************
   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
 SAE 23cm X 10cm to the following.
   EDDIE TOMES    3 Kilkenny 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.
   ************************
```

```
1 REM CONRIBUTION BY MR.D DOWER.
2 REM THIS PROGRAMME SHOWS HOW
3 REM TO USE THE CALLS 0A7FH & 0A9AH
4 REM CALLING 0A7FH LOADS THE
5 REM ARGUMENT M INTO THE HL REG
6 REM PAIR. THIS VALUE IS THEN
7 REM MULTIPLIED BY 8 BY THE SUCC-
8 REM ESSIVE ADD HL,HL STATEMENTS.
9 REM THIS MODIFIED M VALUE CALLED
10 REM A IS THEN RETURNED TO BASIC
11 REM USING THE INSTRUCTION
12 REM JP 0A9AH.
14 CLS:POKE30779,0:POKE30744,1
15 L=40960
20 FORG=0TO8
25 READD
30 POKEL+G-65536,D
35 NEXTG
100 POKE30862,0
200 POKE30863,160
210 REM40960
350 INPUT"VALUE";M
400 A=USR(M)
500 PRINT"ORIGINAL = ";M;" SHIFTED RESULT = ";A
600 GOTO350
700 DATA205,127,10,41,41,41,195,154,10
```

PRINTING A4 WITH DISASSEMBLER

By Mr. Frank Rees, 27 King St., BOORT. VIC. 3537.

This little BASIC routine enables folk to print out a listing on A4 paper, leaving gaps on the perforations so that the paper can be cut. Normally the printer prints over the perforations and so some lines may be unreadable.

There are 60 lines to the page with this routine. Load the DISASSEMBLER and type in the extra lines.

```
10CLS:CLEAR300:LI=60:PRINT@45," VZ 300"
also:-
19915IFLP=1THENLI=LI-1:IFLI=0THENLI=60ELSE1000
19920IFLP=1THENLPRINT:LPRINT
19921IFLP=1THENFORI=1TO68:LPRINT"-";:LPRINT:LPRINT
```
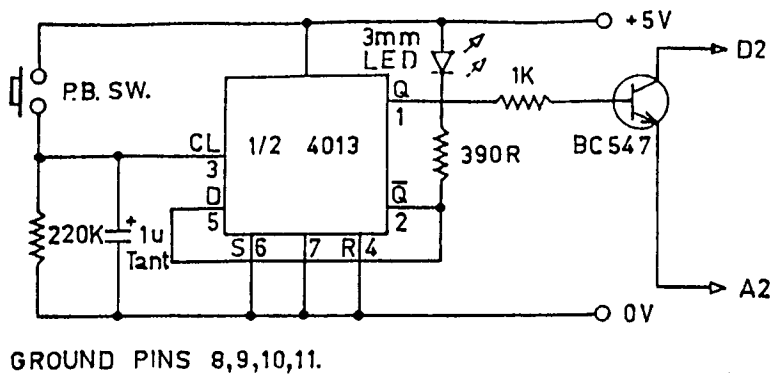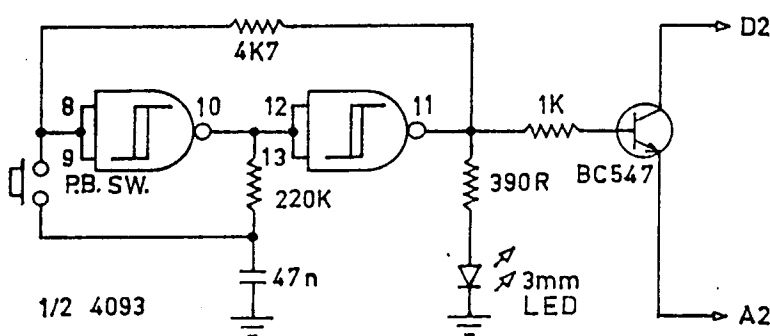
(VZ)

SHIFT LOCK SWITCHES   BY JOE LEON

CIRCUIT 1

GROUND PINS 8,9,10,11.

CIRCUIT 2

1/2 4093

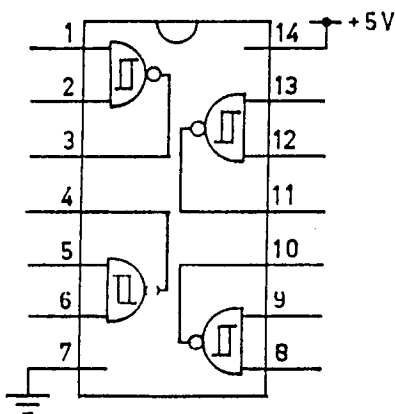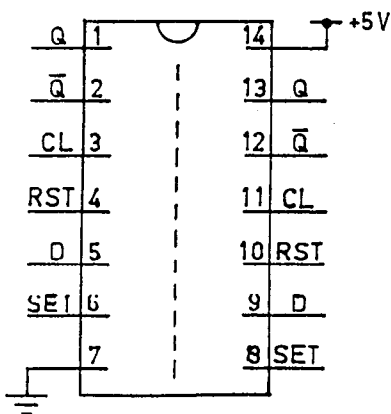### 4093

4013

TOP REAR VIEW OF MAIN P.C.B.

A2
D2
LED
GND

← CABLE TO VZ KEYBOARD

Instead of using a mechanical push on/push off switch an electronic FLIP FLOP can used. Two versions are shown. I'll leave it up to you which version you use.

CIRCUIT 1 :-

This circuit uses one half of a dual flip flop. This is the one I used. The P.B. SW. (Push Button Switch) shown can be a small momentary switch mounted anywhere convenient. In my case I used the RIGHT SHIFT KEY on the VZ 300 Keyboard. If you decide to use this option then the track on either side of the Right Shift Key on the Keyboard P.C.B. must be cut. Solder a thin wire to each side of the KEYPAD on the track leading to the isolated right Shift Key. The other ends of the two wires go as shown on the circuit diagram. While you have the Keyboard apart you may decide to mount the 3mm LED as I did. It went in the Right Shift Key Cap itself, right above the "I" in the word SHIFT. It looks neat. The choice is yours where it goes. Connecting the Transistor to the keyboard matrix is straightforward. When built the LED will let you know when the switch is on. If the LED is on, but Shift Lock is not then try reversing the leads from the Transistor.

CIRCUIT 2 :-

This circuit does the same job as above and is intended for Persons who built the softstart switch as shown in the November issue, page 8 of the Hunter Valley VZ Magazine. It uses the left over gates from that circuit. If you have'nt seen the mag. then ground Pins 1,2,5 and 6.

++++ HINTS FROM JERIMIE LEE ++++

Here are a couple of POKEs to try.
POKE 30776,255 inverse on.
POKE "" ,40   "" off.
POKE 28600,40 switch to MODE (1).
                    (VZ)

CAUTION !!!

Both IC'S are CMOS type and special handling precautions must be observed. Do not touch the pins on the IC'S as static can destroy them. Use a socket for the IC just to be safe. Also all unused INPUTS must be grounded or taken to +5V. Pinouts for both IC'S are shown to help intending constructors.
JL.

THIS IS A TOTAL OF 67 ENTRIES. WITH ALL THESE CHANGES MADE, NOW TYPE <B> TO EXIT MONITOR. SAVE A COPY OF YOUR NEW PROGRAM USING- BSAVE"EXBASPH1",C986,CC64.

NOW OPEN, CLOSE, SAVE, LOAD WORK. YOU WILL ALSO FIND THAT <CMD> WILL REBOOT DOS. ALSO <PUT> WILL LPRINT THE DISK DIRECTORY. MAKE SURE THAT THE PRINTER IS ON BEFORE USING THE <PUT> COMMAND.

TO MAKE YOUR NEW EXT. BASIC RUN, A SMALL PROGRAM CAN BE USED AS FOLLOWS:-
10 BLOAD"EXBASPH1"
LINES 20-180 FOR INSTRUCTIONS
190 INPUT"PRESS <RTN> TO CONT";A$
200 POKE30897,255:POKE30898,207
210 CLEAR 1600: 'T.O.M IS CFFFH
220 POKE30862,142:POKE30863,201
230 PRINT USR(0): ' USR ADD C98EH
SAVE THIS PROGRAM. USE IT TO RUN EXTENDED BASIC.

by P. HICKMAN

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W.OBRIST'S EXTENDED BASIC COMES IN TWO FORMS. EXBAS1.2 RESIDES IN MEMORY AT C9C4H TO CC64H. THE LATER VERSION LOCATES ITSELF BELOW THE TOP OF MEMORY. THIS PATCH WILL WORK WITH EXBAS1.2. YOU MAY BE ABLE TO ADAPT IT TO THE LATER VERSION.
EXT. BASIC ENABLES THE VZ TO USE A WHOLE HOST OF TRS80 SOFTWARE. CONTACT A LOCAL TRS80 USERS GROUP FOR FURTHER INFORMATION. HOWEVER, SOME ESSENTIAL DOS BASIC COMMANDS ARE DISABLED. THESE ARE <OPEN>, <CLOSE>, <LOAD>, <SAVE>, <BLOAD>, <BSAVE>. BLOAD & BSAVE CAN BE USED IF YOU REBOOT DOS. THIS IS DONE BY POKE30862,145: POKE30863,0: PRINTUSR(0). ALL BASIC PROGRAMS ARE DESTROYED BY THIS OPERATION. HOW CAN WE WRITE AN EXTENDED BASIC PROGRAM & SAVE IT TO DISK?
LOAD EXTENDED BASIC. IT SHOULD RESIDE AT C9C4-CC6EH. LOAD MONITOR AT A HIGHER MEMORY LOCATION. ENTER MONITOR AND MAKE THE FOLLOWING CHANGES (TO EVERY ADDRESS FROM C986 TO C9C5. ALSO CHANGE C9EB — C9ED)

ADDR	CONTENTS	INSTRUCTION	
C986	3E 01	LD	A,01
C988	32 9C 78	LD	(789C),A
C98B	C3 06 49	JP	4096
C98E	3E C3	LD	A,C3
C990	32 79 79	LD	(7979),A
C993	21 F5 45	LD	HL,45F5
C996	22 80 79	LD	(7980),HL
C999	32 85 79	LD	(7985),A
C99C	21 DD 47	LD	HL,47DD
C99F	22 86 79	LD	(7986),HL
C9A2	32 88 79	LD	(7988),A
C9A5	21 91 43	LD	HL,4391
C9A8	22 89 79	LD	(7989),HL
C9AB	32 A0 79	LD	(79A0),A
C9AE	21 4E 44	LD	HL,444E
C9B1	22 A1 79	LD	(79A1),HL
C9B4	32 82 79	LD	(7982),A
C9B7	21 86 C9	LD	HL,C986
C9BA	22 83 79	LD	(7983),HL
C9BD	32 73 79	LD	(7973),A
C9C0	21 91 00	LD	HL,0091
C9C3	22 74 79	LD	(7974),HL
C9EB	21 8E C9	LD	HL,C98E

These are two very short programmes also on DPD2. The first one draws a spiral, the second loops, both in high resolution.

```
10 CLS
15 MODE(1)
20 FORA=0TO30STEP.02
30 R=A*.3:IFR>6.8THENGOTO60
40 SET(64+7*R*COS(A),33+5*R*SIN(A))
50 NEXTA
60 GOTO60
```

```
10 CLS
15 MODE(1)
20 FORA=0TO30STEP.02
30 R=A*.3:IFR>6.8THENGOTO60
40 SET(64+7*R*COS(A),33+5*R*SIN(A))
50 NEXTA
60 GOTO60
```

READ DISC PROGRAMME

This little programme will enable Disc System users to READ in ASCII and text what is saved on a disc. You can select the starting track number. In a later LE'VZ I hope to print a programme to also allow WRITING on to the disc. There is a software unit available that already does both which may be available by the time you read this.   (ED).

```
1 REM *************************
2 REM *        DIRRDV1         *
3 REM * A PROGRAM TO READ DISK *
4 REM *     SECTOR BY SECTOR    *
5 REM *************************
6 REM    *    COPYRIGHT(C)    *
7 REM    *    JOHN R CHAPMAN   *
8 REM    *        1986         *
9 REM    *************************
10 P=42000-65536
20 FOR I=0 TO 18
30  READ D
40  POKE P+I,D
45 NEXT I:REM LOADS M/L CODE AT 42000
50 POKE30862,16:POKE30863,164:REM SETS USR POINTER TO 42000
90 REM DOS USES THE Z80 REGISTER IY TO ACCESS DOS VECTORS.
91 REM 30897/8 CONTAINS POINTER TO ADDRESS HELD IN IY REGISTER
92 REM EACH DOS VECTOR CONTAINS INFO. SUCH AS FILE NAME, TRACK
93 REM NO., SECTOR NUMBER ETC. AND ARE REACHED BY ADDING AN
94 REM OFFSET VALUE TO IY.
100 IY=PEEK(30897)+256*PEEK(30898)+1-65536
105 REM ASSIGN OFFSETS FOR TRACK,SECTOR,DATA BUFFER,AND DRIVE.
110 TR=18:SC=17:BF=49:DK=11
115 CLS:INPUT"TRACK NO:";T
120 FOR S=0 TO 15:REM 16 SECTORS PER TRACK
130  POKEIY+TR,T:POKEIY+SC,S:POKEIY+DK,16:REM LOAD VECTORS
140  X=USR(X):REM CALLS PWRON,READ,PWOFF (DOS SUBROUTINES)
150  CLS:PRINT "TRACK: "T,"SECTOR: "S
160  B=PEEK(IY+BF)+256*PEEK(IY+BF+1)-65536:' ADDR.OF DATA BUFFER
170  FOR BY=0 TO 127:REM BUFFER CONTAINS 128 BYTES OF DATA
180   A=PEEK(B+BY):REM READ BUFFER ONE BYTE AT A TIME
185    REM CONVERT TO ASCII CHARACTER IF ALPHANUMERIC ELSE VALUE
190   IF A>32 AND A<127 THEN PRINT CHR$(A); ELSE PRINT A;
200  NEXT BY
210  PRINT@ 480,"PRESS <RETURN> TO CONTINUE";:INPUT R$
220 NEXT S:GOTO 115
230 DATA 245,197,213,229:REM SAVE REGISTERS
235 DATA 205,08,64      :REM TURN DISK MOTOR ON
240 DATA 243            :REM DISABLE INTERRUPTS
245 DATA 205,53,64      :REM READ TRACK
250 DATA 205,11,64      :REM TURN DISK MOTOR OFF
255 DATA 225,209,193,241:REM RESTORE REGISTERS
260 DATA 201            :REM RETURN TO BASIC
300 END
```

* * * H E L P * * * H E L P * * *

WANTED. Has anyone a working interface (RS232) for for sale for use with a Dataphone II Modem?
Mr.Milton Perkins, 8 Lavender Court, KYNTON. VIC. 3444.

HELP.   Can anyone tell me how I can use the other two memory banks of a 64K RAM Pack?
Mr.Peter Hill, P.O. Box 1972, C.P.O., AUCKLAND. NEW ZEALAND.

HELP.   Can anyone advise me on how I can interface a CHINNON Disc Drive unit to a VZ?
Mr.Steven Gold, 7 Union St., CLAYFIELD. QLD. 4011.

WANTED.   There are folk who want to buy various used hardware items. Printers, Plotters, Disc Drives and so on.
Editor. (JD)

OTHER VZ USER GROUPS AND CLUBS

AUSTRALIA.
AD LIB Vee Zed MICRO CLUB.
Mr. Gordon Browell, 13 Brooks St., BIGGENDEN. QLD. 4621.

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

VZ DOWN UNDER.
Mr. George Seegie, P.O. Box 316, ST. KILDA. VIC. 3182.

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

WAVZ.
Mr.Graeme Bywater, P.O. Box 388, MORLEY. WA. 6062.

NEW ZEALAND.
CHRISTCHURCH VZ USERS' GROUP.
Mr.Barry Newell, P.O. Box 22094, CHRISTCHURCH. NZ.

M/L - ASSEMBLY PROGRAMMING.

One of our OOPs has part written a book to teach beginners how to use the DSE. Editor/Assembler. It does not teach HOW to write your own programmes but to use the E/ASS. We would like to hear from folk who are interested in obtaining the book. If enough people show interest we would hope to finalise and publish it.
(JD)

MY PRINTER
##########
BY BOB JONES
##########

From what I have learned my printer had its beginning in a bank about six years ago. It is a Centronic Type Printer and weighs 98 pounds. It can print some 165 characters per second and 132 of these characters can be printed across the page with assistance from the tractor feed. Another feature of my printer is that it can produce expanded characters (larger than the usual typed print) which I find very useful at times. When I first obtained my printer I discovered I had a small problem in accomodating a rather large machine. I asked a fellow computer user, David Newcombe advice on whether I could extend the printer interface. David told me I would have no problems as he had used the same interfacing as the V. Z uses, and has in use a considerable 50 feet of ribbon extending from one set of computer eqipment to another and had no difficulties in doing , so. Unfortunately my printer like many others is not entirely compatible with my computer (V. Z). I can do screen dumps; that is using the copy command my printer will transfer information from my T. V. monitor which I find useful too, because where there are adventure games, I can print those instructions on the printer so the game can be played. After purchasing "Larry Taylors Printer Patch" I learnt that it does not function with my printer, but as I do intend buying an Epson or Epson compatible printer, it will come in useful then. If you are not familiar with the term "Printer Patch" it is to help you make your printer compatible with your V. Z. computer, so you can print all the graphic characters. That's all for now.

** QUICKWRITE PRINT DEMO **

I print some of the printer fonts below to give prospective purchasers of it and a CITIZEN 120-D which is a very versatile EPSON compatable printer. The heading is in EXPANDED font.

This line is back to PICA.
I now print in ELITE pitch 13456.
Now turn off elite and back to PICA.
Now *PICA & ITALICS* 4567.
Italics off and back to PICA.

Now to underline 7890.
UNDERLINE now off.
INVERSED Print *+?/>:\@) (765.
Turn INVERSE off.

SUPERSCRIPTS printed now which is rather small 123!"##%-=+?/¦¦.
Superscript now off.

DOUBLE HEIGHT print looks good.

Double height off.
This is EMPHASISED in pica .
This line is CLOSE SPACED with this line, with both still EMPHASISED.

All should now be switched off by MASTER RESET.

This line 1234567890
and this line spaced at 8 lines per inch.
Master reset done gain.
CONDENCED PRINT on this line spaced at eight (8) lines per inch. A lot can be printed in this mode.
So the GREAT LITTLE VZ can do a lot with the right software and a suitable printer.
This   is   now   ELITE   and DOUBLE-STRIKE.

(VZ)

A youth had applied for a job at a poulterer's and fishmonger's.
"I can offer you $25 a week," said the manager.
"Can you fillet a fish?"
"Yes," said the lad.
"Can you dress a bird?"

"What - on $25 a week?"

ENHANCED VZ BASIC — BY Larry Taylor.

The Commodore 64 has advanced hardware supported by an inadequate Basic language, resulting in a number of enhanced Basics being available. Something similar could be produced for the VZ. It must be noted, however, that all such Basics share a common disadvantage. Any program which makes use of them requires the language be loaded before it will function properly.

Because Basic is an interpreted language additional commands can be inserted, if they can be intercepted and executed before reaching the VZ's own interpreter. This is precisely what happens when a disk operating system (DOS) is added. New commands enabling disk operations to be performed, supplement the existing Basic. However, all programs using those extra commands require the DOS to be present before execution or they will not be interpreted correctly.

When a Basic program is RUN, control passes to a machine language ROM routine, the Execution Driver at 1D5AH, which scans each line of the Basic program as it comes to it and begins to translate it. Part of the translation process involves looking for tokens. These are values in the range 128-250 (80H-FAH) that take the place of Basic reserved words e.g. CLS = 132 (84H). Once the word has been identified and checked for correct syntax, control is passed to the corresponing ROM routine before returning to continue the translation. This is similar to one person issuing instructions to another through an interpreter, who first has to translate them before the receiver can act, and is the reason for Basic's slow execution. Most languages get around this problem by having the program translated or compiled before execution.

Tandy's Colour Computer has an enchanced CLS command which enables the user to clear the screen to any one of nine background colours. The syntax is CLSn, where n may be a number in the range 0-8. To illustrate how enhancements can be accomplished, this command will be added to the VZ's repertoire.

On power up the address of the routine which examines each byte in a line of Basic, is stored at 7804H. Because this address is in RAM it can be easily changed. This was done so that at a later stage the DOS could be included. However, it also means that, just as readily, an enhanced form of Basic may be added. The trick is to ensure that, as far as the VZ's interpreter is concerned, nothing unusual has happened. The accompanying assembly language listing shows how this can be accomplished.

Having adjusted the top of memory pointer, the address at 7804H is stored and replaced by our own. The program then locates the new routine at the top of memory. Now each time a byte is to be examined during execution it must first pass through our checkpoint. Once the origin of the call is established, the routine looks for the CLS token, 132 (84H). Only when it has been located does the routine proceed to examine the next byte. This is checked to see if it lies in the range 0-9. Once it has passed this test, the clear screen routine is implemented after first calculating the appropriate value with which to fill the screen. You will notice that not only is it necessary to check for the new command, but also to provide the routine which implements it. In this case a simple block load to the screen has been used. Control is then returned to the ROM processing routine, which prepares to examine the byte following our new command. So, as far as the VZ knows, everything is continuing normally. Tricky isn't it?

I have already successfully used this approach to produce a VZ Printer Patch, which enables all the normal printer functions for owners of EPSON or EPSON compatible printers. The COPY command is intercepted by the patch and as a result its function has been enhanced to allow a proper dump of both the LO-RES and HI-RES screens. One further enhancement that could be explored would be an extension of Basic's SOUND command. The possibilities are limited only by imagination and memory.

TURN THE PAGE FOR THE BASIC PROGRAMME.
THE M/L PROGRAMME WILL BE IN LE'VZ #17.   *(ED).*

INTRO TO PROGRAMMING - PT1

by Bob Kitch.

I have been asked to contribute a series on BASIC programming for the VZ-Users. So here goes.

Firstly, the series will be unconventional. Most introductions to BASIC proceed blow-by-blow through the various BASIC commands. I will not - many texts exist which can explain these better than I can.

Secondly, the series will initially be non-specific to any particular computer language. General programming concepts and guidelines will be offered. The principles will be equally applicable to BASIC, Assembler, Pascal or whatever.

Thirdly, advanced programming concepts and hints will be offered as they are needed. This is the best time to introduce these since their mystique is removed.

Fourthly, early emphasis will be on PLANNING, ORGANISING and MAINTAINING a program, rather than encouraging feverish coding at the keyboard (which is usually commenced too early by beginners).

It is quite possible to recognise a breed of compulsive programmers, born from the home micro boom. This breed, is emerging from the brave new world of tomorrow's technology whose reason for existence is simply to program. People become totally fascinated by the unlimited abstract world that the inside of a computer offers. We can create a Universe or any World inside a machine. In the abstract world of programming, a well thought out programming method serves as a MAP, and the techniques of software engineering are the WEAPONS. These then are the main threads of this series.

Let's commence this month with a few definitions and concepts to ponder over until the next installment.

THE COMPUTER is a machine, and is only capable of doing simple work. It has been termed by some as "a remarkably efficient counting machine with a large memory - but no brains!" It has no intelligence and cannot think.

A COMPUTER SYSTEM consists of four elements :-

1. the Central Processor Unit (in the VZ it is the Z-80A microprocessor chip) with "primary memory" (ROM and up to 34K RAM).

2. Input devices - keyboard, cassette, disk and so on.

3. Output devices - screen, printer, cassette, disk, in-built speaker, voice and sound synthesisers etc.

4. "Secondary memory" - not essential but may be cassette or disk when used to update or relieve primary memory.

— *CONTINUING INTRODUCTION TO PROGRAMMING*

MAN-MACHINE INTERFACE. The interaction between man-machine inputs and outputs is a continuous and circular feedback process. e.g. man output (keypress) is machine input ..or.. machine output (screen prompt) is man input- ..and so on. This interaction forms the basis of using computers.

The four fold subdivision of a computer system is little different to our own mental capabilities. The CPU and primary memory is broadly equivalent to our mind. The I/O devices are similar to our senses (touch, taste, sight, sense of heat, speaking, hearing). The secondary memory is directly comparable to our use of external aids to assist our memory, such as note books, filing cabinets of information, telephone directories - all of which have slow access and are difficult to recall compared with things already resident in our mind.

COMPUTER PROCESSES or CAPABILITIES are surprisingly few in number. There are only FOUR and unless an exercise or problem can be broken down into these elementary processes, then coding of the program should not commence. A greater understanding of the problem is required before proceeding.

It is important to clearly distinguish two things whilst programming. The first, is to devise a LOGICAL solution to the programming exercise, which is quite independent of the particular language to be used. The second, is the actual CODING of the exercise being undertaken. The latter stage is easy, provided that the former is well understood. The computer program will only function correctly if the logic of the program is correct, and there are no aids or diagnostics available from the machine to assist in achieving correctness in this demanding aspect of program design.

Some diagnostics are however available to assist in the coding portion of the task - such as the SYNTAX checking.

As one becomes more familiar with programming languages it is soon apparent that many of the powerful command structures are simply macro instructions formed from these few "primatives".

The four processes are :-

1. Input data and store it in primary memory - the data may be either "raw" data input (e.g. from keyboard) or read-in from the secondary store. (e.g.tape).

2. Output data already stored in primary memory - either as "output" (e.g. to screen) or written-out to secondary memory (e.g.tape).

3. Perform simple arithmetic procedures (addition or subtraction) upon data in primary memory only.

4. Perform logical comparisons (disjunction, conjunction and negation) between two items of data in primary memory. (Remember - I/O, arithmetic, comparisons only)

To continue the analogy with ourselves, I doubt whether we can do anything more than these operations except that we use experience. The computers' analogue of this is the PROGRAM as it possesses zero intelligence.

THE PROGRAMMING TASK is to utilize the high speed and large memory capacity of a computer system to do something useful - such as carry out calculations (number crunching), play games, monitor house security etc.

Unfortunatly due to lack of space, the rest of PART I will be continued in LE'VZ #17 and hopefully to conclude with PART II.   (ED).

```
LISTING 2 : ENHANCED CLS ROUTINE - BASIC VERSION

100 REM ############## ENHANCED CLS ROUTINE - BASIC VERSION ##############
110 REM # ENHANCED CLS COMMAND BY LARRY TAYLOR 1986 #
120 REM ##############
130 REM # CALCULATE THE NEW TOP OF MEMORY POINTER #
140 REM ##############
150 NB=79:TM=(PEEK(30897)+PEEK(30898)*256)-NB
160 HB=INT(TM/256):LB=TM-HB*256
170 POKE30897,LB:POKE30898,HB
180 REM ##############
190 REM # RESET THE BASIC STACK POINTER #
200 REM ##############
210 CLEAR50
220 REM ##############
230 REM # LOCATION OF SET UP PROGRAM #
240 REM ##############
250 EB=31274
260 EH=INT((EB+1)/256):EL=EB+1-EH*256
270 REM ##############
280 REM # LOAD USER EXECUTION PROGRAM POINTER #
290 REM ##############
300 POKE30862,EL:POKE30863,EH
310 REM ##############
320 REM # LOAD 23 BYTE SET UP PROGRAM #
330 REM ##############
340 FOR T=1TO23
350 READD
360 POKEEB+T,D
370 CS=CS+D
380 NEXT
390 REM ##############
400 REM # GET NEW TOP OF MEMORY AND MOVE TO NEXT LOCATION #
410 REM ##############
420 TM=PEEK(30897)+PEEK(30898)*256
430 IFTM>32767THENTM=TM-65536
440 REM ##############
450 REM # LOAD 79 BYTE ENHANCED CLS ROUTINE #
460 REM ##############
470 FOR T=1TO79
480 READD
490 POKETM+T,D
500 CS=CS+D
510 NEXT
520 REM ##############
530 REM # IF DATA CHECKSUM VERIFIES EXECUTE SET UP PROGRAM #
540 REM ##############
550 IFCS<>10968THENPRINT"- ERROR IN DATA ENTRY -":END
560 X=USR(0)
570 REM ##############
580 REM # SET UP EXECUTION ROUTINE DATA IN DECIMAL FORM #
590 REM ##############
600 DATA 243,49,0,119,42,4,120,34,40,122,42,177,120,35,34,4,120
610 DATA 205,77,27,195,25,26
620 REM ##############
630 REM # ENHANCED CLS ROUTINE DATA IN DECIMAL FORM #
640 REM ##############
650 DATA 217,33,91,29,209,183,237,82,213,217,194,120,29,229,205
660 DATA 120,29,32,7,225,237,91,40,122,213,201,254,132,32,245
670 DATA 35,126,214,48,40,9,6,8,184,40,4,16,251,24,230,209,209
680 DATA 17,30,29,213,35,229,135,135,135,32,1,60,198,127,33
690 DATA 0,112,34,32,120,17,1,112,1,255,1,119,237,176,225,201
```

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NEW SOFTWARE

T/DU49 VZ-EPSON P/PATCH. $ 15.00.   VZ1-VZ4.

Larry Taylor's new M/L unit. It allows Epson or Epson compatible printers to LPRINT or LLIST all of the VZ's inverse and graphic characters. These same characters can also be dumped to the printer from the LO-RES screen in the COPY mode.In MODE(1), use of the COPY command will also dump the HI-RES screen to the printer.

COPY,n, allows a range of 4 to 8 to be selected to allow for varying line feeds for different printers. The utility adjusts for any size VZ memory. It also prints the Extended Basic commands that are used if a programme is written using the Extended Basic utility. Very handy! It can even be used with the Extended Basic utility loaded. A second command, LTAB(n), allows a left margin from 0 to 31 to be selected. This is for <LLISTing> a BASIC programme.

D/TG44 MONOPOLY V2.00 $17.00.   VZ3.

This new version from Scott LeBrun replaces his two other units, D/TG3 and D/TG39. You have the option to play the VZ and/or up to eight players.

D/TG45 MONOPOLY V2.0 $19.50.   VZ4.

This new version from Scott LeBrun replaces his two other units, D/TG3 and D/TG39. This is identical to D/TG44 except that it includes a high resolution display of the Monopoly board. You have the option to play the VZ and/or up to eight players.

Scott will replace Tape versions of TG3 and TG39 with T/G44 for people who have purchased those, but please include money for postage.

Mr.S Le Brun, 5 Cameron Court, WANTIRNA. VIC. 3152.

EXISTING SOFTWARE

Code	Name	Price	Versions
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	$ 12.50.	VZ3-VZ4.
TU9	MONITOR DEBUGGER	$ 25.00.	VZ1-VZ4.

This new version finds VZ memory size itself.

Code	Name	Price	Versions
TU10	EXTENDED BASIC	$ 12.50.	VZ3-VZ4.
TU11	ARRAY/RESTORE	$ 14.95.	VZ3-VZ4.

You must have TU10 to use TU11.

Code	Name	Price	Versions
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.

Code	Name	Price	Versions
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.	$ 10.00.	VZ1-VZ4.

NEW SOFTWARE

D/TG42 AIR TRAFFIC CONTROLLER. $20.00.VZ3-VZ4.

This game was previously sold by DSE. A very good Low Res. game which allows you to control the arrival and departure of various types of aircraft at a busy airport. Complete with instruction manual.

D/TG43. LEARJET. $20.00. VZ3-VZ4.

Another game previously sold by DSE. It is a more complicated Low Res. game whereby you pilot a Learjet around Australia. Also complete with instruction manual.

DB46. QUICKWRITE. $40.00.   VZ3-VZ4.

This M/L unit is a WORDPROCESSOR for disc use only, as the data is <SAVEd> automatically to disc after a number of lines have been typed if required. Back-up to tape is catered for. Many of the usual options are allowed. Paste, Cut, Find & Replace, Copy, Insert, Vol, Label, Format, Status etc. Also various printer controls are selectable. An instruction manual is included. A register is kept of purchasers who will be kept up to date with new and different versions.

DU1 CONVERT2. $ nil.   VZ3-VZ4.

This unit is supplied FREE to purchasers of QUICKWRITE (DB46). CONVERT2 allows loading of E&F W.P. tape files and saves to disc for use with QUICKWRITE.

DU47 DISKOPS1. $10.00. VZ3.

This utility allows M/L programmers using the DSE. Editor Assembler, to save and load their source code to and from disc. Tape must still be used to save object code.

DU47A DISFOPS2. $10.00. VZ4.

This is the same as DU47, but as these two units are NOT re-locatable, you must specify which you require, DU47 or DU47A.

D/TG54 GOLF $15.00. VZ2-VZ4.

This game is suitable for one or two lazy "Norm" golfer/s or for those who can't get to a golf course. You select the type of club, angle and power of hit so that the VZ works out where the ball travels, which is seen in High Res. You see the ball moving hopefuly clear of water, bunkers and trees etc, which are all in colour.

D/TG53 GALACTIC EMPIRES. $15.00. VZ2-VZ4.

You are the Emperor of a single star system and you must expand your empire and dominate the universe. Play against other players and/or the VZ. A good Low and High Res. game.

D/TE10 SNERTLE. $10.00. VZ2-VZ4.

An educational unit which allows you to practice -, +, *, and / (divide). There are four levels of skill. Snertle the worlds smartest turtle praises correct answers and gets embrassed by wrong ones. No scoring, only a percentage readout when you choose to Quit. The higher the percentage the better the result.

D/TG51 BLOCK 1. $15.00. VZ2-VZ4.

A High Res. game simliar to DSE.s Super Snake, but two players can play it.

D/TG52 SOLO BATTLESHIPS. $15.00. VZ2-VZ4.

A Low and High Res. game. You try to work out the position of three enemy battleships and destroy them, before they get you.

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 Menues.

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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 :-

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MEMORY DUMPS ONTO TAPE CASSETTE

MEMORY DUMPS ONTO CASSETTE
....

VEEZEDERS WITHOUT A DISC DRIVE MAY FEEL A BIT FRUSTRATED AFTER READING ANDREW SEEGER'S ARTICLE IN LE'VZ #15 ON THE DISC COMMANDS <BSAVE>, <BLOAD> & <BRUN>. WELL, WITH A BIT OF <PEEK>ING AND <POKE>ING MUCH THE SAME THING CAN BE DONE WITH A CASSETTE. SCREEN DUMPS, M/L ROUTINES AND EVEN THE LARGE AMOUNTS OF DATA FROM SUCH THINGS AS DATA BASE PROGRAMS CAN ALL BE SAVED TO TAPE WITHOUT THE TIME (AND TAPE) CONSUMING <PRINT#> ROUTINES. THE TRICK IS IN KNOWING HOW THE <CSAVE> <CLOAD> AND <CRUN> COMMANDS WORK.

THE BASIC INTERPRETER MAINTAINS SEVERAL POINTERS IN THE COMMUNICA-TION AREA EACH OF WHICH HOLDS THE ADDRESS OF AN IMPORTANT POINT IN RAM. THESE ARE:-

30884/5 - THE START OF THE PROGRAM STATEMENT TABLE (PST)
30969/70- THE START OF THE SIMPLE VARIABLES TABLE (SVT)
30971/2 - THE START OF THE DIMEN-SIONED VARIABLES TABLE (DVT)
30973/4 - THE END OF THE VARIABLES TABLES (EVT)
30880/1 - TOP OF THE STACK (TOS)
30897/8 - TOP OF MEMORY (TOM)

YOUR BASIC PROGRAM USUALLY LIES BETWEEN THE ADDRESSES POINTED TO BY THE PST AND SVT POINTERS. WHEN YOU USE THE <CSAVE> COMMAND THE COMPUTER SAVES EVERYTHING BETWEEN THESE TWO POINTS. THEREFORE WE CAN SAVE ANY BLOCK OF MEMORY BY SIMPLY <POKE>ING THE ADDRESS OF THE FIRST BYTE OF THAT BLOCK INTO 30884/5 AND THE ADDRESS OF THE LAST BYTE PLUS 1 INTO 30969/70 AND THEN USING THE <CSAVE> COMMAND AS USUAL. HERE IS AN EXAMPLE OF HOW IT MIGHT LOOK AS A SERIES OF DIRECT COMMANDS:-

```
POKE30884,START ADDRESS LSB:
POKE30885,START ADDRESS MSB
                        <RETURN>
POKE30969,FINISH ADDRESS LSB:
POKE30970,FINISH ADDRESS MSB
                        <RETURN>
CSAVE"NAME"             <RETURN>
```

THE LOADING PROCESS IS EVEN MORE SIMPLE. JUST <CLOAD> THE MEMORY BLOCK FIRST IN THE NORMAL WAY (IT WILL BE PUT BACK EXACTLY WHERE IT CAME FROM), THEN LOAD YOUR APPLICA-TION PROGRAM.

SO FAR SO GOOD BUT IT IS OFTEN MORE USEFUL TO DO ALL THIS FROM INSIDE A BASIC PROGRAM. THIS IS A BIT MORE COMPLICATED SO I HAVE INCLUDED AN EXAMPLE TO ILLUSTRATE THE TECHNIQUES. THE PROGRAM DRAWS A PATTERN IN TEXT MODE, SAVES IT TO TAPE, RE-LOADS IT AND PUTS IT BACK ON THE SCREEN

THE FIRST THING YOU NEED TO DO IS LOWER THE TOP OF MEMORY TO CREATE SOME SPACE FOR THE DATA BY <POKE>-ING NEW VALUES INTO THE TOM AND TOS POINTERS. THE SPACE SHOULD BE ABOUT 1/4K BIGGER THAN THE DATA BLOCK. THE DATA CAN BE <POKE>ED DIRECTLY INTO THIS AREA OF RAM AS IT BECOMES AVAILABLE TO THE PROGRAM AND <CSAVE>ED AT ANY TIME. AS BEFORE, YOU <POKE> THE ADDRESS OF THE START AND FINISH OF THE BLOCK INTO THE PST AND SVT POINTERS BUT YOU NEED TO <PEEK> AT THE EXISTING VALUES FIRST AND THEN REPLACE THEM WHEN THE SAVING IS FINISHED SO THAT THE PROGRAM CAN CONTINUE.

WHEN YOU COME TO RE-LOAD THE DATA THERE ARE TWO PROBLEMS. FIRSTLY, THE <CLOAD> COMMAND WILL TERMINATE THE PROGRAM RUN AND CLEAR ALL THE VARIABLES. BY USEING <CRUN> INSTEAD THE PROGRAM WILL APPEAR TO CONTINUE BUT WILL ACTUALLY BE RE-STARTING SO ANY VARIABLES WHICH HAVE TO BE KEPT MUST BE <POKE>ED INTO SAFE MEMORY FIRST AND THEN <PEEK>ED OUT AGAIN AFTER. SECONDLY, BOTH <CLOAD> AND <CRUN> LEAVE THE SVT, DVT AND EVT POINTERS CONTAINING THE ADDRESS OF THE END OF THE DATA BLOCK, WHICH WILL BE HIGHER THAN TOM AND TOS AND SO GENERATE AN 'OUT OF MEMORY' ERROR. TO GET AROUND THIS RAISE THE TOM AND TOS TO THEIR NORMAL POSI-TIONS BEFORE THE <CRUN> COMMAND.

THEN SINCE THE PROGRAM WILL RE-START, THE VERY FIRST THING THAT IT MUST DO IS REPLACE THE CORRECT VALUES OF THE SVT, DVT AND EVT POINTERS BEFORE GOING ON TO LOWER TOM AND TOS AS HAS ALREADY BEEN DONE AT THE START ANYWAY. YOU CAN PUT DUMMY ARGUMENTS INTO THESE <POKE>S UNTIL YOU FINISH WRITING THE PROGRAM AND THEN <PEEK> AT THEIR EXACT VALUES.

IT'S A GOOD IDEA TO ADD THESE THINGS AFTER THE BODY OF THE PROGRAM HAS BEEN DE-BUGGED TO AVOID CONFUSION. LASTLY, FOR THOSE NOT FAMILIAR WITH THE POINTERS, EACH ONE CONSISTS OF TWO BYTES OF RAM WITH THE LOWER BYTE HOLDING THE THE LEAST SIGNIFICANT BYTE (LSB) OF THE ADDRESS TO WHICH IT POINTS AND THE UPPER ONE HOLDING THE MOST SIGNIFICANT BYTE (MSB) . IF THE ADDRESS IS AD THEN:-

$$LSB=AD-INT(AD/256)*256 \text{ AND}$$
$$MSB=INT(AD/256)$$

——**——

BY   CHRIS HOBROUGH
     35 BYRON ST.
     BANGALOW
     N.S.W. 2047

"I say, look here!" said an angry member of the grouse-shooting party. "You nearly shot my wife!"

"I'm terribly sorry," said the short-sighted offender. "Shall I try again?"

————

"Why aren't you married?"

"I was born that way."

————

Prayer.
I do have faith ...help me to have more.

Mark 9:24.

"When I grow up," confided little Amy to her Uncle, "I'm going to marry the boy next door."

"Why is that?"

"'Cos I'm not allowed to cross the road."

A famous painter
Met his death
Because he couldn't
Draw his breath.

```
1 '**********************
2 '*  MEMORY DUMPS TO TAPE  *
3 '*   BY CHRIS HOBROUGH    *
4 '*      MAR '87           *
5 '**********************
6 '
7 ' TO TEST: SELECT 'DRAW'
8 ' FIRST. SWITCH OFF AFTER
9 ' SAVING, THEN RE-LOAD THE
10 ' PROGRAM AND SELECT 'LOAD'
11 ' AND THEN 'MOVE'.
12 'NB. ALL REM STATEMENTS MAY
13 ' BE LEFT OUT BUT LINES
14 ' 20-40 & 4040 MUST BE
15 ' ADJUSTED ACCORDINGLY.
16 ' TREATES ALL MACHINES AS
17 ' 8K.
18 'SET POINTERS:-
19 'SIMPLE VARIABLES
20 POKE30969,48:POKE30970,132
29 'DIM VARIBLES
30 POKE30971,48:POKE30972,132
39 'END OF VARIABLES
40 POKE30973,48:POKE30974,132
49 'TOP OF MEMORY
50 POKE30897,255:POKE30898,140
59 'TOP OF STACK
60 POKE30880,205:POKE30881,140
99 '
100 CLS:PRINT
110 PRINT" [D]RAW SCREEN AND SAVE":PRINT
120 PRINT" [L]OAD":PRINT
130 PRINT" [M]OVE AND DISPLAY"
140 A$=INKEY$:A$=INKEY$:IFA$<>"D"ANDA$<>"L"ANDA$<>"M"GOTO140
150 IFA$="D"GOSUB200
160 IFA$="L"GOSUB300
170 IFA$="M"GOSUB400
180 GOTO100
190 END
199 '
200 GOSUB1000 'DRAW
210 GOSUB2000 'MOVE UP
220 GOSUB3000 '<START RECORDING>
230 GOSUB4000 'CSAVE
240 RETURN
299 '
300 GOSUB3500 '<START LOADING>
310 GOSUB4500 'CLOAD
320 RETURN
399 '
400 GOSUB2500 'MOVE DOWN
410 GOSUB10000
420 RETURN
999 '
1000 CLS
1010 Z=136
1020 FORX=0TO31
1030 FORY=0TO15
1040 POKE28672+32*Y+X,Z
1050 Z=Z+1:IFZ=256THENZ=128
1060 NEXT
1070 Z=Z+1:IFZ=256THENZ=128
1080 NEXT
1090 RETURN
1999 '
2000 MF=28672
2010 MT=-29440
2020 C=0
2030 FORMV=0TO511
2040 POKEMT+MV,PEEK(MF+MV)
2050 C=C+1
2060 IFC=128SOUND31,1:C=0
2070 NEXT
2080 RETURN
2499 '
2500 CLS
2510 MT=28672
2520 MF=-29440
2530 FORMV=0TO511
2540 POKEMT+MV,PEEK(MF+MV)
2550 NEXT
2560 GOSUB10000
2570 RETURN
2999 '
```

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 C45. 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, using 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 copiers reproduce certain colours differently. We can but try.

BASIC PROGRAMME LISTINGS need special requirements.
Refer to #14 pages 2 and 3. This was sent by Scott Le Brun on paper as printed on his GP100. I then reduced it so that two pages could be printed on one page. His printer ribbon was a little light. Now refer to pages 4 and 5. Marco Ostini sent this on tape. I printed it in reduced mode while <LISTing> it. It is a slightly bigger print than Scott's and clearer. Also I ran the programme so it should be "bug" free, certainly no typing errors.

TAPE/DISC CONTRIBUTIONS are therefore the best way to send in this regard. 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 the programme 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.

●━━━━━━●

LE'VZ is printed every two to three months.

CONTINUING MEMORY DUMPS TO TAPE.

```
3000 CLS:PRINT
3020 PRINT" START RECORDING AND PRESS"
3030 PRINT" <RETURN>"
3040 GOSUB10000
3050 PRINT@193,"RECORDING"
3060 RETURN
3499 '
3500 CLS:PRINT
3510 PRINT" PRESS <RETURN> AND START TAPE"
3520 GOSUB10000
3530 RETURN
3998 '
3999 'NEW VALUES IN POINTERS
4000 POKE30884,0:POKE30885,141
4010 POKE30969,0:POKE30970,143
4020 CSAVE"SCREEN DUMP"
4029 'RESTORE POINTERS
4030 POKE30884,233:POKE30885,122
4040 POKE30969, 48:POKE30970,132
4050 PRINT:PRINT" DONE"
4060 FORT=1TO1000:NEXT
4070 RETURN
4498 '
4499 'RAISE TOP OF MEMORY AND
4500 POKE30897,255:POKE30898,143
4509 'TOP OF STACK
4510 POKE30880,205:POKE30881,143
4520 CRUN"SCREEN DUMP"
4530 RETURN
9999 '
10000 A$=INKEY$:A$=INKEY$:IFA$<>CHR$(13)THEN10000
10010 RETURN
```

HEX to DEC PROGRAMME.

This was sent in by Mr.H Huggins of Mitcham. Vic.

```
READY RECKONER FOR HEX-DEC CONVERSION

5 CLS: GOTO100
10 CLS:FORA=1TO15
20 POKE30876,1
30 X1=A*16^3:X2=A*16^2:X3=A*16:X4=A
40 READP$
50 PRINTP$;TAB(3)X1;TAB(11)X2;TAB(19)X3;TAB(27)X4
60 DATA1,2,3,4,5,6,7,8,9,A,B,C,D,E,F
70 NEXT
80 GOTO80
100 PRINT"INSTRUCTIONS,IF NEEDED"
105 PRINT
110 PRINT"HERE IS A READY RECKONER FOR    HEX-DEC CONVERSION"
120 PRINT"SIMPLY GET A PRINT-OUT OF THE"
130 PRINT"FIGURES AND KEEP IT HANDY."
140 PRINT"TO USE,TAKE YOUR HEX NUMBER AND"
150 PRINT"USE THE NUMBERS IN THE LIST"
160 PRINT"COLUMN FOR COLUMN,AND ADD THEM"
170 PRINT"TAKE 87B9.----32768+1792+176+9"
180 PRINT"ADDS TO 34745 WHICH IS THE DEC  NUMBER"
190 PRINT"ZERO IS ZERO IN ANY COLUMN"
200 PRINT"IF PRINTER IS NOT USED ALTER    LINE 20 TO REM"
210 INPUT"HIT RETURN";X:GOTO10
```

```
        PRINT-OUT
1    4096    256    16     1
2    8192    512    32     2
3   12288    768    48     3
4   16384   1024    64     4
5   20480   1280    80     5
6   24576   1536    96     6
7   28672   1792   112     7
8   32768   2048   128     8
9   36864   2304   144     9
A   40960   2560   160    10
B   45056   2816   176    11
C   49152   3072   192    12
D   53248   3328   208    13
E   57344   3584   224    14
F   61440   3840   240    15
```

WHAT PEOPLE HAVE SAID. # #

Is the list of software with numbers of the Public Domain Discs, DPD1 and DPD2, a printout using Larry Taylor's FILESEARCH unit?

Yes. A printout of a tape is a little different. The filename can be up to eight characters long. The first two sets of two digit numbers being the disc track and sector numbers are of course not printed.

Where is my OOP number printed?

Your OOP number is printed next to your $credit amount at the top of your name and address label. This only applies when I send out LE'VZs to the main bulk of OOPs. But not when they are posted at other times, IE. new OOPs, back issues etc.

Will my GP100 printer work with PRINTER PATCH U49?

No. U49 is for use with Epsom compatable printers.

Can I use my VZ to communicate to VIATEL?

No. At present the VZ RS232 unit only transmits/receives data at 300 Baud.

PLEASE REMEMBER!!

In any communication with us, please indicate YOUR OOPs RECORD NUMBER, if you know it. As mentioned in the LE'VZ FORMATS page, it should be printed at the top of your name and address label of LE'VZs sent in the main batch. This number will not be present when LE'VZs are sent to New Members who are not yet on our Data Base, or when back issues are sent, or on some other occasions.   Many thanks. J.D.

COVER COMPETITION.

As the competition that was commenced in LE'VZ #15 has attracted only a very few entries, I am extending it to close on the 26th. of June 1987, received by us. The prize of $10.00 or $5.00 divided between two entries should induce surely a few more entries. Of course we may not use any entries, that is determined at our discretion. In the meantime I have designed a cover for the time being.   (JD)

BRISBANE WORKSHOP GROUP.

This is the first report and information from this unit initiated by Mr.Bob Jones. As yet a name has not been chosen so I will refer to it as VWORKSHOPZ. At the present they will be held in the Capalaba State High School, School Rd., Capalaba, commencing at 1PM. on. the first Saturday of each month unless notified otherwise. The first two held on the 7th. of March and the 4th. of April were enjoyed by attendees. Two pieces of software have been given to Bob to build onto his ideas. Bobs address is :-

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

Now over to Bob.   (JD)

Those of you who have already attended are probably by now, well aware of the VZ User Group that we have started, IE. Eddie Tomes, John Wilkins myself Bob Jones and supported by John D'Alton, Larry Taylor, Bob Kitch and son Bruce. From the response we have had so far, it is evident that there are many of you VZ computer owners who are reluctant to join a user group. Being a solitary user, as I have learned, has it's disadvantages. Firstly there is expenses of software and other equipment involved with establising a computer set up at your home. By joining a group these expenses and the software etc. are shared amongst the members of the group. Not only can equipment be shared but the knowledge of the group members as weil. We can all expand each others interest in the computer by pooling the information we have gained through research, reading magazines and other forms of communication. Instead of spashing out on some new equipment and later discovering it is far from what you imagined the next best thing would be to learn more about it through the user group and then decide whether or not you want to buy it. Another aspect is that most of this particular groups founders have already been involved in other computer user groups, which gives first hand experience. We are willing and able to listen to you, to hear what you as a member may have to contribute to its livelihood. As a group we need members to make it better and more worthwhile to attend, and for you as one of its members to be at a greater advantage in the long run.

BobJones.

Attending the User Group has given me the oppurtunity to show the problems I am experiencing to other more adept operators and recieve the help required to put it right. This is something that is needed in an area where users are communicating as in the Brisbane greater area, as it allows the workshop atmosphere to encourage those who would normally sit quietly to have their say without the formality of an official meeting. So far at the gatherings we have had an opportunity to view software and hardware written, built or bought by various members. Also with the assistance of J. D'Alton (of VSOFTWAREZ), L. Taylor and J. Wilkins, folks have been able to obtain hard copy printouts of various screen displays. We also had a demonstration of a game which required two computers and monitors-which is still in the development stage, when completed it hopefully will lead to yet more challanging games programs for the VZ. Keep up the good work JEREMY. We also have had both disk and tape based systems available for use, along with three examples of Printer Plotters , which allow for varied ideas and opinions. We welcome users and friends of all ages and stages of comprehension of this useful machine to come along and share some time with us.

In closing I wish to convey my appreciation to the assistance given by:- John D'Alton, Larry Taylor, Bob Kitch and Bruce Kitch.

Eddie Tomes

Some of the happy VZ folk at the first VworkshopZ.

CUT

***** DATA SHEET *****

Date ....19..... Code # if known ....
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............................
....

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.
AUSTRALIA. 'phone (07) 371 3707.

Unlike our software prices, these prices do NOT include postage. Always include extra money and we will send you back any surplus money in the parcel or credit it for future LE'VZs, if you are an OOP. Prices in Australian dollars at1st. of May. 1987. Items available while stocks last. NO warranty on USED items.

VZ data recorder   used $ 30.00.
GP100 printer ribbons   new $ 22.00 for two.
These are not the exact type, but a few minutes fiddle.
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.

BOOKS.
VPROGRAMMEZ-VZ-VZ   new $ 18.50 each.
postage is included.
BASIC Easier and Faster TRS80 new $ 10.00 each.   By
Lewis Rosenfelder.

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.

UNLOCKING THE VZ SECRETS.

Since 1984 I have had a love hate relationship with my VZ 200, I have found it to be incredibly interesting, sometimes satisfying and frequently exasperating.

During this time, with the aid of some relativly low priced hardware and software I have managed to build up a very usable system. However when it came to programming the "VZ" myself I found it usually very tedious often puzzling and occasionaly quite startling.

Because I have had no formal tuition in relation to programming, all of my programs were written with a lot of luck and hours of trial and error even so, I have had a few successes, but it wasn't until we had our first users group meeting that I realized what a benefit regular meetings could be.

I had written a small educational program almost a year ago and it worked fairly well except for a small "BUG" which would occasionaly surface and try as I might I couldn't seem to locate it, but after only a few words with one of the more knowlegable members present, I was able to understand where the problem lay and correct it, only a fellow programmer can know the joy you feel when this happens.

There must be lots of other budding programmers out there with the same sort of problems and no amount of books or articles can help as much as a few minutes with a person who can point you in the right direction.

I hope these few lines will encourage more VZ'ers to take advantage of the opportunities our users group offers.

John Wilkins.

Queensland Day
June 6