

DECEMBER 1984 95p

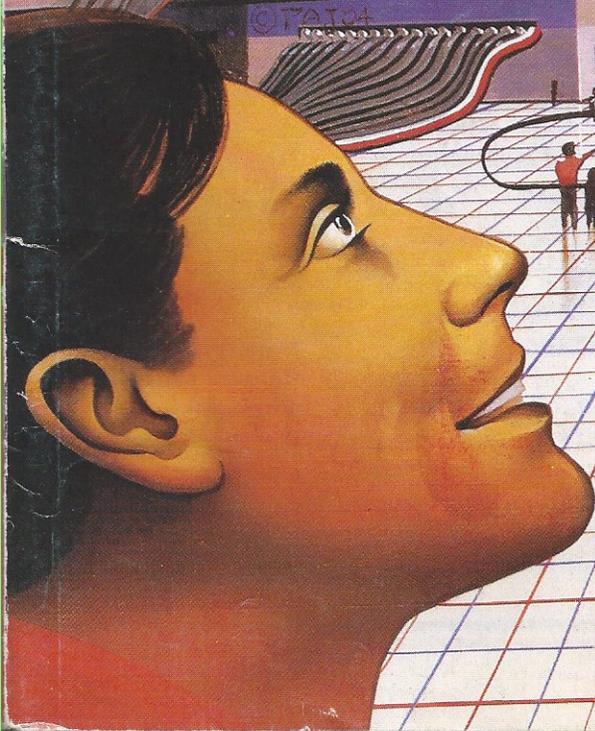
# WHICH MICRO & SOFTWARE REVIEW

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570 IF A$="" THEN MUSIC2,C,12,0:PLAY3,0,7,V
571 IF A$="G" THEN C=1
572 IF A$="H" THEN C=2
573 IF A$="J" THEN C=3
574 IF A$="K" THEN C=4
575 IF A$="L" THEN C=5
576 IF A$=";" THEN C=6
577 IF V<=10 THEN GOTO 582
578 IF A$="," THEN V=V-50
580 IF V>=17000 THEN GOTO 578
582 IF A$="." THEN V=V+50
584 IF A$="M" THEN MUSIC2,7,12,0:PLAY0,0,0,0:GOTO
15
590 IF A$="Z" THEN MUSIC2,7,12,0:PLAY0,0,0,0:GOTO
120
597 IF A$="S" THEN MUSIC2,7,12,0:PLAY0,0,0,0:GOTO
306
598 IF A$="B" THEN MUSIC2,7,12,0:PLAY0,0,0,0:GOTO
254
615 IF A$="C" THEN MUSIC2,7,12,0:PLAY0,0,0,0:GOTO
650
620 GOTO 450
650 PLOT 15,20," ":PLOT15,20,"CHORD"
660 GET A$
670 IF A$="Q" THEN MUSIC2,C,1,0:PLAY3,0,1,V
680 IF A$="W" THEN MUSIC2,C,2,0:PLAY3,0,1,V
690 IF A$="E" THEN MUSIC2,C,3,0:PLAY3,0,1,V
700 IF A$="R" THEN MUSIC2,C,4,0:PLAY3,0,1,V
710 IF A$="T" THEN MUSIC2,C,5,0:PLAY3,0,1,V
720 IF A$="Y" THEN MUSIC2,C,6,0:PLAY3,0,1,V
730 IF A$="U" THEN MUSIC2,C,7,0:PLAY3,0,1,V
740 IF A$="I" THEN MUSIC2,C,8,0:PLAY3,0,1,V
750 IF A$="O" THEN MUSIC2,C,9,0:PLAY3,0,1,V
760 IF A$="P" THEN MUSIC2,C,10,0:PLAY3,0,1,V
770 IF A$="[" THEN MUSIC2,C,11,0:PLAY3,0,1,V
780 IF A$="]" THEN MUSIC2,C,12,0:PLAY3,0,1,V
781 IF A$="G" THEN C=1
782 IF A$="H" THEN C=2
783 IF A$="J" THEN C=3
784 IF A$="K" THEN C=4
785 IF A$="L" THEN C=5
786 IF V<= 10 THEN GOTO 789
787 IF A$="," THEN V=V-50
788 IF V>=17000 THEN GOTO 787
789 IF A$="." THEN V=V+50
790 IF A$="Z" THEN GOTO 120
800 IF A$="B" THEN MUSIC2,7,12,0:PLAY0,0,0,0:GOTO
254
805 IF A$=";" THEN C=6
810 IF A$="S" THEN MUSIC2,7,12,0:PLAY0,0,0,0:GOTO
306
820 IF A$="D" THEN MUSIC2,7,12,0:PLAY0,0,0,0:GOTO
445
825 IF A$="M" THEN MUSIC2,7,12,0:PLAY0,0,0,0:GOTO
15
830 GOTO 660

```

## Renumber — Memotech

Another practical machine code utility to enhance Memotech BASIC. Renumber is designed to work both on its own as well as slot into an interrupt-driven repertoire (see last issue).

Quite simply, the program enables you to renumber line numbers on a BASIC program. (It does not renumber line references on GOTOs, GOSUBs or RESTOREs.) This is extremely useful when it comes to merging one program or subroutine into the body of another (see last issue).

To test the program enter the following commands substituting step size for ST and the line number from which you wish to begin renumbering for FL:  
**POKE (48925),ST**  
**POKE (48926),FL—INT (FL/256**  
**★256**  
**POKE (48927),INT (FL/256)**

LET R =USR (48928)

In the above, USR calls routine CHECK which examines the BASIC program area searching for a program. If such exists then ST and FL are loaded for use in the main loop.

The RENUMR routine finds the starting line in the program and then examines the first four bytes. Taken in pairs these bytes give the line length and the line's number. Having done this, control is passed to an assembler REPEAT...UNTIL loop. Current line length is found and the new line number poked into the succeeding two bytes. Step size is then added onto the last line number to give the next value to be poked in. Length is then added to the current line address and a check is made to see whether the end of the program has been reached. If it has not, then the cycle repeats.

```

10 REM **** BYTE PACK ****
20 REM **** NOV 1984 ****
100 CODE

```

```

803B CHECK: LD HL, (#FACC) ; Check for progra
m in memory.
803E LD A,H
803F OR L
8040 RET Z ; Return if no program to
renumber.
8041 LD BC, (#BF1D)
8045 LD B,0 ; BC=Step between lines 0
to 255.
8047 LD HL, (#BF1E) ; HL=First line nu
mber.
804A RENUMR: LD IX, (#FAAA) ; IX=Start of basi
c.
804E REPEAT: LD E, (IX+0)
8051 LD D, (IX+1) ; DE=Line length.
8054 LD (IX+2),L
8057 LD (IX+3),H ; Poke new line nu
mber into place.
805A ADD HL,BC ; Add step size to HL.
805B PUSH HL
805C ADD IX,DE ; IX=Address of next line.
805E PUSH IX
8060 POP DE ; DE=Address of next line.
8061 LD HL, (#FAAC) ; HL=Top of basic.
8064 AND A
8065 SBC HL,DE ; Subtract line address fr
om top of basic.
8067 JR C,END ; END if address of line >
top of basic.
8069 LD A,H
806A OR L
806B JR Z,END ; END if address of line =
top of basic.
806D POP HL
806E JR REPEAT ; Not finished, renumber n
ext line.
8070 END: POP HL
8071 RET

```

Symbols:  
CHECK 803B RENUMR 804A  
REPEAT 804E END 8070

```

110 REM *****
120 REM **** RENUMBER BASIC LINES ****
130 REM **** MTX 500,512 MICROs ****
140 REM **** (c) E.Roy June.84 ****
150 REM *****

```

## Next Month...

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  - *Timeswitch* — where you and your Atmos dice with death in the avenues of Infinity and the corridors of doom.
  - *Darts* — a great simulation that'll keep you busy on your Spectrum till opening time.