



# mini'app'les

apple computer user group newsletter

MARCH 1980

VOL III No 3

Daniel B. Buchler	President & Activity Coordinator	890-5051
Chuck Thiesfeld	Treasurer & Newsletter Editor	830-5020 831-0009
Chuck Boody	Secretary	1-873-2227
Keith Madonna	Librarian	474-3876
James Henke	Technical Advisor	869-0361

CONTRIBUTIONS	
COMPLAINTS	D. Buchler
CORRESPONDANCE	13516 Grand Ave S Burnsville Minn., 55337
MEMBERSHIP	C. Thiesfeld
	8416 Xerxes Ave. S Bloomington, Minn., 55431

IN THIS ISSUE: - - - - -

Advertisements  
 Apple Orchard Vol 1 No 1  
 Candidates for MINI'APP'LES Board  
 Dan on Printers  
 Discounts on Diskettes  
 File Cabinet  
 Handicapped Persons Using Apples  
 LOCAL Bulletin Board (ABB)

MICROCOMPUTER Shows  
 Minutes of Feb 19th Meeting  
 PASCAL POKE gleaned by Rick Rogers  
 PASCAL with Hayes - New Software  
 Rumours from AFAR  
 SECTOR SCAN by R.C. Meyer -FEATURE ARTICLE-  
 S.C. Assembler with Hayes  
 SUPPORT YOUR LOCAL STORE  
 THANK YOU (Feb 19th Program)

NEXT MEETING

PRINTER NIGHT

Wednesday, March 19th,  
 Minnesota Federal Savings & Loan  
 9th Avenue South  
 Hopkins  
 We will have a room full of Apples each with  
 a printer connected to it. As of the writing  
 of this N.L. we have firm commitments to  
 display:  
 MPI 880T  
 IDS 440 Paper Tiger  
 Heathkit  
 Centronics P1 Aluminized paper printer  
 Anadex 8000 AP.  
 Tentative commitments for:  
 TTY 43  
 Trendcom 80col.  
 Bunker Ramo 32 Col  
 We are looking for:  
 Microtek MT-80  
 Centronics 730  
 Phase 2  
 Eaton LRC-7000  
 Axiom IMP-1  
 Apple Printer???????????

MICROCOMPUTER SHOWS

The IEEE Southern Minnesota Section is  
 putting on a "MICROCOMPUTER APPLICATIONS FOR  
 THE 80s" show in Rochester Mn, on Sat March  
 29th at the Holiday Inn. Program includes  
 talks on applications of general interest  
 including  
 The Industrial Marketplace  
 Consumer Marketplace (Bill Weldon)  
 Small Business (John Riskin)  
 Home Finance (Charlie Brown)  
 Education (Woody Beeler)  
 Simulation Games (Dan Nicholson)  
 Control (Bill Schlosser -Mtn Hdw)  
 Weldon, Riskin and Brown are each associated  
 with Mini'App'les. There will also be vendor  
 displays. Contact Charlie Brown at  
 507-533-6510 for more information.

APPLE ORCHARD Vol 1 No 1

We have the 80 copies of subject on hand.  
 All 80 copies have been spoken for and will  
 be available at the next meeting for  
 distribution. If you cant make the meeting,  
 please call Dan Buchler or C.Thiesfeld and we  
 will arrange for distribution. Out  
 of towners who prepaid will get theirs by mail  
 but we do expect the mailing costs to be  
 reimbursed.

NEXT MONTHS MEETING

ANNUAL ELECTIONS

Wednesday April 16th  
 Election of officers. Meet your fellow  
 enthusiasts!

If you didn't pre-order, it will cost you  
 \$5.00 at your local computer store (instead  
 of \$1).



## SECTOR SCAN by R.C.Meyer

Introduction by your President....

Dick Meyer is one of our members who lives in the wilds of Minnesota. In this case Owatonna. He is one of the few members who submits original programs to our user bank. His current submission consists of two excellent utilities, one of which is documented in this article. Both of these programs will be placed on the user bank. The other utility is called 'Disk Use'. It provides a modified CATALOG in which the program length both for BASIC and Binary programs and starting address are listed along with the program name. Not only does Dick contribute programs, but he provides complete documentation. Thank you Dick.

The integer BASIC program SECTOR SCAN may be used to Read, Examine and/or Modify any information on the disk. No limitations have been placed on what parts of the disk may be examined or modified. Program sectors, files, disk directory tracks, the volume table of contents, even DOS itself may be modified! So be warned!

## USE WITH CARE

Read and understand your DOS manual pages 126 through 135 before you attempt to write anything onto the disk with this program. But first, here is a mini-review of DOS: A "volume table of contents" (VTOC) at track \$11 sector \$0 is used to control the sectors available for use elsewhere on the disk. The twelve remaining sectors of track \$11, starting with \$C and ending with \$1, contain directory information about files- name, size, type and location of track/sector list. Each track/sector list contains the locations of all sectors used by the file. Tracks \$00, \$01 and \$02 are used to store DOS itself. The remaining tracks, \$03-\$10 and \$12-\$22 are available for user files (403 sectors). Normal usage will locate a file in a connected area with track usage proceeding from highest (\$C) to lowest (\$0) sector on a given track.

Hexadecimal notation is used in this article because it is employed in Appendix C of the Apple Computer Inc. DOS version 3.2 manual and in the program SECTOR SCAN. Disk locations in this article are shown in the format \$TT/\$S, where TT is the hexadecimal track number and S is the hexadecimal sector number.

Using SECTOR SCAN - - After you RUN SECTOR SCAN, the VTOC sector will be displayed. A complete sector is always displayed on one screen. 16 bytes are displayed on each line in 4 groups of four. Bytes are displayed in either hexadecimal or ASCII (See command A described below). The

left hand side of the display shows the address of the first byte in each line relative to the start of the sector.

After the VTOC sector appears on the screen, SECTOR SCAN awaits type-in of any of six commands. These may be single characters as listed below. In such cases, the program will prompt for subsequent response. Or, the command may include the appropriate information immediately following the command letter. A 'Return' is interpreted as a READ.

Valid commands are as follows:

A - 'ASCII'  
 E - 'END'  
 H - 'HEX CONVERSION'  
 M - 'MODIFY'  
 R - 'READ'  
 W - 'WRITE' (BE CAREFUL WITH W!)

A - 'ASCII' causes the currently displayed sector to be redisplayed in ASCII. This may result in a somewhat garish display with inverse and flashing characters. To return the display to the 'normal' hexadecimal mode the sector must be read again (R command).

E - 'END' causes the program to return to the BASIC prompt '>'. It may be re-RUN without reloading or saved without loss of content. If the current sector buffer has been modified but not written before the 'END' command is entered, the disk will not be modified.

H - 'HEX' CONVERSION is a sort of mini-calculator that allows instant conversion from an entered Hex 2-digit byte to its ASCII and decimal equivalence.

M - 'MODIFY' allows modification of any byte in the currently displayed sector. Up to 16 bytes may be entered at one time in any part of the sector. Note the M - 'MODIFY' only modifies the information in the Apple memory. It must be written with a W - 'WRITE' command before the disk is updated.

R - 'READ' causes a sector to be read from a specified sector and track into the current sector buffer in memory and displayed in hexadecimal notation. The sector may then be modified and written back using the M and W commands.

W - 'WRITE' causes the current sector buffer to be written back to the disk sector from which it was read. This will occur only if one or more modifications are made to the data. Remember: if you want to modify a disk sector, it must be written.

M - 'MODIFY' by itself does not alter the disk.

## CAUTION AGAIN:

the W - 'WRITE' command has the ability to make a disk unusable if carelessly employed.



The H 'HEX' and WRITE commands which have been aborted will display their messages until another key is depressed. If the depressed key begins a valid command, it will be placed in the input buffer and displayed on the screen. This tends to simplify the display of multiple HEX conversions.

The hexadecimal display performed for the R - 'READ' and W - 'WRITE' commands has the ability to send its data to a printer. This is activated by keying "P" as the second character of the command (examples: "WP", "RP"). You should not request the print option unless the program statements 1100 and 1400 have been changed to include a PR#n appropriate to your particular system configuration. Or, statement 2160 may be modified to reference a printer activation/deactivation routine associated with a RAM resident driver.

What's SECTOR SCAN good for?

I wrote it because I had a disk with 200 odd sectors used for files into which I could no longer store information. I analyzed track/sector lists for all files in the directory and compared them to the sectors flagged as used by VTOC. I then modified the disk VTOC to agree with the track/sector lists and got the free use of the disk.

Other possibilities:

1. It provides another way to add "illegal statements" to BASIC programs.
2. Minor changes can be made to Text files without requiring a program responsive to the file structure.
3. Fragmented file? Judicious file copying, deletion, and replacement can reduce the amount of track-to-track seeks necessary to reference the file.
4. The number of directory sectors may be reduced or increased by changes to VTOC and to present directory sectors. More than 84 small programs? Add a few more directory sectors.
5. A deleted file may be restored provided other files have not overwritten those sectors since deletion.
6. Want to modify DOS. This program allows it! DOS could be eliminated and its file sectors given to a file which is just a little too small to be stored on the disk.

#### CANDIDATES FOR MINI'APP'LES BOARD

April meeting is annual election. If you are an apple nut, and like living with apples, consider what you might be missing by not announcing yourself as a candidate. We, on the board, enjoy every minute. Its work, but what worthwhile things are not. So give a board member a call if you are interested. Please

#### MINUTES OF FEB. 19 MEETING

Meeting called to order by D. Buchler at 7:37 with about 90 in attendance. Minutes approved as printed.

#### OLD BUSINESS

1. User Bank: Copyrighted programs have been removed, and copying difficulties in Vol. 14-20 have been corrected. A non-user bank disc has found its way into one of the copies. Please claim it if it is yours.

2. Look for the Apple Orchard (from International Apple Core) sometime in March. There will be future publications, probably available through the local clubs for a fee.

#### NEW BUSINESS

1. Anyone going to the West Coast Computer Faire is urged to contact Dan Buchler at once. Let's get some input into the sessions!!

2. A new journal dedicated (at least for this year) to Apple is out. It appears to be quite good. The club has a copy. Contact Dan.

3. There is an Apple Bulletin Board in the Twin Cities. Phone number 929-8966 24 hours a day. Try it you MODEM owners!

4. Much discussion of local T.V. ordinances that are being written. Effort should be made to try to get them to include a requirement that the cable systems support personal computing transmissions.

5. Discussion of attempts to interface Apple to short-wave (Baudot) systems and transmit. There appear to be some tax breaks for Apple owners here that could be investigated as well as some interesting projects involving the handicapped. As of Mar 17 you will also be able to transmit ASCII code.

Meeting adjourned to presentation of the evening (on business systems) at 8:13.

#### SUPPORT YOUR LOCAL STORE

The president has been recently involved in discussions of our club philosophy towards the local merchants. We definitely endorse the concept that you buy locally. Everybody has seen the mail order ads and knows you can save a few bucks by such means. The amount saved in most cases is very little. What's more important is that a computer component or software is a very complex thing. You need the support of your dealer. I have personally on several occasions been very glad that I had such support available. There is no substitute for that service!!!!!!!!!!!!



```

LOAD SECTOR SCAN
>LIST
900 GOTO 2020
1000 FOR I=J TO K
1020 IF I MOD 16 THEN 1040: IF I#J THEN PRINT :L=I: GOSUB 1620: PRINT " ";
1040 IF I MOD 4=0 THEN PRINT " ";
1060 L= PEEK (DBUF+I): GOSUB 1620
1080 NEXT I
1100 IF P$="p" THEN CALL POF
1120 RETURN
1140 REM PRIOR SR DISPLAYS (PORTION OF) DISK BUFFER. PLACED HERE FOR SPEED
1160 REM SR TO READ/WRITE DISK BUFFER USING TRACK/SECTOR & DISPLAY RELEVANT INFO
1180 CALL RWTS
1200 K= PEEK (37): VTAB 22
1220 L= PEEK (ERRCODE): IF L=0 THEN 1300
1240 PRINT "<<DISK ERROR #";L;">>";
1260 IF L=16 THEN PRINT "PROTECTED";: IF L=64 THEN PRINT "DRIVE ERROR";: IF L=128 THEN PRINT "READ ERROR";
1280 IF PEEK (KS)<128 THEN 1280: POKE KC,0
1300 PRINT BL$: POKE 37,K
1320 VTAB 18: TAB 8:L= PEEK (VOL): GOSUB 1620
1340 TAB 19:L= PEEK (TRACK): GOSUB 1620
1360 TAB 31:L= PEEK (SECTR): GOSUB 1620
1380 TAB 36: PRINT " ";: TAB 36: IF PEEK (TRACK)*100+ PEEK (SECTR)=VTS THEN PRINT "VTOC";
1400 J=0:K=255: IF P$="p" THEN 1440: CALL PON
1420 PRINT : PRINT
1440 VTAB 1: TAB 1: GOTO 1000
1600 REM SR TO PRINT HEX REPRESENTATION OF BYTE
1620 PRINT H$(L/16+1,L/16+1);H$(L MOD 16+1,L MOD 16+1);: RETURN
1800 REM SR TO INPUT TEXT & FORM DEC EQUIV IF SINGLE HEX DIGIT OR 1ST 2 ARE HEX
1820 INPUT Q$:Q$( LEN(Q$)+1)="=="
1840 L=0:X$=Q$(1,1): GOSUB 1860:X$=Q$(2,2): IF X$#="#" THEN GOSUB 1860: RETURN
1860 FOR I=1 TO 16: IF H$(I,I)=X$ THEN 1880: NEXT I:L=-99
1880 L=16*L-I-1: RETURN
2000 REM SETUP VARIABLES,DISK IOB&DCT&CODE, FORMAT DISPLAY, READ DISK VTOC
2020 I= PEEK (202):J= PEEK (203)
2040 K=I-64:L=J-(I<65): IF I<65 THEN K=191
2060 BP=(L-128*(L>127))*256+K: IF L>127 THEN BP=BP-32767-1
2080 SLOT=BP+1:DRIVE=BP+2:TRACK=BP+4:SECTR=BP+5:DCT=BP+6:DBP=BP+8:CC=BP+12
2100 ERRCODE=BP+13:VOL=BP+14:PSLOT=BP+15:PDRIVE=BP+16
2120 POKE 6,K: POKE 7,L
2140 KS=-16384:KC=KS+16:EHOM=-936
2160 PON=781:POF=805: REM PRINTER DRIVER ON&OFF HOOKS
2180 DIM Q$(255),H$(16),BL$(40)
2200 H$="0123456789ABCDEF":BL$="#"
2220 TEXT : CALL EHOM
2240 L= PEEK (7): GOSUB 1620:L= PEEK (6): GOSUB 1620
2260 FOR I=0 TO 3: POKE 512+I, PEEK (1024+I): NEXT I
2280 Q$="": 01 60 01 00 11 00 AA AA AA 00 00 CC EC 00 60 01 FF FF FF 00 01 EF D8"

```



```

2300 QS( LEN(QS)+1)="" A5 07 A4 06 20 D9 03 B0 06 A9 00 A0 0D 91 06 60 NE88AG"
2320 FOR I=1 TO LEN(QS): POKE 515+I, ASC(QS(I)): NEXT I: POKE 72,0: CALL -144
2340 L= PEEK (7):K= PEEK (6): POKE DCT,K+20: POKE DCT+1,L
2360 IF L=128 THEN K=255:L=L-1-(L=128)
2380 DBUF=(L-128*(L>127))*256+K: IF L>127 THEN DBUF=DBUF-32767-1
2400 POKE DBP,K: POKE DBP+1,L
2420 RWTS=BP+24:VTS=1700:READ=1:WRITE=2
2440 POKE PSLOT,16*6: POKE PDRIVE,1
2460 VTAB 18: TAB 1: PRINT "VOLUME"
2480 VTAB 24: PRINT "FUNCT: READ HEX MODIFY WRITE END ";: VTAB 1
2500 POKE SLOT, PEEK (PSLOT): POKE DRIVE, PEEK (PDRIVE)
2520 POKE TRACK,VTS/100: POKE SECTR,VTS MOD 100
2540 POKE CC,READ: GOSUB 1180: REM READ & DISPLAY VTOC
2800 REM MAIN COMMAND LOOP
2820 FOR I=20 TO 22: VTAB I: TAB 1: PRINT BL$;: NEXT I
2840 VTAB 20: TAB 1: INPUT "FUNCTION? ",QS:QS( LEN(QS)+1)="R=":PS=QS(2,2):QS=QS(1,1)
2860 IF QS="R" THEN 3020: IF QS="M" THEN 3420: IF QS="W" THEN 4020
2880 IF QS="H" THEN 3220: IF QS="A" THEN 3910: IF QS="E" THEN 4220
2900 L= PEEK (KS): IF L<128 THEN 2900: IF L#193 AND L#197 AND L#200 AND L#205 AND L#210 AND L#215 THEN POKE
2920 GOTO 2820
3000 REM READ & DISPLAY REQUESTED SECTOR IN HEX
3020 VTAB 20: TAB 1: PRINT "READ... TRACK #";: GOSUB 1820
3040 IF L<0 OR L>34 THEN 3020: POKE TRACK,L
3060 VTAB 20: TAB 21: PRINT "SECTOR #";: GOSUB 1820
3080 IF L<0 OR L>12 THEN 3060: POKE SECTR,L
3100 POKE CC,READ: GOSUB 1180: REM READ & DISPLAY SELECTED TRACK
3120 ALTER=0
3140 GOTO 2920
3200 REM DISPLAY DEC & ASCII EQUIVALENTS OF HEX INPUT
3220 VTAB 20: TAB 1: PRINT "HEX CONVERT... VALUE = ";: GOSUB 1820
3240 IF L<0 THEN 3220: VTAB 20: TAB 32
3260 PRINT H$(L/100+1,L/100+1);H$(L MOD 100/10+1,L MOD 100/10+1);H$(L MOD 10+1,L MOD 10+1);
3280 POKE 1527,L
3300 GOTO 2900
3400 REM MAKE MAX 16 MODS TO DATA IN DISK BUFFER
3420 VTAB 20: TAB 1: PRINT "MODIFY... DISPLACEMENT = ";: GOSUB 1820
3440 IF L<0 OR L>255 THEN 3420
3460 VTAB 21: TAB 1: PRINT "OLD ";
3480 J=DBUF+L;K=J+15*(L<240)+(255-L)*(L>239)
3500 FOR I=J TO K
3520 L= PEEK (I): GOSUB 1620

```

KC,0



```
3540 NEXT I
3560 VTAB 22: TAB 1: PRINT "NEW ";: INPUT Q$: IF LEN(Q$)>2*(K-J+1) THEN 3560
3580 IF LEN(Q$)=0 THEN 3880:Q$( LEN(Q$)+1)="0"
3600 FOR I=1 TO LEN(Q$)
3620 K= ASC(Q$(I,I)) MOD 128
3640 IF K#32 AND (K<48 OR K>57) AND (K<65 OR K>70) THEN 3560: REM VALIDATE SPACE,0-9,A-F
3660 NEXT I
3680 L=0
3700 FOR I=1 TO LEN(Q$)
3720 K= ASC(Q$(I,I)) MOD 128: IF K=32 THEN 3780
3740 K=K-48-7*(K>57)
3760 L=1000*(L/1000+1)+16*(L MOD 1000)+K
3780 IF L<2000 THEN 3820: POKE J,L MOD 1000
3800 ALTER=ALTER+1:J=J+1:L=0
3820 NEXT I
3840 J=J-DBUF-15:J=(J>0)*J/16*16:K=J+31: IF K>255 THEN K=255
3860 VTAB J/16+1: TAB 1: GOSUB 1000
3880 GOTO 2920
3900 REM DISPLAY DISK BUFFER CONTENTS AS ASCII
3910 POKE 32,4: POKE 33,35: POKE 35,16: CALL EHOM: TEXT
3920 FOR I=0 TO 15: FOR J=0 TO 15
3930 POKE 1028+J+J+J/4+I MOD 8*128+(I>7)*40, PEEK (DBUF+16*I+J)
3940 NEXT J,I
3950 GOTO 2920
4000 REM WRITE DISK BUFFER TO DISK IF MODIFIED SINCE READ
4020 VTAB 20: TAB 1: PRINT "WRITING... "
4040 IF ALTER THEN 4100
4060 VTAB 22: TAB 1: PRINT "SECTOR NOT MODIFIED... WRITE CANCELLED"
4080 GOTO 2900
4100 POKE CC,WRITE: GOSUB 1180: REM WRITE & DISPLAY SELECTED TRACK
4120 ALTER=0
4140 GOTO 2920
4200 REM SESSION OVER, EXIT. PROGRAM WILL RUN WITHOUT RELOADING
4220 TEXT : CALL EHOM: END
4400 REM VARIABLE USAGE... ALTER=NONZERO, MODS MADE SO ALLOW WRITE BP=MEMORY ADDRESS OF DISK IOB
4420 REM DBUF=MEMORY ADDRESS OF DISK I/O BUFFER RWTS=MEMORY ADDRESS OFDISK M.L. ROUTINE VTS=TRACK/SECTOR OF Disk
4440 REM BL$=40 BLANKS H$=HEX VALUES 0-F P$="P", PRINT FLAG Q$,X$,I,J,K,L=G.P. USAGE VTOC
4460 REM KC,KS=KEYBOARD CONTROL PON,POF=PRINTER CONTROL READ,WRITE=DISK CONTROL EHOM=SCREEN CONTROL
4480 REM OTHER VARIABLES ARE MEMORY ADDRESSES WITHIN THE DISK IOB
```



```

2300 QS(LEN(QS)+1)="A5 07 A4 06 20 D9 03 B0 06 A9 00 A0 0D 91 06 60 NE88AG"
2320 FOR I=1 TO LEN(QS): POKE 515+I,ASC(QS(I)):NEXT I:POKE 72,0:CALL -144
2340 L=PEEK(7):K=PEEK(6):POKE DCT,K+20:POKE DCT+1,L
2360 IF L=128 THEN K=255:L=L-1-(L=128)
2380 DBUF=(L-128*(L>127))*256+K:IF L>127 THEN DBUF=DBUF-32767-1
2400 POKE DBP,K:POKE DBP+1,L
2420 RWTS=BP+24:VTS=1700:READ=1:WRITE=2
2440 POKE PSLOT,16*6:POKE PDRIVE,1
2460 VTAB 18:TAB 1:PRINT "VOLUME"
2480 VTAB 24:PRINT "FUNCTION":READ HEX MODIFY WRITE END "":VTAB 1
2500 POKE SLOT,PEEK(PSLOT):POKE DRIVE,PEEK(PDRIVE)
2520 POKE TRACK,VTS/100:POKE SECTR,VTS MOD 100
2540 POKE CC,READ:GOSUB 1180:REM READ & DISPLAY VTOC
2800 REM MAIN COMMAND LOOP
2820 FOR I=20 TO 22:VTAB I:TAB 1:PRINT BL$;:NEXT I
2840 VTAB 20:TAB 1:INPUT "FUNCTION? ",QS:QS(LEN(QS)+1)="R=":PS=QS(2,2):Q$=QS(1,1)
2860 IF Q$="R" THEN 3020:IF Q$="M" THEN 3420:IF Q$="W" THEN 4020
2880 IF Q$="H" THEN 3220:IF Q$="A" THEN 3910:IF Q$="E" THEN 4220
2900 L=PEEK(KS):IF L<128 THEN 2900:IF L#193 AND L#197 AND L#200 AND L#205 AND L#210 AND L#215 THEN POKE
2920 GOTO 2820
3000 REM READ & DISPLAY REQUESTED SECTOR IN HEX
3020 VTAB 20:TAB 1:PRINT "READ... TRACK #";:GOSUB 1820
3040 IF L<0 OR L>34 THEN 3020:POKE TRACK,L
3060 VTAB 20:TAB 21:PRINT "SECTOR #";:GOSUB 1820
3080 IF L<0 OR L>12 THEN 3060:POKE SECTR,L
3100 POKE CC,READ:GOSUB 1180:REM READ & DISPLAY SELECTED TRACK
3120 ALTER=0
3140 GOTO 2920
3200 REM DISPLAY DEC & ASCII EQUIVALENTS OF HEX INPUT
3220 VTAB 20:TAB 1:PRINT "HEX CONVERT... VALUE = ";:GOSUB 1820
3240 IF L<0 THEN 3220:VTAB 20:TAB 32
3260 PRINT H$(L/100+1,L/100+1);H$(L MOD 100/10+1,L MOD 100/10+1);H$(L MOD 10+1,L MOD 10+1);
3280 POKE 1527,L
3300 GOTO 2900
3400 REM MAKE MAX 16 MODS TO DATA IN DISK BUFFER
3420 VTAB 20:TAB 1:PRINT "MODIFY... DISPLACEMENT = ";:GOSUB 1820
3440 IF L<0 OR L>255 THEN 3420
3460 VTAB 21:TAB 1:PRINT "OLD ";
3480 J=DBUF+L:K=J+15*(L<240)+(255-L)*(L>239)
3500 FOR I=J TO K
3520 L=PEEK(I):GOSUB 1620

```



```
3540 NEXT I
3560 VTAB 22: TAB 1: PRINT "NEW ";: INPUT Q$: IF LEN(Q$)>2*(K-J+1) THEN 3560
3580 IF LEN(Q$)=0 THEN 3880:Q$( LEN(Q$)+1)="0"
3600 FOR I=1 TO LEN(Q$)
3620 K= ASC(Q$(I,I)) MOD 128
3640 IF K#32 AND (K<48 OR K>57) AND (K<65 OR K>70) THEN 3560: REM VALIDATE SPACE,0-9,A-F
3660 NEXT I
3680 L=0
3700 FOR I=1 TO LEN(Q$)
3720 K= ASC(Q$(I,I)) MOD 128: IF K=32 THEN 3780
3740 K=K-48-7*(K>57)
3760 L=1000*(L/1000+1)+16*(L MOD 1000)+K
3780 IF L<2000 THEN 3820: POKE J,L MOD 1000
3800 ALTER=ALTER+1:J=J+1:L=0
3820 NEXT I
3840 J=J-DBUF-15:J=(J>0)*J/16*16:K=J+31: IF K>255 THEN K=255
3860 VTAB J/16+1: TAB 1: GOSUB 1000
3880 GOTO 2920
3900 REM DISPLAY DISK BUFFER CONTENTS AS ASCII
3910 POKE 32,4: POKE 33,35: POKE 35,16: CALL EHOM: TEXT
3920 FOR I=0 TO 15: FOR J=0 TO 15
3930 POKE 1028+J+J+J/4+I MOD 8*128+(I>7)*40, PEEK (DBUF+16*I+J)
3940 NEXT J,I
3950 GOTO 2920
4000 REM WRITE DISK BUFFER TO DISK IF MODIFIED SINCE READ
4020 VTAB 20: TAB 1: PRINT "WRITING... "
4040 IF ALTER THEN 4100
4060 VTAB 22: TAB 1: PRINT "SECTOR NOT MODIFIED... WRITE CANCELLED"
4080 GOTO 2900
4100 POKE CC,WRITE: GOSUB 1180: REM WRITE & DISPLAY SELECTED TRACK
4120 ALTER=0
4140 GOTO 2920
4200 REM SESSION OVER, EXIT. PROGRAM WILL RUN WITHOUT RELOADING
4220 TEXT : CALL EHOM: END
4400 REM VARIABLE USAGE... ALTER=NONZERO, MODS MADE SO ALLOW WRITE BP=MEMORY ADDRESS OF DISK IOB
4420 REM DBUF=MEMORY ADDRESS OF DISK I/O BUFFER RWTS=MEMORY ADDRESS OFDISK M.L. ROUTINE VTS=TRACK/SECTOR OF Disk
4440 REM BL$=40 BLANKS H$=HEX VALUES 0-F P$="P", PRINT FLAG Q$,X$,I,J,K,L=G.P. USAGE VTOC
4460 REM KC,KS=KEYBOARD CONTROL PON,POF=PRINTER CONTROL READ,WRITE=DISK CONTROL EHOM=SCREEN CONTROL
4480 REM OTHER VARIABLES ARE MEMORY ADDRESSES WITHIN THE DISK IOB
```

&gt;



## SC ASSEMBLER WITH HAYES.

By Thiesfeld &amp; Buchler

We finally got the SC assembler to print on a remote terminal. See listings in this issue of the newsletter. The problem is that the assembler does its own input I/O, so the IN#3 command has no effect. The attached listing is for a BASIC program which will create an EXEC TEXT file. If you then EXEC the text file (called MODEM), the SC ASSEMBLER will be BLOADED, the machine patches will be made, and the system put in PRT mode. This patch is for the 3.2 version of the SC assembler with the 'FIND' option. It is labeled on SC disks as ASMDISK (AUTOSTART).

Line 100 contains the number of lines to be printed on the page. \$2D (45) is the correct value for 8 1/2 high paper.

Line 120, the 7th byte placed into memory, \$33 (51) in this example, is the number of lines that would fit on the paper. On 8 1/2 paper at 6 lines per inch that's

$8.5 \times 6 = 51 = \$33$

For 11" paper, use \$3C (60) and \$42 (66) respectively. To set the line count to 0 for a new page simply type

SF4: 0

```

5 REM CREATE EXEC TO RUN ASM FROM HAYES
6 REM 3/1/80
7 REM INCLUDES PAGE EJECT
10 D$=""
15 PRINT D$;"MON C,I,O"
20 PRINT D$;"OPEN MODEM"
30 PRINT D$;"WRITE MODEM"
33 PRINT "MON C,I,O"
35 PRINT "BLOAD ASMDISK (AUTOSTART)"
40 PRINT "INT"
50 PRINT "CALL -151"
55 PRINT "1C21:01"
60 PRINT "1389:FC 0F"
70 PRINT "FFC:20 07 C3 60"
80 PRINT "1C68:20 05 C3 A9 0 60"
85 REM C3 ABOVE IS SLOT=3
90 PRINT "1C92:4C AA 1C"
95 REM JMP SLW3 OUTPUT C/R
100 PRINT "1C33:2D"
105 REM 45 PRINTED LINES
110 PRINT "1C3D:A9 00"
115 REM DONT UPDATE LINECNT YET
120 PRINT "1C9B:4C 08 1C A5 F4 C9 33
      DO F7 A9 00 85 F4 EA EA"

130 REM JMP $1C08
140 REM LDA LNCT
150 REM CMP TOTAL-LINES -1
160 REM BNE $1C9B
170 REM LDA #0
180 REM STA LNCT
190 REM NOP
200 REM NOP
800 PRINT "1000G"
850 PRINT "PRT"
900 PRINT D$;"CLOSE MODEM"
1000 END

```

## DAN ON PRINTERS

Come to the March meeting if you want to know about printers. Other tidbits: Apple are about to announce a printer. It will be a thermal paper job printing up to 80 colums. It may be made by Trendcom. Price will be around \$500 including interface.

Ads are now appearing for a 40 col plain paper printer by LRC Eaton. It will print on 3 7/8" rolls at 75 lpm. An option will be available to allow printing 64 colums or 32 colums of double width characters. Base price is \$389.

Axiom now has a printer called the IMP-1 'without tractor feed' and the IMP-2 'with tractor feed' for \$695 & \$795 respectively. They claim to have a graphics capability!

According to Byte magazine, Microtype Corporation will soon introduce a \$250 typewriter with RS-232 input/output (serial interface or game port). It will use a daisy-wheel printing method at 15 characters per second. Should be out by Christmas!

A report on printers in the January edition of Mini-Micro Systems makes some interesting comparisons of dot-matrix to other types. Even in the top of the line models, the non dot matrix hold the edge on quality. The Diablo Daisy Wheels, the NEC thimble and the IBM Selectrics produce the top quality but at the expense of speed. (Diablos print at 40 chars/sec.) The above range in price from \$1500 to \$3300.

In the top of the line dot matrix printers, perhaps the most interesting is the Florida Data BNY. It will print a 7 x 8 character matrix at 600cps, or, it makes two passes on a line at 300cps filling a 16 x 16 matrix which results in a 32 x 32 matrix for each character at a net speed of 150cps! The price is \$5500.

Apparently, manufacturers are extremely inconsistant in the way in which they report the reliability of their product. For what its worth, Centronics claims an MTBF of 1200 hours for its standard mechanisms at a 25% duty cycle and 50% character density. I assume that means that if you print half characters and half spaces/returns time wise, and use the printer 2 hours out of 8 per day, you can expect to get 1200 hours of print time without calling for service.

Finally, if you have \$12,000 to \$55,000 to spend on a printer you can get your output in color! At least 6 different color-printing devices are currently being made.



PASCAL WITH HAYES - NEW SOFTWARE by Keith

A PASCAL Utility Micromodem Package (pump) which consists of 4 Functions and 9 Procedures, which have been linked into System.Library file. The BIOS has also been modified (Basic I/O Subsystem). The functions and Procedures included are as follow:

funct/proced	Type	Description	nF-Ring
Boolean	True	on phone ringing	
F-Carrier	Boolean	True if carrier is there	
P-Caron	Boolean	setsorig/ansr & baudrate	
P-Connect	N/A	connects to phone	
P-dial	String	Dials phone no. in string	
P-Diall	Char	Dials a single digit	
P-discon	N/A	Hangs up the phone	
P-wrdlength	Integer	sets wrd-size & parity	
P-Mdmsnd	Char	Sends a single character	
F-Getmdm	Char	gets a single character	
F-Stat	Integer	Gets contents of ACIA reg.	
P-Initmdm	N/A	Initializes ACIA & Modem	
P-Delay	Integer	Delays specified milliseconds	

Also included is 20 pages of source listings & some program examples.

Very good software. sold by

Peripherals Unlimited, Incorporated

2633 East 28th Street, Suite 622 Signal Hill, California 90806

Busn. phone:(213) 595-6858

ABBS phone:(213) 424-3506

PASCAL INTERACTIVE TERMINAL SOFTWARE  
<P.I.T.S.>

The program maintains a 24K copy buffer while running, then stores it to disk as a standard text file which can be accessed by the editor.

## Features:

Dials out thru program Source  
code on diskette

File transmitt capability  
24K buffer & comands:

- Copy on
- Copy off
- Save buffer
- Clear Buffer

Simultaneous printing of Data  
Full/Half Duplex  
Leave & return without losing modem connection.

BASIC INTERACTIVE TERMINAL SOFTWARE  
<B.I.T.S/>

The program is written in machine language, with basic initialization routines for speed and flexibility. The program maintains a 32K buffer (in a 48K system) which can be transferred to disk as a standard text file, at any time.Features:

---Applesoft autodial program with a program to maint. autodial library. ABBS# s in library already.

---System software to convert Integer, Apple-soft and Machine Language into TEXT files

---File transmit capability.

---Large copy buffer & commands:

\*copy on, copy off, save buffer, clear buffer

---Full/Half duplex & 110/300 baud.

---Leave & return to program without losing connection.

---Line formatting to keep words from being broken between lines on the screen.

ABBS software.....\$49.95

PUMP software.....\$24.95

PITS software.....\$34.95

BITS software.....\$34.95

Peripherals Unlimited, Incorporated  
retail price list of 02-22-80

## PASCAL POKE gleaned by Rick Rogers

## Curtesy Apple Hot Line

Machine independent high level languages do not provide easy to use ways of interfacing with specific memory locations. Unfortunately it is often desirable to set flags in the Apple which are used by special hardware such as the Hayes modem. In the example shown below, the user desired to store \$FF (255) in memory location \$BFOF

## PROGRAM POKE;

```
TYPE PA = PACKED ARRAY (0..1)
           OF (0..255);
TWOFACE = RECORD CASE BOOLEAN OF
  TRUE:(INT: INTEGER);
  FALSE:(PTR: ^PA);
END;
```

```
VAR CHEAT: TWOFACE; BEGIN
  CHEAT.INT: = -16625;
  (* BFOF HEX *)
  CHEAT.PTR^(0):=255;
  (* SET FLAG *)
```

END;

## FILE CAB FOR BR PRINTER, REGULAR PRINTER AND HAYES MODEM

Dan Buchler handed out several copies of subject during last month. Extensive use of same revealed some new bugs associated with tabbing beyond 40 columes. Please contact D.Buchler for a later copy.



## THANK YOU

5 busy Apple users and club members took time out last month to bring to you a most interesting evening so that you might all learn a little something about Business users and Applications. We wish to take this opportunity to thank:

\*Chuck Stockwell for bringing his Apple and Graphics and giving a most enthusiastic presentation on how he plans to use that combination in his advertising business. Chuck's artistic abilities were also very evident during the presentation.

\*Gary White for providing both reinforcement to Chuck Stockwell and some insight into other possibilities with the tablet and graphics in general.

\*Gary Hennes for some ideas on how the Data Base Management System can be applied to a small business both in accounting and non-accounting areas.

\*George Otis for telling us about the variety of software available to the business user.

\*Nat Forbes of Computerland for telling us that none of the Data Base Management Systems were as good as the Controller Package of Apples (If you can afford it).

Earl Hinrichs  
Chuck Stockwell  
were kind enough to supply Apples at the last meeting.

## DISCOUNT ON DISKETTES - STATUS

For those of you not attending meetings or reading previous editions of newsletter: Lou Severino of Audio King in the Southdale area offered to let club members purchase Scotch (3M) diskettes at \$2.75 each. On their initial order they were unable to get the 3M diskettes except in plastic library cases. The case added 25 cents to the price of each diskette. Lou could only obtain half of the quantity he needed to fill that first order. So those who had ordered each got half the number of diskettes which they had requested. Lou, meanwhile is attempting to fill the remaining half of those orders, and members are requested to live up to their ordering commitments.

Subsequent, to Lou's announcement, the guys at Digital Den have also offered to match the \$2.75 price for 3M diskettes. They do have 3M diskettes in stock at both stores. But please, if you ordered from Audio King, honour that order. Thank you both Audio King and Digital Den.

By the way, at both Audio King and Digital Den, you must show that you are a member of Mini Apples.

## ADVERTISEMENTS

## Wanted:-

AppleSoft in ROM  
Frank Flynn - 894-1020

## For sale:

Autostart ROM - \$25  
Rudy Elies - 920-5282

## For sale:

Apple II Plus 48k, 1 Disk Drive, Double Disk carrying case, 12" Sanyo monitor. System was bought for a business purpose which did not materialize. Only used one week.

\$2000 or best offer  
Gary Hubbard 937-9440 (o)  
933-6173 (h)

## For sale:

Microproducts P1 Aluminized Paper printer. Requires serial interface (not supplied). Was \$400 new. Perfect condition will sell for \$275 or make offer. (owner just bought an MPI)

Vinyl carrying case for Apple \$18  
4k of memory with jumpers Make offer  
Chuck Boody 1-873-2227

## Heathkit Printer

assembled and checked out. 96 character set. 80, 96 or 132 char/line; 6/8 lines/inch. Software driver. May be connected to game port so you don't need to but interface card

\$635 or best offer. \$900 value.  
Call Chuck Thiesfeld at 830-5020 or write:-

8416 Xerxes Avenue South  
Bloomington  
Minnesota, 55431

## RUMOURS FROM AFAR

According to TV guide, Apple did \$100,000,000 in 79! That's about half of the TRS 80 business. Maybe Apple is aiming for number one spot. (I hope they don't forget their loyal contingent of hobbists!) Apple have joined Tandy in requesting a delay in the deadline set by the FCC for their new Radio Frequency Interference (RFI) standard. The standard goes into effect on July 1st, but the Apple apparently does not meet that standard at this time.

The press is still predicting that the cheaper disk drives will be with us soon. These drives are forecast to have an OEM cost of \$50 and sell with interface for around \$200-\$250.



HANDICAPPED PERSONS USING APPLES

We get a steady stream of mail from various organisations using Apples to help teach Handicapped children. These students had known only failure in their previous educational placements. Now, thanks to the Apples, they compete only with themselves rather than their peers. While working with the Apple the pressure is off. The goal is simply to do better today than you did yesterday.

The students, many of whom are far below their "normal" academic grade level, get a taste of success. Success spurs their interest and an interested child is more likely to learn.

These organizations need software in the areas of:

- Reading                    Perceptual Skills
- Grammar                    Eye-hand coordination
- Math                        History
- Geography

The above points were made to me by The Foundation school in Orange, Connecticut, but as stated above other organizations have requested help. If anyone cares to contribute software, please contact Dan Buchler. Also don't forget the comments made by Mike Young concerning the Baudot society for communicating with the deaf (Ref Feb meeting of Mini'App'Les)

LOCAL BULLETIN BOARD

Did you know that we have an Apple Bulletin Board in the Twin Cities. The number is 929-8966. The Bulletin Board is easily accesible to anyone with a modem - if the lines not busy! Currently the ABB is receiving about 30 callers a day, many long distance. Any caller may log one or more messages. Typical messages are requests for technical help or offers for sale (personal items only please. We do not want to turn it into a commercial marketplace). The ABB also publicizes our club meetings.

The program used is a modification of the Bulletin Board system sold by Peripherals Unlimited. Besides reviewing the messages and entering messages, you can talk to the System Oerator (SYSOP) who by the way is a real Ham. He loves to talk!

MINI'APP'LES is a non profit organization for Apple II owners living in the Twin Cities area. Membership is \$10 per annum. Please send checks to the Treasurer at address shown on cover page.

MINI'APP'LES  
13516 Grand Avenue South  
Burnsville  
Minnesota  
55337