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It's vermin proof.

VOICE OF THE '80

Volume 5 Number 4

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Product Review: The Casio FX-450 Scientific Calculator

By Herman D. Parks

With the great calculating capabilities of the personal computer available to me, who needs a calculator? Why, my computer does! When its too busy to run a hex-dec program.

When away from the nice decimal world of Basic, the need to convert numbers from one base to another comes up often, and of course we have scads of hex-dec programs to choose from (for one, which I highly recommend, see the VOICE, Vol. 2, No.10). But since the computer is usually tied up at the time the conversions are to be made, I have to resort to using a calculator to make them. It is a tedious process on a standard calculator, and up to now the only calculator I know of that makes base conversions directly is the Texas Instrument Programmer. At $60, I deemed it non-cost-effective, and continued to do conversions the tedious way - on a calculator which the bank gave me for opening an account.

Recently, while browsing through the calculator section of a catalog from Consumers Disitributing (a discount catalog showroom chain), I came across the Casio FX-450 - "...65 scientific functions including binary, octal & hexadecimal calculations & conversions..." Their price, $28.97 (indicated list, $39.95).

I bought.

To borrow an expression from the English, this solar-powered gadget is a "bloody marvel". First of all, it does the functions, which I wanted very well. A stab of the mode key followed by a number key puts it into binary, octal, or hex modes or back to decimal. Changing modes causes the displayed value to be converted as long as the display can handle the range. For example: the display can show binary 1111111111 and this converts to hex FFFFFF or octal 7777777777. Wait a minute, can that be right? Well, lets convert any of these to decimal - and we get -1. In other words, all non-decimal modes are in 2's-complement notation in which the setting of the available

bits is equal to a decimal -1. However, the number of available bits depends on the base. If you try converting FFF to binary, you get an error signal because 12 bits is beyond the 10 bits (9 plus the sign bit) available for the display of binary values. You can do four-function arithmetic while in any mode, and then convert the result to any other mode, which means that you can do mixed mode arithmetic like adding a decimal 123 to a hex FAC.

To handle these functions and 60-odd more, the calculator has two panels connected to open like a book. The left panel which includes the number keys has conventional push-button keys, but the right panel uses pressure-sensitive key areas. These work well and include the six letter-keys needed to enter hexadeciamal values. AND they include six logical functions: NEGgate, NOT, AND, OR, XOR, and XNOR. More darn fun.

Beyond the number-base features you get: the trigonometric functions (including hyperbolic), logs and antilogs, scientific notation, engineering notation, a generous set of statistical functions, and powers of x up, down and sidewise. The FX-450 has several other remarkable features. It will give you a random number between .000 and .999; take a factorial up to 69! (which is 1.7 E 98), supply nine universal constants from Plank's constant to Avogadro's constant, and do sexagesimal/decimal conversions.

Whadayya mean, you don't know what a sexasquishimal is? About time I learned. It means expressing an angle in degrees, minutes, and seconds (in other words, base 60), and our little beauty will do arithmetic and go back and forth between this and decimal degrees with ease.

But if you are a hack carpenter like me, the one you may appreciate most is the fraction conversion feature. Why is it I have trouble calculating 2 7/81 - 3 13/64 + 9.372 / 1 82/213? Because I didn't have an FX-450. The FX-450 accepts and displays fractional notation. The first tap of function key will display the value with its lowest common denominator, and the next tap will replace it with its decimal equivalent.

The calculator comes with a first-rate 69-page "Operation Manual" and a book "Strategies for Scientific Calculating" by Morton Rosenstein which appears to be generic to the line of Casio scientific calculators. The book contains chapters on "Real Estate", "The Oceans", and "A Day at the Races". (And you thought science was stuffy.)

Since no review is complete without a knock, I'll oblige by pointing out that the solar cell appears to be starved for light in the dimmer areas of an average room, So forget about having hex by candlelight.

CODE/SRC

by Dave McGlumphy

```
00010          ORG     7000H
00020 DRM      DEFM    'Dave McGlumphy
00030          DEFM    'CODE/DECODE PROGRAM'
00040          DEFB    10
00050          DEFM    '4429 Paula Ln.'
00060          DEFB    10
00070          DEFM    'Chattanooga, Tn. 37415    02/26/84'
00080          DEFB    10
00090 CR       DEFB    13
00100 ;
00110 ;This program codes/decodes a PENCIL (ASCII) file by
00120 ;adding 1 to (or subtracting 1 from) the ascii
00130 ;value of each character in the file, stopping with
00140 ;an occurrence of 00H which is used to indicate the
00150 ;end of a PENCIL file.  It can also "reverse" part of
00160 ;the ASCII character set.  For example, a space (20H)
00170 ;becomes a lowercase z (7AH) while an exclamation point
00180 ;(21H) becomes a lowercase y (79H), and so on.
00190 ;
00200 ;You can begin program execution by typing
00210 ;CODE <ENTER>    or    CODE FILESPEC <ENTER>.
00220 ;
00230 ;Since I use NEWDOS80 almost exclusively, I don't know
00240 ;if this will work with other DOSs, but if it doesn't,
00250 ;it's probably just a matter of changing the EQUate
00260 ;addresses to make it work.
00270 ;
00280 ;Caution: You can press <BREAK> to exit while the file
00290 ;is being changed, but if you do, part of the file will
00300 ;be changed and part won't.  And you'll have a $%&$ of a
00310 ;time trying to get it right again.  You may want to make
00320 ;a copy of the file, update the copy, then delete the
00330 ;original if you're satisfied.
00340 ;
00350 ;The inspiration for this program was John Krause's
00360 ;program in the January '84 issue of the
00370 ;VOICE OF THE '80 newsletter, 10 Richlee Rd.,
00380 ;Norwalk, Ct., 06851.  Thank you John, Alan, and all
00390 ;of the Fairfield County TRS-80 Users Group.
00400 ;And to Jack Decker for his fearless leadership and
00410 ;his book, "TRS-80 ROM ROUTINES DOCUMENTED",
00420 ;$19.95 + FROM T.A.S., (517) 482-8270.
00430 ;
00440 BKUP     EQU     4445H           ;POS. FCB BACK 1 RECORD.
00450 BRKROW   EQU     3840H           ;BREAK-KEY ROW.
00460 BYTOUT   EQU     33H             ;DISPLAY SINGLE BYTE.
00470 CLS      EQU     01C9H           ;CLEAR THE SCREEN.
00480 CLOSE    EQU     4428H           ;N80 CLOSE FILE.
00490 CURSOR   EQU     4020H           ;CURSOR POSITION LSB.
00500 DOS      EQU     402DH           ;GO BACK TO DOS.
00510 DOSER    EQU     4409H           ;N80 DOS ERROR EXIT.
```

```
00520 DSPLY   EQU    4467H            ;N80 DISPLAY A LINE.
00530 EXTFL   EQU    441CH            ;N80 EXTRACT FILESPEC.
00540 CKKEY   EQU    2BH              ;ROM CHECK FOR KEY-PRESS.
00550 LBUFPT  EQU    40A7H            ;LINE INPUT BUFFER PTR.
00560 LIPT    EQU    361H             ;BASIC LINE INPUT RTN.
00570 READ    EQU    4436H            ;N80 READ A RECORD.
00580 OPEN    EQU    4424H            ;N80 OPEN EXISTING FL.
00590 WRITE   EQU    443CH            ;N80 WRITE DISK RTN.
00600 CONT    DEFB   0                ;IF 0, PAUSE.
00610 EOFSW   DEFB   0                ;1=AT OR PAST EOF.
00620 EREOF   DEFB   1FH              ;ERASE EOF CHARACTER
00630 FUNC    DEFB   0                ;01=INC BY 1, FF=DEC BY 1
00640 ;                               ;0=REVERSE THE SET.
00650 CODMSG  DEFM   'code/decode '   ;TO IDENTIFY FILE.
00660 FLSPEC  DEFM   '12345678911234567892123456789312'
00670         DEFB   13               ;TERMINATE THE FLSPEC
00680                                 ; FOR DISPLAYING IT.
00690 IOBUF   DEFS   256              ;DISK I/O BUFFER.
00700         DEFB   3                ;TERMINATE THE IOBUF
00710                                 ; FOR DISPLAYING IT.
00720 START   EQU    $
00730         LD     A,1CH            ;IF (HL) <> 1CH THEN
00740         CP     (HL)             ;A FILESPEC WAS SUPPLIED.
00750         CALL   NZ,ASKFL1        ;GET IT.
00760         LD     HL,LBUFPT        ;SET UP THE
00770         LD     (HL),0CAH        ; LINE
00780         INC    HL               ;  INPUT
00790         LD     (HL),64H         ;  BUFFER.
00800         LD     HL,41A6H         ;PLUG
00810         LD     B,15H            ; THE
00820 BASLP   LD     (HL),0C9H        ;  DISK
00830         INC    HL               ;  BASIC
00840         INC    HL               ;  LINKS
00850         INC    HL               ;  WITH
00860         DJNZ   BASLP            ;  RETURNS (0C9H).
00870         CALL   CLS              ;CLEAR SCREEN.
00880         LD     HL,DRM           ;POINT AT MY NAME.
00890         CALL   DSPLY            ;IDENTIFY.
00900         CALL   ASKFL            ;WHICH FILE TO CHANGE?
00910         CALL   GETFL            ;TRY TO OPEN IT.
00920         CALL   ASKFN            ;INCREMENT, DECREMENT,
00930 ;                               ; OR REVERSE?
00940         CALL   CHGCOD           ;ALTER THE DATA.
00950         CALL   CLOSE            ;CLOSE THE FILE.
00960         JP     DOSERR           ;IF ERROR, DISPLAY IT.
00970 ASKFL   EQU    $                ;WHICH FILE TO CHG? RTN.
00980         LD     HL,FLSPEC        ;POINT TO THE FCB.
00990         LD     A,'1'            ;DOES IT START
01000         CP     (HL)             ; WITH A 1?
01010         JR     NZ,DSPFL         ;NO. DISPLAY FILESPEC.
01020         LD     HL,FLMSG         ;POINT TO WHICH FILE MSG.
01030         CALL   DSPLY            ;PRINT IT.
01040         CALL   LIPT             ;GET KEYBOARD LINE.
01050         INC    HL               ;GET TO THE FILESPEC.
01060 ASKFL1  LD     DE,FLSPEC        ;POINT TO THE FCB.
01070         CALL   EXTFL            ;EXTRACT IT.
```

```
01080 DSPFL   LD      HL,CODMSG        ;TELL WHICH FILE
01090         CALL    DSPLY            ; WE'RE CHANGING.
01100         RET                      ;TO MAINLINE.
01110 FLMSG   DEFM    'What file do you want to change? '
01120         DEFB    3
01130 GETFL   EQU     $
01140         LD      DE,FLSPEC        ;POINT AT FILESPEC.
01150         LD      HL,IOBUF         ;256-BYTE DISK I/O BUFFER
01160         LD      B,0              ;INDICATE 256-BYTE RECS.
01170         CALL    OPEN             ;OPEN THE FILE.
01180         JP      NZ,DOSERR        ;IF ERROR, DISPLAY IT.
01190         RET                      ;TO MAINLINE.
01200 ASKFN   EQU     $                ;INCREMENT OR DECREMENT?
01210         LD      HL,CDDCMS        ;POINT TO INC/DEC MSG.
01220         CALL    DSPLY            ;PRINT IT.
01230 GETFN1  EQU     $                ;INC, DEC, OR BREAK? RTN.
01240         CALL    CKBRK            ;CHECK BREAK TO EXIT.
01250         CALL    CKKEY            ;KEY PRESSED?
01260         OR      A                ;CONDITION THE FLAGS.
01270         JR      Z,GETFN1         ;NOPE.
01280         CP      'Z'+1            ;LOWERCASE?
01290         CALL    P,LWR            ;YES. FIX IT.
01300         CP      'D'              ;IS IT A D?
01310         JR      Z,DEC            ;YES.
01320         CP      'I'              ;IS KEY AN 'I'?
01330         JR      Z,INC            ;YES.
01340         CP      'R'              ;IS IT AN R?
01350         JR      Z,NINC           ;YES.
01360         JR      GETFN1           ;TRY AGAIN FOR VALID IPT.
01370 LWR     SUB     20H              ;CHANGE LOWERCASE TO
01380         RET                      ; UPPER & GO BACK.
01390 INC     EQU     $                ;DISPLAY KEY & SET INC.
01400         CALL    BYTOUT           ;DISPLAY THE KEY PRESSED.
01410         LD      HL,FUNC          ;PUT IN +1
01420         LD      (HL),1           ; TO INCREMENT.
01430         RET                      ;TO MAINLINE.
01440 DEC     EQU     $                ;DISPLAY KEY & SET DEC.
01450         CALL    BYTOUT           ;DISPLAY THE KEY PRESSED.
01460         LD      HL,FUNC          ;PUT IN -1 (FFH)
01470         LD      (HL),0FFH                ; TO DECREMENT.
01480         RET                      ;TO MAINLINE.
01490 NINC    EQU     $                ;NO INCREMENT - REVERSE.
01500         CALL    BYTOUT           ;DISPLAY THE KEY PRESSED.
01510 ;FUNC HAS A 0 IN IT ALREADY TO INDICATE "REVERSE".
01520         RET                      ;TO MAINLINE.
01530 CDDCMS  DEFB    10               ;LINEFEED.
01540         DEFM    'Press <D> to decrement, <I> to incremen'
01550         DEFM    't, <R> to reverse'
01560         DEFB    10
01570         DEFM    'or BREAK to exit. '
01580         DEFB    3                ;END MSG WITH NO C/R.
01590 SHOW    EQU     $                ;DISPLAY THE RECORD.
01600         LD      HL,CURSOR        ;SET CURSOR POSITION.
01610         LD      (HL),0   ;SCREEN MEMORY 3E00H.
01620         INC     HL               ;CURSOR MSB.
01630         LD      (HL),3EH         ;(LIKE PRINT@).
```

```
01640          LD      A,(EREOF)       ;CLEAR THE REST
01650          CALL    BYTOUT          ; OF THE SCREEN.
01660          LD      HL,IOBUF        ;POINT TO THE RECORD.
01670          CALL    DSPLY           ;PRINT IT.
01680          LD      HL,CR           ;PRINT A
01690          CALL    DSPLY           ; CARRIAGE RETURN.
01700          RET
01710 CHGCOD   EQU     $
01720          CALL    CKBRK           ;CHECK BREAK TO EXIT.
01730          LD      DE,FLSPEC       ;POINT AT FCB.
01740          LD      HL,IOBUF        ;PT TO DISK I/O BUFFER.
01750          CALL    READ            ;GET A RECORD.
01760          CALL    NZ,CKEOF        ;SEE IF AT OR PAST EOF.
01770          LD      HL,EOFSW        ;END
01780          LD      A,(HL)          ; OF
01790          CP      1               ;  FILE?
01800          RET     Z               ;YES. RET TO MAINLINE.
01810          CALL    CKBRK           ;CHECK BREAK TO EXIT.
01820          LD      A,(FUNC)        ;WHAT TO DO?
01830          OR      A               ;CONDITION THE FLAGS.
01840          CALL    Z,REV           ;0 MEANS TO REVERSE SET.
01850          LD      A,(FUNC)        ;WHAT TO DO?
01860          OR      A               ;RECONDITION THE FLAGS.
01870          CALL    NZ,CHGLP        ;TO INC. OR DEC.
01880          CALL    SHOW            ;DISPLAY IT.
01890          LD      DE,FLSPEC       ;POINT TO FCB.
01900          CALL    BKUP            ;BACK UP TO CUR REC.
01910          JP      NZ,DOSERR       ;IF ERROR, DISPLAY IT.
01920          CALL    CKBRK           ;CHECK BREAK TO EXIT.
01930          LD      A,(CONT)        ;IF (CONT)=0, PAUSE
01940          CP      0               ; TO CHECK RESULTS.
01950          CALL    Z,PAUSE         ;(JUST ONE TIME).
01960          LD      DE,FLSPEC       ;POINT TO FCB.
01970          LD      HL,IOBUF        ;PT TO DISK I/O BUFFER.
01980          CALL    WRITE           ;REWRITE THE RECORD.
01990          JP      NZ,DOSERR       ;IF ERROR, DISPLAY IT.
02000          JR      CHGCOD          ;DO THE NEXT RECORD.
02010 CHGLP    EQU     $               ;ALTER THE BYTES
02020          LD      BC,0            ;256 TIMES.
02030          LD      HL,IOBUF        ;POINT AT DATA.
02040          CALL    CHGLP1          ;DO IT.
02050          RET                     ;TO CHGCOD.
02060 CHGLP1   EQU     $               ;ALTER DATA BY 1 ROUTINE.
02070          LD      A,(HL)          ;PUT THE BYTE IN A.
02080          CP      0               ;IF EOF PENCIL FILE,
02090          RET     Z               ; RET TO CHGLP.
02100          CP      0FFH            ;DON'T CREATE A
02110          JP      Z,WRNGFL        ; 0 BYTE.
02120          PUSH    HL              ;SAVE POINTER TO DATA.
02130          LD      HL,FUNC         ;POINT TO INC/DEC VALUE.
02140          ADD     A,(HL)          ;ALTER IT.
02150          POP     HL              ;RETRIEVE DATA POINTER.
02160 PUTBK    LD      (HL),A          ;PUT IT BACK.
02170          INC     HL              ;POINT TO NEXT BYTE.
02180          DJNZ    CHGLP1          ;DO AGAIN IF NOT DONE.
02190          RET                     ;TO CHGLP.
```

```
02200 CKBRK   LD      A,(BRKROW)        ;BREAK KEY
02210         AND     4                 ; PRESSED?
02220         JP      NZ,DOS            ;YES.
02230         RET                       ;IF NOT.
02240 WRNGFL  EQU     $                 ;NOT A PENCIL FILE.
02250         LD      HL,BDFLMS         ;SO
02260         CALL    DSPLY             ; SAY SO.
02270         JP      DOS               ;GET OUT.
02280 BDFLMS  DEFM    'This is not a PENCIL or ASCII file.'
02290         DEFB    13
02300 CKEOF   EQU     $                 ;CHECK FOR END OF FILE.
02310         CP      1CH               ;END OF FILE?
02320         JR      Z,SETEOF          ;YES.
02330         CP      1DH               ;PAST EOF?
02340         JR      Z,SETEOF          ;YES.
02350         JP      DOSERR            ;AN ERROR OCCURRED.
02360 SETEOF  EQU     $                 ;SET EOF FLAG.
02370         LD      HL,EOFSW          ;SET EOF
02380         LD      (HL),1            ; SWITCH.
02390         RET                       ;TO CHGCOD.
02400 DOSERR  EQU     $
02410         LD      HL,CURSOR         ;SET UP "PRINT@" CURSOR
02420         LD      (HL),00H          ; WITH SCREEN MEMORY
02430         INC     HL                ; POSITION
02440         LD      (HL),3EH          ; 3E00H.
02450         PUSH    AF                ;SAVE ERROR CODE.
02460         LD      A,(EREOF)                 ;EREOF CHARACTER.
02470         CALL    BYTOUT            ;DISPLAY IT.
02480         POP     AF                ;RESTORE THE ERROR CODE.
02490         JP      DOSER             ;DISPLAY & EXIT.
02500 REV     EQU     $
02510         LD      BC,0              ;TO LOOP 256 TIMES
02520         LD      HL,IOBUF          ;POINT TO DATA.
02530 REVLP   EQU     $
02540         LD      A,(HL)            ;GET A BYTE.
02550         CP      0                 ;EOF PENCIL FILE?
02560         RET     Z                 ;YES.
02570         CP      ' '               ;SPACE?
02580         JP      M,REVLP1          ;LESS. GO TO NEXT BYTE.
02590         CP      'z'+1             ;GREATER THAN z?
02600         JP      P,REVLP1          ;YES. GOTO NEXT BYTE.
02610         PUSH    BC                ;SAVE LOOP COUNTER.
02620         LD      B,A               ;MOVE THE BYTE TO B.
02630         LD      A,'z'+20H         ;TOP OF REVERSE SET.
02640         SUB     B                 ;GO TO OTHER END OF SET.
02650         LD      (HL),A            ;PUT IT IN THE BUFFER.
02660         POP     BC                ;RESTORE LOOP COUNTER.
02670 REVLP1  INC     HL                ;POINT TO NEXT BYTE.
02680         DJNZ    REVLP             ;DO THE NEXT BYTE.
02690 REVLPX  RET                       ;WHEN 256 (OR EOF) DONE.
02700 PAUSE   LD      HL,CNTMSG         ;POINT TO CONTINUE MSG.
02710         CALL    DSPLY             ;PRINT IT.
02720         LD      HL,CONT           ;SET TO CONTINUE -
02730         LD      (HL),1            ; (NO FURTHER PAUSES).
02740 PAULP   CALL    CKBRK             ;<BREAK> TO EXIT.
02750         CALL    CKKEY             ;ANY OTHER KEY
```

```
02760          OR      A                    ; TO CONTINUE.
02770          JR      Z,PAULP ;NO KEY YET.
02780          RET                          ;CONTINUE.
02790 CNTMSG   DEFB    10                   ;LINEFEED
02800          DEFM    'Press <BREAK> to exit or any other key'
02810          DEFM    ' to continue.'
02820          DEFB    3                    ;END MSG WITHOUT C/R.
02830          END     START
```

Hey, Ed! They've already got my letter!

THE PANIC INTERFACE STANDARD

by Delaney Flushboy

Reprinted from TCUG Newsletter, June 1984

The people from Virtual Logic of Palo Alto recently released Version 1.1 of Pandora's Alpha-Numeric Interface Code (PANIC), which has replaced RS-232 as the interface standard of choice among California's digital cognoscenti. For those who wish to stay in the know, the following is a rundown of the enhancements to PANIC 1.Ø.

PANIC CHAN.77 - Enables direct satellite-link interface to MGM's film library archives of Spanish-language reruns of "The Joey Bishop Show."

PANIC 1Ø-DONITIS - Interfaces printer with music synthesizer. Forces printer to output in cadence with Jane Fonda exercise records.

PANIC VIBRA8 - Code linking and Daisy Wheel II printer to the UNESCO Seismographic Center in Singapore.

PANIC 8BALL - Locks out BREAK key by short-circuiting keyboard (this feature was beta-tested on the TCUG Resource Network in late March).

PANIC UH1UH2 - When sent out through existing RS-232 port, entitles user to three free lessons at the Arthur Murray Dance Studio.

PANIC 56-Ø - Forces all cordless telephones within a four-mile radius to call the Washington Federals season ticket office. Evidently a cruel joke on the part of the PANIC design team.

PANIC 4U,$4.98 - Code instructing automatic teller machines to overstrike Abe Lincoln's face with Joan Rivers'.

PANIC AGGRAV8 - Configures a variety of voice synthesizers to sound like Andy Rooney.

PANIC SIZE1-1/4 - Interfaces female Cabbage patch Doll to Six-Million-Dollar-Man Doll, producing bisexual Six-Million-Dollar Cabbage Patch Robot. Unit has been named Offical mascot of the 1984 Russian Olympic track team.

PANIC 2SLOW - Interfaces remotely with supermarket Universal Product Code readers. Prohibits customers in the "8 items or less" line from purchasing goods with Peruvian war bonds, bus tokens or wampum.

PANIC 44IQ - Intercepts incoming TV broadcast signals. Disables your TV set 12 nanoseconds before it outputs the phrase "I liked it so much, I bought the company."

VCPRINT/BAS

by Karl Hessinger

Reprinted from TCUG Newsletter, June 1984

VCPRINT/BAS will take a Visicalc file and print the contents of the file. The program prints what is ACTUALLY IN THE CELL, as opposed to a calculated value.

This program was designed for use with LDOS, but can be easily modified for use with other operating systems.

```
5 '***** VCPRINT/BAS
10 CLEAR 25000 : DEFINTA-Z : DIMVC$(999)
20 DEF FNTI$(A$,A) = STRING$(( 64-LEN(A$) - A ) / 2 , 32 ) + A$
30 FOR T = 1 TO 7 : READ T$(T) : NEXT
40 CLS : PRINT FNTI$("* * V C P R I N T * *",0)
50 FS$ = "" : PRINT @ 256, "Visicalc file to print > ";: LINE
   INPUT FS$
100 OPEN "I",1,FS$ : I = 0
110 IF EOF(1) THEN 170
120 LINE INPUT #1, A$
130 IF LEFT$(A$,1) <> ">" THEN VC$(I) = A$ : GOTO 160
140 T$ = MID$ (A$,3,1) : IF T$ >= "A" AND T$ =< "Z" THEN T = 2
    ELSE T = 1
150 T1 = INSTR (1,A$,":") : VC$(I) = STRING$(2-T,32) +
    MID$(A$,2,T) + STRING$(5-T1+T,"0") + MID$(A$,2+T,T1-T-2) +
    RIGHT$(A$,LEN(A$)-T1)
160 I = I + 1 : GOTO 110
170 I = I - 1 : CLOSE
171 '***** Decode the crud at the end (last five lines)
172 I = I - 2 : GC = VAL(RIGHT$( VC$(I), LEN(VC$( I ))-3))
173 I = I - 1 : GR$ = RIGHT$(VC$(I),1)
174 I = I - 1 : GO$ = RIGHT$(VC$(I),1)
175 I = I - 2 ' Ignore window information
179 '***** Sort the input
180 CMD"O",I,VC$(0)
199 '***** Print formulas
200 LPRINT"Visicalc file : ";FS$
210 LPRINT
220 LPRINT"Column width : ";GC
230 LPRINT"Calculation : ";:IF GR$ = "A"THEN LPRINT "Automatic"
    ELSE LPRINT "Manual"
240 LPRINT"Calculation order : ";: IF GO$="C" THEN
    LPRINT"Column major" ELSE LPRINT "Row major"
250 LPRINT : LPRINT " Cell  Format  Contents" : LPRINT " ----
    ------  --------"
260 FOR T = 0 TO I-1
270 LPRINT LEFT$(VC$(T),5);
280 IF MID$(VC$(T),6,2) = "/F" THEN 288
284 LPRINT"  Default  ";: T1=5 : GOSUB 500 : GOTO 290
288 LPRINT " "; FT$(INSTR(1,"DGILR$*", MID$(VC$(T) , 8,1 )));
    "  ";: T1=8 : GOSUB 500
290 NEXT
```

```
295 END
500 IF LEN(VC$(T)) - T1 > 64 THEN 520
510 LPRINT RIGHT$(VC$(T), LEN(VC$(T)) - T1) : RETURN
520 LPRINT MID$(VC$(T), T1+1, 64)
530 LPRINT STRING$(16,32); MID$(VC$(T), T1+65,64)
540 RETURN
1000 DATA "Default","General", "Integer", "Left    ",
     "Right   ","Dollar ","Graph    "
```

DEFEAT BACKUP PROTECTION ON TRSDOS 6.x DISKS

by Nathan W. Harrington

Reprinted from Northern Bytes, Volume 5, Number 4

Here is a one-liner that will take a TRSDOS 6 diskette and make it un-backup-protected. So far, I know that PFSfile and PFSreport for the Model 4 have limited backups. I found this out because PFSfile came with our Model 4. Angered by not being able to make unlimited backups, I set out to solve the problem. As it turned out, it took about 5 minutes to locate and fix the problem. The following program contains the Basic necessities required. You can change the drive containing the diskette by changing the drive number in the OPEN statement. Operation is very simple. Insert the diskette to be unprotected in drive 0 (or whatever you change it to) and run the program. The result, unlimited backups. The program:

```
10 OPEN "R", 1, "BOOT/SYS.LSIDOS:0" : GET 1, 3 :
   POKE VARPTR (#1) + 198 , 0 : PUT 1, 3 : CLOSE : END
```

***** FCUG MINUTES FOR APRIL 4, 1984 *****

The meeting began with a discussion of the latest shifts of personnel at the Radio Shack stores. Roger, who has been very helpful at the Norwalk store has now transferred to Fairfield. Various members have also found John Rudder at the Radio Shack in the Caldor shopping center in Brookfield to be most helpful.

It is rumored that a new PC will be coming out at the same price as the present one but it will have a new keyboard and have an expandable 128K.

There is a "Rainbow Fest" to be held at Princeton in September.

Bob Jackson asked if our club would like to sponser the computer fair with the Apple club again this fall. There appears to be very little interest in this area.

Al Abrahamson then presented a program to ease us gently into assembly language. Much of what he worked with was published in the last issue of the newsletter. The Tasmon program gave us an opportunity to watch what is actually happening because the program intercepts everything as the Assembly Language program is talking to the Z80 chip. As part of his conclusion, Alan showed a comparison of shell sort in basic to shell sort in Assembly Language. He also showed a random generated graphics program written in both Basic and Assembly Language. What a difference!! The only problem with such speed is that there are times when the printer can not keep up the Assembly Language.

After the break Bob Jackson discussed the theory behind linked lists. This is a list (usually sorted) which refers to a random acces file. It speeds up searches and cuts down on the disk access time. Both the Santori Mass Mailing list and Profile Plus make excellent use of linked lists. When Bob finished his presentation we should have all been able to go home and create them ourselves.

The closing comments this evening were cautions regarding infringement on copyrights. There are more and more examples of law suits. Be warned!

Secretary
Patricia J. Brinson

******** Minutes for FCUG - May 1, 1984 ********

The evening opened with a discussion of various printers. The new Epson dot matrix LQ 1500 is good letter quality.

The Model 4 has a new operating system. A new version of DOTPRINT 4.0 is out but no one has seen it as yet.

The membership consented to a waive of the nominations and general election procedures set forth in our bylaws and we went straight to nominations and elections. The following persons were nominated and accepted the nomination:
Bob Jackson for president, Herman Parks for vice-president
Bob Gould for treasurer, Patricia Brinson for secretary
Ed Hicks for corresponding secretary (Ed was not present and his nomination was accepted by Herb Kanter and Charlie Rossi.) There were no nominations from the floor and all were elected by voice vote. It was suggested that Bob Jackson stay in office until he "gets it right".

A motion was put forward to purchase two new monitors at a cost of approximately $200 each. In the discussion it was pointed out that this would call for a new amplifier and additional cording which would bring the total close to $500. The motion was then amended to state that FCUG spend up to $500 for new video equipment. The motion was carried with one vote in opposition to the motion.

Don Pearson started his demonstration of the hardware, Micro Merlin, with a slide presentation of his own set up in his office. He pointed out that you can run 2 printer and 2 RS-232 boards through this device. The RAM capacity is expandable up to 768 K. With it you get either MSDOS or CPM although it will not run Lotus 1 2 3. Since he is the local representative for this remarkable piece of hardware it will be easy for any of us to gain furthur information from him.

After the break Mike Ciferi mesmerized all of us with the graphic capabilities of the color computer when it is using a remarkable piece of software called GRAPHICOM. It is written in Forth, is only available on disk and requires 64 K. It is run mainly by the use of joy sticks. It has been advertized at various prices averaging about $25. For this low price you get two disks and the ability to animate, stamp, and rotate figures 90 degrees!!

For those of us yearning for new ways to use our computers this certainly was quite a night.

Respectfully submitted,

Patricia Brinson, Secretary

******** Minutes for FCUG - June 5, 1984 ********

Don Pearson gave us a real close up look at the Tandy Model 2000 and its graphic capability. The programs on the

demonstration disk showed a striking 8 colors and 2 shades of each. All programs were in Basic. The system as it was shown for demonstration would cost close to $4000. It was reported that Lotus 1 2 3 is in the testing phase now. Even before the second part of our program, a debate ensued as to the rule of IBM over the micro computer world. Our club members strongly disagree as to whether or not Tandy should copy IBM or travel its own route.

After the discussion cooled, a motion was presented and carried to buy the New Canaan Country Day School's Model III for $900.

Bob Jackson read a letter written to him by one of our club members, Gligor Tashkovich, who is a freshman at Cornell University. It appears that he has become embroiled in a controversy at the university regarding privacy rights on computers! We all had an opportunity to get more details as Gligor appeared before the break. He is home working in NYC for the summer.

Roger Giler brought forth a motion for the club to purchase a moden and Bulleting Board for the club. Much enthusiastic discussion followed. A decision was made to table this motion until next month when more of the open questions could be answered and the treasurer's report would indicate how financially feasible this is.

Ira Friedman (Model I librarian) and Bob Jackson (Model III librarian) asked for volunteers to look through and clean up the software in the library. Each volunteer will be given a free disk for doing the following;

1. cataloging the disk
2. categorizing the programs
3. writing a short description of what each program does
4. cleaning up the program

It was nice to see such a rush of volunteers!

Don Beverly will no longer be able to serve as refreshment chairman but John Wilkens consented to take over this task. Aaron Bisberg completed our wealth of new volunteers by taking over the responsibilities of Publicity.

After the break our round table debate, "Where is the Computer Field Going?" took place. Up front were the experts most likely to know: Mike Ciferi, Alan Abrahamson, Sid Gross, Bob Jackson and Roger Giler. Even though many though provoking statements were made and interesting facts were shared, it should be no surprise that the question was left unanswered.

We left stimulated by the discussion and pleased the the new name tags had allowed us to attach more names to familiar faces. Thanks guys for the larger print on the tags.....It's great.

Respectfully submitted,

Patricia Brinson, Secretary

******** Minutes for FCUG - July 10, 1984 ********

Herman Parks, Vice-president, called the meeting to order as Bob Jackson, President, is present but on vacation from is duties. Despite his "vacation", Bob was delighted to receive back four of the library disks which members had taken to repair. Many thanks to those who are helping us to maintain an up to date and useful disk library.

The phone number 203-227-4946 has been set up as a trial number for a possible club bulletin board. The first time you call you will get a short menu due to a name check. The next time you call you will get a more extensive menu.

A treasurer's report was given by John Roy and Bob Gould confirmed that the books are in "great order". The motion to accept the minutes was carried unanimously and a vote of thanks was give to John for all the work he has done for FCUG.

Alan Abrahamson started out his presentation on LeScript by stating that no one particular word processor is better than another, it always depends upon what you want it to do. Two features that make this an excellent program for many is that it is very easy to learn and supports over 100 printers available for the TRS-80 - including the 80 character mode of the Model 4. In addition to the points Alan covered in his article on LeScript in the July, 1984, "Voice of the 80", he discussed the program's ability to "soft hyphenate". This tells the computer where you want the hypen in a long word if it is necessary to use one in that word. With a Model 1 or III it can chain as many as 16 documents (24 on the Model 4) and can be used with Electric Webster.

There are a couple of points which Alan believes detract from the program. You can use only one set of tabs for the complete document and you can't insert all the spaces you might want without noting "hard spaces" which is a special notation to the printer.

All in all the presentation was full of high praise for this word processing system from "a man who knows".

Immediately following the all important break we entered into a discussion of lightning problems connected with the computer. As some can testify through first hand experience it is not enough to turn off the power strip. The computer can be "fried" through the ground. You should also be careful to disconnect the modem from the phone line. There was a discussion between some of the hardware experts as to the best

inexpensive way to protect our valuable computers. Let's hope we see an article on this in the "Voice of the 80" soon!

The Visicalc group reported that they have been going over basics and are now hacking around. They expect to network with other groups in the future.

The Basic group meets every other Wednesday night and has tackled such varied programs as disk structure.

The Assembly Language group has been meeting just about every other Thursday night. It appears that their discussions have roamed to many topics and they have not been sticking to a particular agenda.

John Roy then gave a presentation on Monitors. These will give you direct access to the CPU and allow you to modify the memory. It is a way to gain real control over the Z80. John's favorite is the Tasmon by Alternate Source. He did a great job although he was unable to use a number of transparencies which he had prepared because the overhead projector had disappeared!

Although your secretary had to leave a few minutes early all indications are that we adjourned in good order.

Secretary, Patricia Brinson

"I'm sorry . . . we're not interested. Mr. Simpson feels computers are just a fad."

Last Month revisited and 12 new programs

By George Saladino, Jr.

Last month I spoke of the new CCR82 recorder. Well, now I have one and I like it even better. The best recorder that Tandy ever put out! In fact, I bought another one for a cousin of mine.

It has one feature that I did not mention in last month's article. On the volume control there is a "P". This is as you click off the control. This is a preset setting of the volume for playback, no longer having to put the recorder between 5 & 6 or some other point. I find that the "P" setting works well most of the time!

Scripsit from Tandy last month, I rated fair. However, one problem with it can be some printers that automatically skip over the perforation of fan fold paper. On a MX 100 that a friend of mine has, this is the case and I had to insert into the program a software fix to disable this automatic perforation skip. He did not want to have to reset the switches each time.

I find that a better program is for free from Micronet's Model 100 board. It is called "WORPRO" and is quite a good little print formatting program. It lets you set margins, top of page, bottom of page, justify, number pages, line spacing, pause between pages, output to a serial printer if you want instead of the regular printer port, and much more. Download it, you will like it.

Now, I said "Twelve new programs" and I mean it. I just picked up a new book from Tandy called "Portable Computing with the Model 100." Catalog number 26-3820. It comes with a tape having 12 programs that are featured in the book! No typing in from the listings. Just put the tape in your tape recorder and load. The package costs $14.95 and I can say that I like it much better than the Scripsit program I mentioned above.

The book gives a good tutorial on how to use the 100. One of the most interesting chapters is on Telecommunications. In this chapter there is a good explanation on the settings used in communications. Baud rate, word length, parity checking, stop bits and the xon/xoff protocol.

Other chapters cover text editing,storing and printing files, electronic mail, plugging into data bases, creating a data base and other topics of interest.

Programs on the tape and listed in the book are -

SR.BA - a global search and replace utility for text files
SIZER.BA - a program to tell you the size of a text file.
PRINT.BA - a text file printer.
XTIME.BA - a program to tell one how much it will cost to upload to a data base.
TERM.BA - a terminal program. More on this program later.
QUOTE.BA - an automatic program to log on a data base and download information such as stock prices at a certain time.
DB.BA - a data base program.
SORT.BA - a sorting program for data bases.
XTRACT.BA - lets you extract data from one file and put it in another.
ENTER.BA - a data entering program.
CALC.BA - a formula calculating program.
TCALC.BA - a program that computes sums and averages of tabular data.

One of the most interesting programs to me is TERM.BA. It is a very good little program in basic. Allows one to find out what the time is, free space in ram and the files in the 100 while you are on line. It also has Downloading and Uploading of programs. Note, you can download to disk by putting in a "0:" before the name you want to save the program under.

Two faults are that there is no cursor when you type in from the board and being in basic, you have to have the "XON" feature on or you will loose information. This does not allow you to use it with Dow Jones.

To put a cursor into this program, add line 285 below

```
285 CALL 16969
```

This will put a cursor into the terminal mode.

Have a good month. Happy computing.

'What Do You Mean, There's No Outlet in This Room!'

ASK ALAN

by Alan Abrahamson

Sometimes, your editor finds himself in a sticky situation In this case the situation is that I have one page to fill for this issue and I do not have any articles available that are exactly one page long. What to do, I thought? I could breifly answer a quick question, knock off a simple subroutine, use an extra large cartoon, out some old Murphy's laws or I could play with some of the new Dot Writer fonts Since the later sounded like the most fun to me, and since it was my selection, this is what you get This paragraph was created with the Handwriting Style Font The Ask Alan header was done in a style called Antique and the "by-line" was done in Computer Style 2. Note that all the text is proportionally spaced and right and left justified.

Thiis iis probablly about alll the space that I have to work wiith for thiis month, so I shalll siign offf. Before I go, usiing thiis ENGRAVED NOSTALGIA Font, let me say that you willl be seeing much more of thiis oriiginall font work iin future issues of the ""VOICE"".

The President's Page

Date = Tuesday, September 4, 1984

Time = 7:30 PM

Place = New Canaan Country School

QUEL EMBARRAS! There we were - our first meeting as a fully incorporated user's group, not just a rag-tag collection of assorted byte-heads, but standing proudly with legal counsel in attendance, and we couldn't muster a quorum to elect officers. So now we are in limbo, floating around in the twilight zone.

But this coming meeting, we're gonna make it, if...*if*...if every member either comes to the meeting or fills out the proxy form enclosed with this issue. If you have any doubts about being present, please, send in the form. Then if you do come, you can take back the form and vote in person.

Merci, Roger Giler, for sharing your experience and knowledge of business graphics, and *merci*, Dick Carricato, for a fine discourse on the subject of bulletin boards and telecommunications. Of course your real applause was the group's overwhelming vote to bless a FCUG BB.

As a result I developed severe hunger pangs for a modem of my own, so at the Norwalk Crazy Eddie's, I bought a Jaguar for $85. (List $120 - nice man said he'll give the discount to anyone who sneaks up behind him and whispers *"FCUG"*). When I drove it home, I found I could modem out, but I couldn't modem in. After testing at several sites, I drew the conclusion that it was defective. When a second Jag showed the same reluctance, I drew the conclusion that I was defective. And further fiddling yielded a true two-way modem.

In the belief that my experience and further delvings will benefit those of you who are considering getting into the BB act, (and I hope that includes most of you) I am going to expound at the next meeting on "Getting On-line Modem-wise".

For those of you who think PEEK and POKE is an oldtime vaudeville team, ex-prexy Sid Gross has news for you. They are powerful Basic commands and Sid will give us a beginner's tutorial on their use.

Once more with feeling:

Your body or your proxy!.

Herman

Voice of the '80
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TO:

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