

# - LE'VZ 200-300 OOP -

SEPT 1986. #13 A\$1.00. J.C.E.D'Alton. 39 Ropes St., TOOONG. QLD. 4066.

AUSTRALIA.

Hi OOPs.

Some may like to that I had a fantastic skiing holiday on Mt. Hotham from the 21st. to the 26th. of July. Yes, I am all in one Piece and ready to carry on as before. It was during that week in which unusual weather conditions prevailed in that snow fell apparently for the first time on record in name areas. Hobart airport was closed and snow fell at Tullamarine. Oh ... what beauts on the mountain.

I did not talk to any OOP's on the mountain, but made a few 2 metre "ham" contacts from the summit with all my ski gear on and from my Arlberg apartment via the Modonaa repeater, 14700MHz. I certainly recommend Mt. Hotham to beginner and expert skiers alike, although the runs are quite short and so a lot of lift riding has to be done.

My visit to Melbourne after skiing was quite sucessful as well as meeting four OOPs at the Richmond D.C.E. store. A report on this elsewhere.

There has been a minimum of communications from OOPs and others in regard to the "stirrings" I did in the last LE'VZ about the Potential uses of the VZ. Would OOPs who are able to supply or build various hardware Please contact me so that I can print in #14 LE'VZ your name and address and Prices. Scott La Brun is offering ComPuruse units.

It has been suggested that I start a Software Library, but as many OOPs know, I did start one but was unsucessful due to lack of interest. Perhaps more communication with Mr. Bob Kitch by those interested would be beneficial. Anyway, honestly I now do not have the time to conduct one.

As I am receiving so much mail now with much of it requiring an answer/s, I request that a S.R.S.E. be sent, as it is costing me quite a bit in Postage. More so when the Postal charges increase again.

*God Bless to all — John.*

## VSOFTURED-WHITZ-HARDWAREZ BOOK.

I am printing a small book in A4 size as D.C.E. have no books other than the new Technical Manual for sale at Present. It is mainly for beginners to computing with short Basic Programme listings to start with, leading up to longer Programmes of about three Pages long.

It also contains hints and kinks to make computing a little easier. Then there are small and larger hardware modifications and units for folk who are handy with a soldering iron. For the more advanced "Hacker" there are small and larger Machine Language routines for the Z80.

Although it is advertised in the August 1986 issue of Australian Computer, it has not yet been for sale just yet.



This is the continuation of MEAN STREETS by Mr. Davis, from LE'VZ # 12.

785 Z=0:A1=0:FORN=11T015:IFE(

N,1)=2,Z=E(N,0)

786 Z=0:A1=0:FORN=11T015:IFE(N,1)=2,Z=E(  
N,0)  
787 FCRN=11T015:IFE(N,1)=0,A1=N1:0A-E(N,  
N,1)=2,N1=15  
788 NEXT:NEXT:IFE(A1)>0,715  
789 FORN=1T05:IFE(N,1)=0A(N,2)=2A(N,  
N,1)=2,N1=2,810  
790 NEXT:GOT0855  
791 A2>E(1,0)  
792 FCRN=1T010:IFE(N,1)=0A(N,2)=2A(N,  
N,3)=2A(N,4)=2,825  
793 NEXT:GOT0855  
794 A3>E(N,0)  
795 FCRN=11T015:IFE(N,1)=0A(N,2)=2A(N,  
N,3)=2A(N,4)=2,840  
796 NEXT:GOT0855  
797 A4>E(N,0):FORN=1T08:CLS:PRINTCHR\*(18  
):PRINTCHR\*(10):PRINT\*(T(1))  
801 PRINT" HAS SOLVED IT!!"  
805 FORN=1T0200:NEXT:CLS:FORN=1T0200:N  
EXT:NEXT:Z=1:XX=1  
806 GOSUB400  
809 CLS:PRINTCHR\*(10):PRINTCHR\*(10):PRIN  
T" ELEMENTARY, MY DEAR ";  
811 PRINT"?":PRINTCHR\*(10):PRINTCHR\*(10  
):END  
815 PRINT"ERROR":STOP  
816 RETURN  
817 K\$=INKEY\$  
818 A\$=INKEY\$  
819 IF A\$="" ,869  
820 A=INT(VAL(A\$)):RETURN  
821 PRINT#480," PRESS SPACE TO CONTIN  
UE ":"PPINT#0,T,"  
822 K\$=INKEY\$  
823 A\$=INKEY\$  
825 IF A\$<>" ",880ELSERETURN  
826 GOT0825  
835 FORN=1T01000:NEXT:RETURN



YOU . WILL need a  
magnifying glass for  
the rest of MEAN  
STREETS, sorry.

Oh how beautiful it  
was at Mt. Hotham.  
Guess who in the ski  
gear??

#### Dave Boyce's VZ system.

Dave is an avid "hacker" which enables him to expand on the basic VZ. Hopefully, this is the first report of what extra hardware OOP's and others are connecting to the VZ.

Big keyboard with extra function keys.  
28K RAM.

Disc Drive.

2K RAM, 6000H to 67FFH.

VZ Printer Plotter.

Brother M-1009 Dot Matrix printer.

Set of joysticks.

Speech Synthesiser, Compumuse EA.

Two printer buffers. 16K and 64K.

Adapter board to run joysticks and printer at the same time.

VZ Data Recorder.

LE'VZ #13 P2.

LET 1/2 #13 P3

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100 CLS:PRINT "WELCOME TO THE BIRTHDAY CLOCK":PRINT
110 PRINT "I WILL NEED SOME DETAILS FROM YOU"
120 INPUT "ENTER YOUR NAME: ";N$;CLS
130 INPUT "ENTER YOUR BIRTHDAY: ";D$;CLS
140 INPUT "ENTER THE YEAR: ";Y%;CLS
150 PRINT "EACH INPUT ELEMENT SHOULD BE SEPARATED FROM THE NEXT"
160 PRINT "BY A COMMA, ),";PRINT
165 INPUT "ENTER DAY OF THE WEEK (SUN=1, MON=2, TUE=2, SAT=7)";I%
170 INPUT "ENTER TODAY'S DATE(D,M,YR, YYYY) ";D%,M%,YR%
180 PRINT :INPUT "ENTER YESTERDAY'S DATE(DD,MM,YYYY) ";D%,E%,F%
190 PRINT :INPUT "ENTER YOUR BIRTHDATE(DD,MM,YYYY) ";G%,H%,J%
205 INPUT "ENTER YOUR NAME, PLEASE";N$;
210 IF (B=E)*(A>D+1)+(J>C)+(J>F)+(A>31)
+ (D>31)+(G>31) THEN 250
220 IF (D>J)+(B>12)+(E>12)+(G>12)+(B>E)
*(A>1) THEN 250
230 GOTO 260
250 PRINT TAB(5), "INPUT ERROR TRY AGAIN"
260 GOTO 165
260 IF F-J<2 THEN PRINT "BIRTHDATE TOO CLOSE FOR BIRTHDAY":GOTO 170
300 REM DAYS IN FULL YEARS BETWEEN BIRTHDAY AND YESTERDAY
310 D=(J-1)-(U+1):GOSUB 260:D=U-(J-365)+2
:IF Y>U THEN Y=Y-U
320 K=D-D-E-1:D=1:D=U-W-D:GOSUB 30
260 GOSUB 30:D=1-F+F*(E>4)*(E>2)*THE
N G=G+1
320 W=G*D:K=D-W:D=LINKY4:K=LINKY4:IF K<0 THEN /
THIS YEAR TO YESTERDAY
400 K=0:D=12:D=H+1:D=13 THEN 430

```

FOR 1980 PRINT IT'S AT LINE 41;M+1

YES PRINT IT'S > X>PAGE<<< TO CONTINUE

860. K\$=INKEY\$:Q\$=INKEY\$

870 IF Q\$>" " THEN 860 ELSE RETURN

880 REM CALCULATE DAYS IN COMPLETE YEAR

890 CLS

900 S=0:FOR N=T TO S:R=R+1

911 Q= P GOTO 931,928,931,932,931,930,93  
1,931,930,931,932,931

925 NEXT:RETURN

928 Q=L+28:GOTO 925

930 Q=Q-30:GOTO 925

931 Q=Q-31:GOTO 925

930 DATA SUNDAY,MONDAY,TUESDAY,WEDNESDAY

,THURSDAY

930 DATA FRIDAY,SATURDAY

2000 REM ADJUST FOR LEAPYEAR SUB

2010 Z=INT((Q+30)/4):IF J+1>1900THENRETURN

R

2020 R=INT((J+19)/100):FORN=1STO0STEP-1:I  
FR=NTHEN2050

2030 NEXT

2050 IF R\*100=J+1 THEN R=R-1

2060 IF J+1>1600 THEN Z=Z-(19-R):RETURN

2070 IF J+1>1200 THEN Z=Z+1-(19-R):RETURN

R

2080 IF J+1>800 THEN Z=Z+2-(19-R):RETURN

2090 IF J+1>400 THEN Z=Z+3-(19-R):RETURN

2095 Z=Z+4-(19-R):RETURN

3000 REM CALCULATE AND DRAW SUB

3100 FORN=11TO114:P=P+R:IFP>TTHENP=1

3200 X=(P\*180)/<>:X=INT(X+.5)

3201 IFY>=182THENX=X-180:X=-X

3400 X=X/52.23578

3440 Y=Y-XXXXXX/6+XXXXXXX/120-XXXXXXX

XXXXXX/5042

3450 Y=Y-XXXXXX/8+XXXXXX/8\*XXXXXX/362880

3460 X=N:Y=INT((Y-100)/+.5)+16:SET(X,Y)

:NEXT:RETURN

2.1.1. EDITOR FACIMILED EDITOR.

THE 1980 EDITOR WAS SENT IN BY CRAIG DAWSON.  
Mr. Dawson wrote that neither of the  
two 1980 EDITOR PROGRAMS THAT HE RECEIVED  
WERE USEABLE. THE EDITOR HE RECEIVED FROM MELVILLE  
CRAVEN WAS NOT WORKING. THE EDITOR HE RECEIVED FROM  
CLIFFORD HARRIS WAS WORKING. Mr. Dawson did note that  
that particular version was.

THE EDITOR LOGO PICTURE IS LOCATED IN THE  
DOCUMENTED FORM OF THE

DATA STATEMENT. 1980 EDITOR SHOULD BE ED.HEW

1981 EDITOR SHOULD BE ED.HEW

1982 EDITOR SHOULD BE ED.HEW

1983 EDITOR SHOULD BE ED.HEW

1984 EDITOR SHOULD BE ED.HEW

\*\*\*\*\* NOTE \*\*\*\*\*  
LINE 911 CONTAINS AN ON GOTO STATEMENT  
AND WILL HAVE TO BE ENTERED FIRST  
USING THE FOLLOWING INSTRUCTIONS  
911 ! R GOTO 931,928,ETC  
POKE 31468,161  
**911**  
ONCE THIS IS DONE LINE WILL NOT LIST  
AND YOU CANNOT EDIT IT  
OR BETTER STILL GET A COPY OF JOHN'S  
VZ 200 EXTENDED BASIC THAT GIVES YOU  
THIS AND OTHER HIDDEN COMMANDS.

4.1.1. EDITOR PATCH TO ENABLE  
4.1.1.1. POKES TO SET UP EDITOR  
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4.1.1.1.351. 11 16,2344  
4.1.1.1.352.

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100 CLS:PRINT "BICKNETH CLOCK":PRINT
110 PRINT "I WILL NEED SOME DATES FROM YOU"
120 PRINT "ALWAYS ENTER THE COMPLETE FOUR
    DIGIT YEAR"
130 PRINT "EACH INPUT ELEMENT SHOULD BE SE-
    PERATED FROM THE NEXT"
140 PRINT "BY A COMMA, ,":PRINT
150 INPUT "ENTER DAY OF THE WEEK (SUN=1,
    MON=2, SAT=7)";I
160 INPUT "ENTER TODAY'S DATE(DD,MM,YYYY)
    ";A,B,C,D,E,F
170 PRINT "ENTER YESTERDAY'S DATE(DD
    ,MM,YYYY) ";D,E,F
180 PRINT :INPUT "ENTER YOUR BIRTHDATE(DD,
    MM,YYYY) ";G,H,J
190 INPUT "ENTER YOUR NAME, PLEASE";A$
200 IF (B-E)*(G>D)+((J>C)+(J>F)+(H>31)
    +(D>31)+(G>31))THEN 250
210 IF ((J>D)+(G>12)+(L>12)+(H>31)+(E>2L)
    +(A>1)) THEN 250
220 GOTO 260
230 GOTO 260
240 PRINT TAB(5), "INPUT ERROR TRY AGAIN
    ";GOTOM5
250 IF F-J<0 THEN PRINT "BIRTHDATE TOO L
    USE FOR ACCURACY" GOTO170
260 PRINT TAB(5), "INPUT ERROR TRY AGAIN
    ";GOTOM5
270 IF F-J>30 THEN PRINT "BIRTHDATE TOO L
    USE FOR ACCURACY" GOTO170
280 INPUT "ENTER DAY OF THE WEEK (SUN=1,
    MON=2, SAT=7)";I
290 INPUT "ENTER YOUR NAME, PLEASE";A$
300 INPUT "ENTER YOUR BIRTHDATE(DD,MM,YYYY)
    ";B,C,D,E,F,G,H,J
310 Q=(F-1)-(J+1):GOSUB 2000:Y=(Q*365)+2
    :IF Y<0 THEN Y=0
320 INPUT "ENTER DAY OF THE WEEK (SUN=1,
    MON=2, SAT=7)";I
330 INPUT "ENTER YOUR NAME, PLEASE";A$
340 INPUT "ENTER YOUR BIRTHDATE(DD,MM,YYYY)
    ";B,C,D,E,F,G,H,J
350 INPUT "ENTER DAY OF THE WEEK (SUN=1,
    MON=2, SAT=7)";I
360 INPUT "ENTER YOUR NAME, PLEASE";A$
370 INPUT "ENTER DAY OF THE WEEK (SUN=1,
    MON=2, SAT=7)";I
380 INPUT "ENTER DAY OF THE WEEK (SUN=1,
    MON=2, SAT=7)";I
390 INPUT "ENTER DAY OF THE WEEK (SUN=1,
    MON=2, SAT=7)";I
400 R=H:S=12:T=H+1:I=F-13 THEN 430

```

100 PRINT "(C) 1981 JOHN H. GALT #13M-1  
 105 PRINT "PRES. YOUR PRICE <C> TO CONTINUE  
 110  
 115 K\$=INKEY\$:S\$=INKEY\$  
 120 IF S\$<>" " THEN 860 ELSE RETURN  
 130 REM CALCULATE DAYS IN COMPLETE YEAR  
 132  
 138 Q=0:FOR N=1 TO S:R=R+1  
 141 ON R GOTO 931,928,931,930,931,930,931,  
 1,931,932,931,930,931  
 145 NEXT:RETURN  
 152 Q=R+28:GOTO 925  
 158 Q=G+30:GOTO 925  
 161 Q=G+31:GOTO 925  
 168 DATA SUNDAY,MONDAY,TUESDAY,WEDNESDAY,  
 ,THURSDAY  
 170 DATA FRIDAY,SATURDAY  
 2000 REM ADJUST FOR LEAPYEAR SUB  
 2010 Z=INT((G+R)/4):IF J+1>1800THENRETURN  
 1  
 2220 R=INT((J+18+180)/180):FORN=18TO0STEP-1:I  
 F R=N THEN 2050  
 2030 NEXT  
 2050 IF R\*100=J+1 THEN R=R-1  
 2060 IF J+1>1800 THEN Z=Z-(18-R):RETURN  
 2070 IF J+1>1200 THEN Z=Z+1-(18-R):RETURN  
 1  
 2280 IF J+1>880 THEN Z=Z+2-(18-R):RETURN  
 2080 IF J+1>480 THEN Z=Z+3-(18-R):RETURN  
 2295 Z=Z+4-(18-R):RETURN  
 3020 REM CALCULATE AND DRAW SUB  
 3100 FCN=11TO14:P=P+R:IF P>TTHENP=1  
 3220 X=(P\*180)/C:X=INT(X+.5)  
 3201 IF X>=180 THEN X=X-180:X=-X  
 3422 X=X\*57.29528  
 3442 Y=Y-XXXXXX6+XXXXXXXXXX120-XXXXXXX  
 XXXX/5040  
 3452 Y=Y-XXXXXX8XX8XX8XX362880  
 3460 X=N:Y=INT(C(Y-1000+.5)+18:SET(X,Y)  
 :NEXT:RETURN

\*\*\*\*\* NOTE \*\*\*\*\*  
 LINE 911 CONTAINS AN ON GOTO STATEMENT  
 AND WILL HAVE TO BE ENTERED FIRST  
 USING THE FOLLOWING INSTRUCTIONS  
 911 ! R GOTO 931,S28,ETC  
 POKE 31469,161 **911**  
 ONCE THIS IS DONE LINE WILL NOT LIST  
 AND YOU CANNOT EDIT IT  
 OR BETTER STILL GET A COPY OF JOHN'S  
 V2 200 EXTENDED BASIC THAT GIVES YOU  
 THIS AND OTHER HIDDEN COMMANDS.

2010 Z=0:DATA PATCH TO ENRASE  
 2020 G=1:T=0,F=5,PA=1000,0,BD  
 2030 Z=1:PA=1000,T=1,F=5  
 2040 Z=2:PA=1000,T=1,F=5  
 2050 Z=3:PA=1000,T=1,F=5  
 2060 Z=4:PA=1000,T=1,F=5  
 2070 Z=5:PA=1000,T=1,F=5  
 2080 Z=6:PA=1000,T=1,F=5  
 2090 Z=7:PA=1000,T=1,F=5  
 2100 Z=8:PA=1000,T=1,F=5  
 2110 Z=9:PA=1000,T=1,F=5  
 2120 Z=10:PA=1000,T=1,F=5  
 2130 Z=11:PA=1000,T=1,F=5  
 2140 Z=12:PA=1000,T=1,F=5  
 2150 Z=13:PA=1000,T=1,F=5  
 2160 Z=14:PA=1000,T=1,F=5  
 2170 Z=15:PA=1000,T=1,F=5  
 2180 Z=16:PA=1000,T=1,F=5  
 2190 Z=17:PA=1000,T=1,F=5  
 2200 Z=18:PA=1000,T=1,F=5  
 2210 Z=19:PA=1000,T=1,F=5  
 2220 Z=20:PA=1000,T=1,F=5  
 2230 Z=21:PA=1000,T=1,F=5  
 2240 Z=22:PA=1000,T=1,F=5  
 2250 Z=23:PA=1000,T=1,F=5  
 2260 Z=24:PA=1000,T=1,F=5  
 2270 Z=25:PA=1000,T=1,F=5  
 2280 Z=26:PA=1000,T=1,F=5  
 2290 Z=27:PA=1000,T=1,F=5  
 2300 Z=28:PA=1000,T=1,F=5  
 2310 Z=29:PA=1000,T=1,F=5  
 2320 Z=30:PA=1000,T=1,F=5  
 2330 Z=31:PA=1000,T=1,F=5  
 2340 Z=32:PA=1000,T=1,F=5  
 2350 Z=33:PA=1000,T=1,F=5  
 2360 Z=34:PA=1000,T=1,F=5  
 2370 Z=35:PA=1000,T=1,F=5  
 2380 Z=36:PA=1000,T=1,F=5  
 2390 Z=37:PA=1000,T=1,F=5  
 2400 Z=38:PA=1000,T=1,F=5  
 2410 Z=39:PA=1000,T=1,F=5  
 2420 Z=40:PA=1000,T=1,F=5  
 2430 Z=41:PA=1000,T=1,F=5  
 2440 Z=42:PA=1000,T=1,F=5  
 2450 Z=43:PA=1000,T=1,F=5  
 2460 Z=44:PA=1000,T=1,F=5  
 2470 Z=45:PA=1000,T=1,F=5  
 2480 Z=46:PA=1000,T=1,F=5  
 2490 Z=47:PA=1000,T=1,F=5  
 2500 Z=48:PA=1000,T=1,F=5  
 2510 Z=49:PA=1000,T=1,F=5  
 2520 Z=50:PA=1000,T=1,F=5  
 2530 Z=51:PA=1000,T=1,F=5  
 2540 Z=52:PA=1000,T=1,F=5  
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 4570 Z=255:PA=1000,T=1,F=5  
 4580 Z=256:PA=1000,T=1,F=5  
 4590 Z=257:PA=1000,T=1,F=5  
 4600 Z=258:PA=1000,T=1,F=5  
 4610 Z=259:PA=1000,T=1,F=5  
 4620 Z=260:PA=1000,T=1,F=5  
 4630 Z=261:PA=1000,T=1,F=5  
 4640 Z=262:PA=1000,T=1,F=5  
 4650 Z=263:PA=1000,T=1,F=5  
 4660 Z=264:PA=1000,T=1,F=5  
 4670 Z=265:PA=1000,T=1,F=5  
 4680 Z=266:PA=1000,T=1,F=5  
 4690 Z=267:PA=1000,T=1,F=5  
 4700 Z=268:PA=1000,T=1,F=5  
 4710 Z=269:PA=1000,T=1,F=5  
 4720 Z=270:PA=1000,T=1,F=5  
 4730 Z=271:PA=1000,T=1,F=5  
 4740 Z=272:PA=1000,T=1,F=5  
 4750 Z=273:PA=1000,T=1,F=5  
 4760 Z=274:PA=1000,T=1,F=5  
 4770 Z=275:PA=1000,T=1,F=5  
 4780 Z=276:PA=1000,T=1,F=5  
 4790 Z=277:PA=1000,T=1,F=5  
 4800 Z=278:PA=1000,T=1,F=5  
 4810 Z=279:PA=1000,T=1,F=5  
 4820 Z=280:PA=1000,T=1,F=5  
 4830 Z=281:PA=1000,T=1,F=5  
 4840 Z=282:PA=1000,T=1,F=5  
 4850 Z=283:PA=1000,T=1,F=5  
 4860 Z=284:PA=1000,T=1,F=5  
 4870 Z=285:PA=1000,T=1,F=5  
 4880 Z=286:PA=1000,T=1,F=5  
 4890 Z=287:PA=1000,T=1,F=5  
 4900 Z=288:PA=1000,T=1,F=5  
 4910 Z=289:PA=1000,T=1,F=5  
 4920 Z=290:PA=1000,T=1,F=5  
 4930 Z=291:PA=1000,T=1,F=5  
 4940 Z=292:PA=1000,T=1,F=5  
 4950 Z=293:PA=1000,T=1,F=5  
 4960 Z=294:PA=1000,T=1,F=5  
 4970 Z=295:PA=1000,T=1,F=5  
 4980 Z=296:PA=1000,T=1,F=5  
 4990 Z=297:PA=1000,T=1,F=5  
 5000 Z=298:PA=1000,T=1,F=5  
 5010 Z=299:PA=1000,T=1,F=5  
 5020 Z=300:PA=1000,T=1,F=5  
 5030 Z=301:PA=1000,T=1,F=5  
 5040 Z=302:PA=1000,T=1,F=5  
 5050 Z=303:PA=1000,T=1,F=5  
 5060 Z=304:PA=1000,T=1,F=5  
 5070 Z=305:PA=1000,T=1,F=5  
 5080 Z=306:PA=1000,T=1,F=5  
 5090 Z=307:PA=1000,T=1,F=5  
 5100 Z=308:PA=1000,T=1,F=5  
 5110 Z=309:PA=1000,T=1,F=5  
 5120 Z=310:PA=1000,T=1,F=5  
 5130 Z=311:PA=1000,T=1,F=5  
 5140 Z=312:PA=1000,T=1,F=5  
 5150 Z=313:PA=1000,T=1,F=5  
 5160 Z=314:PA=1000,T=1,F=5  
 5170 Z=315:PA=1000,T=1,F=5  
 5180 Z=316:PA=1000,T=1,F=5  
 5190 Z=317:PA=1000,T=1,F=5  
 5200 Z=318:PA=1000,T=1,F=5  
 5210 Z=319:PA=1000,T=1,F=5  
 5220 Z=320:PA=1000,T=1,F=5  
 5230 Z=321:PA=1000,T=1,F=5  
 5240 Z=322:PA=1000,T=1,F=5  
 5250 Z=323:PA=1000,T=1,F=5  
 5260 Z=324:PA=1000,T=1,F=5  
 5270 Z=325:PA=1000,T=1,F=5  
 5280 Z=326:PA=1000,T=1,F=5  
 5290 Z=327:PA=1000,T=1,F=5  
 5300 Z=328:PA=1000,T=1,F=5  
 5310 Z=329:PA=1000,T=1,F=5  
 5320 Z=330:PA=1000,T=1,F=5  
 5330 Z=331:PA=1000,T=1,F=5  
 5340 Z=332:PA=1000,T=1,F=5  
 5350 Z=333:PA=1000,T=1,F=5  
 5360 Z=334:PA=1000,T=1,F=5  
 5370 Z=335:PA=1000,T=1,F=5  
 5380 Z=336:PA=1000,T=1,F=5  
 5390 Z=337:PA=1000,T=1,F=5  
 5400 Z=338:PA=1000,T=1,F=5  
 5410 Z=339:PA=1000,T=1,F=5  
 5420 Z=340:PA=1000,T=1,F=5  
 5430 Z=341:PA=1000,T=1,F=5  
 5440 Z=342:PA=1000,T=1,F=5  
 5450 Z=343:PA=1000,T=1,F=5  
 5460 Z=344:PA=1000,T=1,F=5  
 5470 Z=345:PA=1000,T=1,F=5  
 5480 Z=346:PA=1000,T=1,F=5  
 5490 Z=347:PA=1000,T=1,F=5  
 5500 Z=348:PA=1000,T=1,F=5  
 5510 Z=349:PA=1000,T=1,F=5  
 5520 Z=350:PA=1000,T=1,F=5  
 5530 Z=351:PA=1000,T=1,F=5  
 5540 Z=352:PA=1000,T=1,F=5  
 5550 Z=353:PA=1000,T=1,F=5  
 5560 Z=354:PA=1000,T=1,F=5  
 5570 Z=355:PA=1000,T=1,F=5  
 5580 Z=356:PA=1000,T=1,F=5  
 5590 Z=357:PA=1000,T=1,F=5  
 5600 Z=358:PA=1000,T=1,F=5  
 5610 Z=359:PA=1000,T=1,F=5  
 5620 Z=360:PA=1000,T=1,F=5  
 5630 Z=361:PA=1000,T=1,F=5  
 5640 Z=362:PA=1000,T=1,F=5  
 5650 Z=363:PA=1000,T=1,F=5  
 5660 Z=364:PA=1000,T=1,F=5  
 5670 Z=365:PA=1000,T=1,F=5  
 5680 Z=366:PA=1000,T=1,F=5  
 5690 Z=367:PA=1000,T=1,F=5  
 5700 Z=368:PA=1000,T=1,F=5  
 5710 Z=369:PA=1000,T=1,F=5  
 5720 Z=370:PA=1000,T=1,F=5  
 5730 Z=371:PA=1000,T=1,F=5  
 5740 Z=372:PA=1000,T=1,F=5  
 5750 Z=373:PA=1000,T=1,F=5  
 5760 Z=374:PA=1000,T=1,F=5  
 5770 Z=375:PA=1000,T=1,F=5  
 5780 Z=376:PA=1000,T=1,F=5  
 5790 Z=377:PA=1000,T=1,F=5  
 5800 Z=378:PA=1000,T=1,F=5  
 5810 Z=379:PA=1000,T=1,F=5  
 5820 Z=380:PA=1000,T=1,F=5  
 5830 Z=381:PA=1000,T=1,F=5  
 5840 Z=382:PA=1000,T=1,F=5  
 5850 Z=383:PA=1000,T=1,F=5  
 5860 Z=384:PA=1000,T=1,F=5  
 5870 Z=385:PA=1000,T=1,F=5  
 5880 Z=386:PA=1000,T=1,F=5  
 5890 Z=387:PA=1000,T=1,F=5  
 5900 Z=388:PA=1000,T=1,F=5  
 5910 Z=389:PA=1000,T=1,F=5  
 5920 Z=390:PA=1000,T=1,F=5  
 5930 Z=391:PA=1000,T=1,F=5  
 5940 Z=392:PA=1000,T=1,F=5  
 5950 Z=393

CL... THE END OF LEVITON! ONE last this interesting lot for...

As most VZ users are aware, there is a routine in ROM for a beep contained at 13392-13405 (3450H-345dH). As this is ROM, we cannot change the pitch/duration of the beep, but we can copy the M/L onto user RAM ie;

```
FOR I=0TO13:A=PEEK(I+13392):POKE-32768+I,A:NEXT
```

By setting the machine code pointer (POKE30862,0:POKE30863,128) and executing (X=USR(0)), we obtain the same beep. As this routine is now in RAM, we can alter the frequency ie;

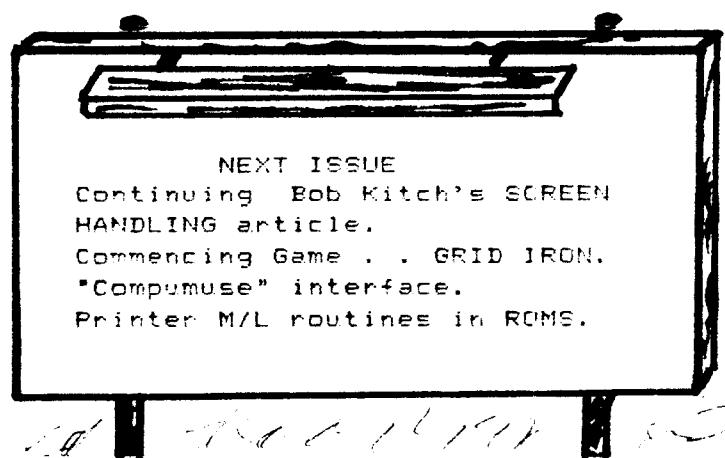
```
FOR I=1TO255:POKE-32766,I:X=USR(0):NEXT
```

We now have sound effects covering a much broader spectrum than that previously obtainable in BASIC, simply by POKEing values at address -32766 and executing. To alter duration, POKE in values at address -32763. This enables very suitable sound effects for games purposes.

Also, I managed to tap into the VZ's tiny speaker and connect it to an external 200mm woofer. Eventually I plan to feed this output through an amplifier and use my trusty VZ for music synthesis.

Here also is a program for HI-RES circle drawing;

```
10 CLS:PI=3.14
20 INPUT "X CENTRE";X
30 INPUT "Y CENTRE";Y
40 INPUT "RADIUS ";R
50 MODE(1)
60 FOR A=.02TO2.02*PISTEPP/(PI*R)
70 SET((R*SIN(A)+X),(R*COS(A)+Y))
80 NEXT
90 GOT090
```



Teacher :- "Give me a sentence starting with I, Susie."  
"Yes Miss. I is -"  
"No, no, no, Susie. You don't say "I is", you say "I am"."  
"Alright Miss. I am the ninth letter in the alphabet".

\* \* \* SOFTWARE FOR SALE FROM VSOFTWAREZ \* \* \*

SEPTEMBER 1986.

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 of E4. 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 now 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. \* \* \*

DB5 LE'VZ STATEMENT V2.0. \$185.00. VZ4.

For small business use. Based on LE'VZ D'BASE. Random access records. Requires the Disc Drive System, a printer and VZ DTR. Process and print end of month statement/s, labels, pay into account etc. All money calculations carried out, IE. Debit, Paid in and Statement \$ totals. Comes with a 20 page instruction booklet. Write for more information or see a demonstration.

DB16 CHEQUE LEDGER DISC    \$ 60.00.    VZ3-VZ4.

A small business unit based on T/B1 (CASHBOOK LEDGER) but for Disc operation only, in that all data is saved/loaded to/from Disc.

Type in :- date, paid to, cheque #, bank \$ and 12 other \$ columns. View data, correct (edit) data, printout of all data across two A4 sheets of paper by printing the left side then the right side. This allows an 80 column printer such as a GP100 or similar rather than an expensive wide business type.

Each "type in session" is saved to Disc, which is loaded in at the next session so that new data is typed in and merged. This is then saved to Disc. In this way the month's or period's file is built up ready to be printed at the close of the month/period.

At the close of that month/period, you type in the previous month's/period's running totals. All \$ totals are then calculated and printed at the bottom.

D/T19 COPY/PROTECT.      \$ 30.00.    VZ1-VZ4.

Incorporates two programmes BREAKPROOF and FILECOPIER. Using BREAKPROOF on Basic programmes produces versions which autorun and will automatically restart, if the <BREAK> key is pressed. FILECOPIER allows the transfer of all Basic or Machine Code programmes to or from tape or disc.

DU20. DISK GUARD.      \$ 60.00.    VZ1-VZ4.

DISK GUARD prevents easy copying of programmes stored on Disc. IE. <DCOPY> and FILECOPIER cannot copy a DISKGUARDED Disc. Basic programmes are automatically BREAKPROOFED to produce an autorun programme, which will rerun if the <BREAK> key is pressed. That programme cannot be effectively listed/listed.

T/DU21 VZ-EPSON P/FATCH. \$ 10.00. 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.

DU22 Disk Copy. \$ 10.00. VZ1-VZ4.

Another M/L utility which is similar to DCOPY with the added facility of VERIFY. This is done as it runs and shows the sector numbers.

### EXISTING SOFTWARE.

D/TU2	EDITOR/ASSEMBLER	\$ 20.00. VZ3-VZ4.
D/TE1	CASH BOOK LEDGER	\$ 20.00. VZ3-VZ4.
TJ4	COLOUR GRAPHICS	\$ 10.00. VZ3-VZ4.
D/TE1	KEYBOARD	\$ 8.00. VZ1-VZ4.
D/TE2	WORDMATCHING	\$ 10.00. VZ3-VZ4.
D/TE3	MEATPIES	\$ 10.00. VZ3-VZ4.
D/TU3	UTILITY'S	\$ 15.00. VZ3-VZ4.
TJS	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	\$ 12.50. VZ1-VZ4.
MANSION... VZ3-VZ4. for NOVA		
D/TG3	VZ MONOPOLY.	\$ 12.50. VZ3-VZ4.
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	\$ 15.00. 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 its lf.		
TU1	EXTENDED BASIC	\$ 12.50. VZ3-VZ4.
TU11	ARRAY/RESTORE	\$ 14.95. VZ3-VZ4.
You must have TU10 to use TU11.		
D/TU12	FILESEARCH	\$ 10.00. VZ1-VZ4.
DE1-8	EDUDISK	\$ 50.00. VZ3-VZ4.
T/DE9	MEATPIES V2.	\$ 15.00. VZ3-VZ4.
TU18	LOAD XX20 FILES.	\$ 20.00. VZ3-VZ4.
This new version finds VZ memory size itself.		
T/DG36	BLACKJACK.	\$ 20.00. VZ3-VZ4.
T/DG37	POKER MACHINE.	\$ 20.00.
T/DG38	WORD SQUARES.	\$ 10.00.
T/DG39	COMPUTER MONOPOLY.	\$ 15.00.
T/DG40	TRIVIAL CULT.	\$ 15.00.
T/DG41	SCOTLAND YARD.	\$ 15.00.



NOTE ON TU9  
MONITOR/DEBUGGER.

The new version  
2.0, comes with  
instructions to  
enable the purchaser  
to save it to Disc.

### NEW CLUBS/USER GROUPS.

#### VZ USER

Mr. Mark Harwood, P.O. Box 154,  
DURAL. NSW. 2158.  
I understand regular meetings are  
held. Their Newsletter is rather  
informative. I don't know their  
fees, sorry.

#### VZ DOWN UNDER.

Mr. Scott Le Brun, 5 Cameron Court,  
WANTIRNA. VIC. 3152.  
I have no other details.

#### Change of address.

#### AD LIB VeeZed MICRO CLUE.

Gordon Browell has moved from the  
Northern Territory and is now  
located in QLD.  
13 Brookes St., BIGGENDEN. QLD.  
4621.

Over the next few editions of LE'VZ, it is intended to introduce the users to some of the hardware aspects of the video display on the VZ and some of the software implementations of the various screen modes.

### 1 Introduction to the MC6847 Video Display Generator.

The VZ-200/300 uses the Motorola MC6847 Video Display Generator (VDG) chip (sometimes referred to as a Cathode Ray Tube Controller - CRTC) to interface data read from the video RAM section of memory and to produce a modulated RF video signal or monitor output. The VDG is capable of operating in 14 different display modes, however only 3 of these are implemented on the VZ.

The VDG has the complex task of converting data from the screen memory (2K video RAM) into the form necessary for the raster scan display used in televisions and monitors. On these devices, the image is 'drawn' on the screen one horizontal scan line at a time. The 'spot' moves across the screen from right to left and its brightness or color (chroma) is varied to produce the required display. In practice, the whole screen is built up in two passes, the first on even-numbered lines and the second on odd-numbered lines, by a process called 'interlacing' which helps to avoid flicker. The process occurs every 20 ms. or 50 half-frames are drawn every second.

A timing or clock pulse is required to tie the scan rate and memory access cycles of the VDG in with that of the Z80A CPU - otherwise chaos would reign on the bus systems! An external (to the VDG chip) 3.58MHz. clock is used to synchronize both devices. This frequency is required by the VDG to set the correct scan rate. Hence the speed of the CPU is limited by the VDG in the VZ.

The format of the display area under the control of the VDG is actually 256 'dots' across by 192 'dots' down giving a total of 49152 fundamental picture elements (pixels) under the 'control' of the VDG. Each pixel may be one of up to 8 colours depending upon the mode selected.

The screen is 'memory mapped' with each pixel on the screen being represented by a byte (or a number of bits thereof) in the 2K of video RAM. There is a one to one correspondence between the X-Y location of the pixel on the screen and the address of its control information in memory. The sequence of memory addresses which are accessed to extract data to be converted to a video signal is controlled by the VDG. The VDG also keeps track of the position of the moving spot and produces the necessary timing signals to synchronize the display to the computer. It produces for instance the horizontal sync pulse for indicating when the end of the video line has been reached so that the spot can 'flyback' to the beginning of the next scan line.

As users will have observed, the MC6847 does not utilize the entire video screen. The standard video screen consists of 262 scan lines extending across the screen, but the usable display window is offset from the top by 25 lines and extends 192 lines down the screen with a further 25 lines at the bottom being offset. Across the screen, the timing pulses are blanked-off to reduce the useable horizontal width. The linearity of images is better in the central portion of a screen and is used by the VDG.

The MC6847 is capable of generating 14 display modes as set out in Table 1.

TO CONTINUE LE'VZ # 14

## TRIP TO MELBOURNE.

I was in Melbourne on the 20th., 21st., and the 22nd. of July. On Monday the first visit was to the Richmond D.S.E. store, where I met the manager Mr. Julian Reid. Their computer expert was away so an APPY, Mr. Paul Blacker, assisted me on the VZ. I demonstrated our LEIVZ D'Base, Laser Tailor, COPIER and various utilities which included COPYPROTECT, FILESCRAMBLEDCODE and COPIER. Paul showed me the Computeus unit complete with a disc storage device. Julian also showed us his disc based data base unit which he uses to file his books (account) collection. Geoff Earleoff and Peter Clegg were present. I would like to thank Peter for driving me over to the Sunshine City D.S.E. store. There I met the manager Mr. Steve Toth and computer expert Mr. Julian Hallinan-Flanagan. I demonstrated the various software as before. On Tuesday I visited the Box Hill D.S.E. store in the modern railway station shopping complex. The manager Mr. Grant Guy was very interested as I demonstrated the software. In the afternoon I visited the Melbourne City D.S.E. store, where I met Mr. Friar (I think).

I think all those I met at the D.S.E. stores for their friendliness and helpfulness did me demonstrations. I showed various staff unadvertisied facilities of the Macintosh. While, MacDraw, Word, and some basic version of MacPaint and information about Macintosh and Apple's future direction of operation.

I would advise anyone who wants to see any of this information to go to the local Smith Electrical stores that I visited and talk to the man mentioned. Finally, I met the D.S.E. staff of various stores who had put an advertising strip up on display in their store. This of course applies to the stores I did not visit.

JOHN.

## COMPUUS MUSIC SYNTHESISER.

Ever wanted your VZ to Play music? Well here with this little beautifull kit you can let it allow you to play music from a five (5) octave keyboard. It can also be used to programme your own unprinted musical score or even a tape!

You can get this kit now ready to use. See me again. Just connect your COMPUTER INTERFACE into the VZ and you will do. No need to be a genius to do. The kit comes complete with a 500 page Compuus manual, a 100 page and additional a useful handbook of instructions and a useful list of

PC GAME, a complete kit.  
REQUIRES A BATT AND POWER  
CABLE.

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

DATA, MAIL, 34 3rd St. Wantirna.

Telephone 3251 1211 and 3251 1262.  
The kit is now available supplied with  
the manual.

## LIGHT PEN SYSTEM. A\$70.00

Some folk have asked me to explain more about the LIGHT PEN UNIT. The "pen" has a switch and a light sensor so that when it is held against the VDU, it sends the necessary signal to the VZ. The other end of the "pen" connects to a special interface which plugs into the VZ's Printer/Joystick socket. The System tape that comes with it is loaded and run to set up the VZ ready for you to programme for it. The tape also has a few demonstration programmes on it.

An answer quiz requires you to press the "pen" against the VDU on the answer that you choose. One prints on the VDU characters as selected. Others draw patterns.

Very interesting.

LETTER'S TO THE EDITOR.

I am trying to collect together a variety of information on the VZ for the ultimate use of all Users. Most of you will have seen my bibliography of magazine articles for the VZ. (If not, then send me a SSAE). Some of the items I am having trouble locating are Newsletters from old Users Groups.

If anyone has copies of old newsletters, I would like to swap or buy copies - perhaps exchange for some of my reprints.

I am particularly seeking the eight newsletters produced by Luigi Chiodo's Victorian Group - also any newsletters from S.A. and W.A.

Write and let me know what you have (and what you want!).

Bob Kitch, 7 Eurella St., KENMORE Qld. 4069.

---

This page is a contribution to the Australian by Jason Oakley of Toowoomba, QLD.

10 REM CONTRIBUTION FROM JASON OAKLEY  
12 REM PRESS VARIOUS KEYS AND WATCH THE RESULT  
20 CLS  
30 POKE28940, 33  
40 POKE28940, 28  
50 POKE28940, 45  
60 POKE28940, 47  
70 GOTO30

---

WANTED.

A good Z80 M/L book, such as ZACKS or similar.  
Mr. Andrew Seeger, C/O Monbulk P.C., MONBULK. VIC. 3793.

FOOTY FEVER TIME.  
C'MON THE HAWKS IN MELBOURNE.  
SOUTHPORT SHARKS AGAIN THIS YEAR .....  
IN BRISBANE.

"What did your Mother do yesterday, morning, Tommy?"  
She done her shopping, Sock".  
"Done her shopping, Tom? Where's your grammar?"  
"She done her shopping as well, Sock".

Dick Smith Electronics.

The new Technical Manual is now for sale from most stores \$14.95. It is an improvement on the first one, in that it contains more information on the VZ, and of course includes the Disc Drive.

If you would like more hardware to become available from D.S.E. then please keep hounding them.