



# mini'app'les

apple computer user group newsletter

VOL III No 7

JULY 1980

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### NEXT MEETING

Wednesday July 16th, 7:30pm  
Minnesota Federal Savings & Loan  
9th Avenue South  
Hopkins, Minnesota

### Music Night:

We plan to demonstrate the Micro Music and ALF boards, perhaps the brand new Mountain Hardware 16 voice board, Buchler's lash-up board, and at least 4 commercially available Music Input systems that work with the Apple Internal speaker. Chuck Boody has organized this meeting and will be the chair the program. If you are intetested in Music, this evening is for you!

### AUGUST MEETING NIGHT

Word processing night Wednesday Aug 20th

We hope to be able to demonstrate amd discuss the merits of some of the many word

### THANK YOU

The 3M corporation represented by Gail Emerson and Len Meisner were responsible for our last months program. They presented the rules for the programming contest to develop a demo package that portrays the advantages of Scotch Magnetic products and answered lots of questions about Scotch disks and diskettes in general. They also presented everybody at the meeting with two free diskettes! One of these is supposed to be used to make your offering for the demo package. We thank 3M for their presentation, the free diskettes and for the chance to enter into their demo competition.

processing systems, both as they pertain to the serious business user, and how they can benefit a hobbyist or home computer user. We hope to persuade someone to demo the new Easy Writer and Videx board combo. (See elsewhere in this issue).

## 3M COMPETITION PRIZE

Our members came down hard on the 3M selection of 20 diskettes as first prize. To some extent, this was the fault of your President for not properly advising them, for your reaction was predictable. The prize has been reviewed by 3M.

A new prize of 50 diskettes has been approved. In addition each participant whose entry shows a reasonable amount of effort or creativity will be awarded a free Mini-floppy Head Cleaning Kit

We thank 3M for their consideration.

## NOTES ON 3M ANSWERS TO QUESTIONS ON MEDIA

Diskette design goal is 3.5 million passes/track.

Both sides of diskette are coated for uniformity in diskettes certified one side only.

Reversing diskettes does cause dirt collected in inside of jacket to come off as rotation direction changes. 3M do not recommend diskettes being used two sides unless you have a two sided (two head) drive.

New head cleaning diskette is only half as abrasive as a regular diskette. Cleans by chemical action.

3m supplies equal , but not better quality material, to a lot of OEM diskette suppliers. Diskettes will retain signal level indefinitely.

## MINUTES OF JUNE 18TH MEETING

Approximately 90 persons were present.

1. Minutes of May meeting were approved.
2. User bank distribution was discussed. It was announced that we would abandon Computerland as a distribution point. Disk Library would be passed on to the next person on the list by delivery directly to that person or through the mail. Details will be supplied.
3. Max Coe will be starting his Assembly Language Class on July 2nd. Class will be held on Wednesday nights (except for 3rd Wednesday of month) at Audio King in Southdale. There is a charge of \$20 for the class.
4. Apple Orchards were sold to anyone wanting them at \$1 a piece.
5. It was mentioned that no one had yet submitted a problem to the Newsletter editor for the Mr Fixit column.

## NIBBLE SPECIAL INTEREST GROUP

We have mentioned at several meetings that we were trying to get people together who subscribe to Nibble, so as to mutually benefit from :

1. Only one person need key in the programs.
2. Updates originating in our own group will be distributed to others in the special interest group.
3. Feed ideas back to Nibble.

The response has been disappointing. According to our records the following are subscribers:

Dan Buchler  
 Chuck Boody  
 Judd Ellmers (N.J.)  
 Mike Murrell  
 Ken Slingsby

I know there are others - maybe this writer (your president) lost the list. If so I apologize. Right now we have the following programs working.

TRAC (+ Boody's mods)  
 SPACE MAZE  
 STAR ATTACK (from Ellmers)  
 AIR SEA BATTLE (from Boody)  
 TOUGH (from Slingsby)

Some comments on TOUGH are in order. I have been a supporter of everything Nibble has done to date. However I think they really goofed with TOUGH (Text Output, Updater and General Handler). They billed their no. 3 Issue as the fantastic issue on "Text Processors". I was looking forward to something that was an improvement on Dan's "FULL EDIT" or from which I could make improvements to Dan's Edit. Well TOUGH is one of the most useless pieces of software that I have seen. The basic idea is plain wrong. TOUGH was written supposedly as a tool to author text .i.e word processing. Nibble did refrain from calling it word processing but I imply that from its suggested use! Nibble is a line oriented editor that confines you to the line structure entered. Anyone who has ever written anything knows that you add and subtract words from lines, thus changing all subsequent lines. All you can do with Nibble is change or retype a line. All subsequent lines start where they started before. Dan's FULL EDIT, which is no pancea, does'nt do that. I must in all honesty relegate TOUGH to the trash can.

## APPLE ORCHARD

The club still has a few copies of the Orchard for sale at \$1. Persons who signed up earlier in the year have not claimed their copies.

## SOME IDEAS FOR NEEDS TO BE MET

by Chuck Boody

Two rather large scale projects have occurred to me that might well be of interest to one or another of the club members. I would be happy to help out, and act as coordinator of the efforts but just do not have the time to do them myself. If several of us work together, all can benefit.

The first of these ideas relates to the graphics program I submitted elsewhere in the newsletter. We really need an integrated set of Hires utilities complimenting the routines Apple provides. One set, written preferably in 6502 code, should provide polar coordinate plotting, a set of characters (user redefinable) to put text and other "6 by 7" graphics on the screen, and have the capability of creating and filling shapes described by their corners or by some other simple means. Ideally these routines should live in some part of the machine that is out of the way (above HIMEM or below LOMEM for example), and should connect directly to the routines already in firmware or software that Apple has provided.

The "guts" of such a system exists in the POLAR PLOT program elsewhere in this newsletter, in the Hires screen letters provided by Apple in the user bank, by the fine set of two sizes of letters available from CALL A.P.P.L.E., in the Mountain Hardware ROMPLUS board, and in several other commercially available sets, and in a program in a recent Recreational Computing issue describing creating and filling simple geometric shapes. All (hah!) that needs to be done is to integrate these ideas.

To compliment these "in memory" routines we need a set of shape creation and manipulation programs. One should be able to create a shape in a variety of scales so it can be shrunk or expanded more readily without losing its identity. One should be able to create a shape, expand, contract, rotate and otherwise manipulate it and then decide whether to keep it. One should be able to extract a shape from a shape table, alter it and resave it. One should be able to adjust the starting point (i.e. the coordinate point at which the shape begins to be drawn) of the shape without having to redraw it. One should be able to easily define special shapes to be put on the screen as alphabetic characters can be by associating them with ASCII values. Again, most of these things exist (MECC has a good start on some of this), but they need to be brought together.

Such a package could be marketable, but could also provide a "name" for our club. Anyone interested??

## PLOTTING BY POLAR COORDINATES

by Chuck Boody (sort of)

A fine article in The Harvest, newsletter of the North Suburban Apple Users Group, by Chris and John Russ describes and provides the real work here. All that has been added is the missing routines to make the program work with the Auto-start ROM and a hook to the version of the Programmer's aid Hires routines that live at \$1000 (already available on our user-bank). These small changes should make the program usable by most of the club members. My real reason for submitting the program (besides the fact that it is very well done and quite useful) can be found in my other article in this newsletter. The rest of this article is extracted from the NWSAUG article almost word for word--give credit to John and Chris Russ, not me!!

If you like the Turtlegraphics in PASCAL, have an application that lends itself naturally to Polar coordinates, or miss the trig functions when programming in Integer Basic then this program will help.

Using the usual PA#1 routines you would begin by defining variables  $X0=Y0=COLR=SHAPE=ROT=SCALE$  in your program. To plot a line you would assign one end of the line to  $X0, Y0$  co-ordinates, CALL POSN, then assign the other end of the line to  $X0$  and  $Y0$  and CALL LINE. Using this program you would assign the origination point to  $X0, Y0$  call POSN if the line is to start at the origin, assign the radius to ROT and the angle (in degrees) to SCALE, and CALL POLAR (16475 as assembled here). This puts the proper Cartesian coordinates into  $X0$  and  $Y0$  so that a call to LINE draws the "radius vector". Sequential calls to POLAR and LINE can draw a series of lines in terms of their polar coordinates, each placed in ROT and SCALE.

The program incorporates sine and cosine look-up tables, will compute coordinates outside the range of the Apple's display and can be used whenever trig functions are needed. "Turtlegraphics" as in PASCAL can be emulated by letting  $ROT = ROT + INCR$  where  $INCR =$  the "turn by" angle.

The demo programs draw a circle and sweep a radar beam around inside it, emulate one of the PASCAL demos in creating spiral plots (a constant angle of ROTation and each side one dot longer than the last), do a random walk, and provide a trig function table--in INTEGER Basic!!

There are some limitations: Do not use negative values for ROT or SCALE, and do not allow ROT to exceed 20,000 degrees. LOMEM must be set at the normal \$800 (2048). Happy Plotting!!!

TURNING THE PAGES with Dave Laden.

During the past few months I have noticed more and more articles appearing on the educational uses of microcomputers. This month is no exception with BYTE focusing on computers in education.

BYTE -- JULY 1980

Guest Editorial: Computers in Learning Environments An Imperative for the 1980's by Dr. Ludwig Braun. Pages 6-10 and 108-114.

The 1980 West Coast Computer Faire: A Watershed Year for Personal Computing by Chris Morgan. Pages 46-48.

Product Description: The Apple III by Christopher Morgan. Pages 50-54.

Education Forum: The Personal Computer--Last Chance for CAI? by Lou Frenzel. Pages 86-96.

Education Forum: Computer Illiteracy--A National Crisis and a Solution for It by Arthur Luehrmann. Pages 98-102.

Interactive Control of a Videocassette Recorder with a Personal Computer by Dr. Richard C. Hallgren. Pages 116-134. This article includes the hardware diagrams and the Applesoft & machine language routines necessary to control a videocassette recorder.

PILOT/P: Implementing a High Level Language in a Hurry by David Mundie. Pages 154-170. A UCSD Pascal program that accepts a subset of the authoring language Pilot.

Byte is published monthly. The yearly subscription rate is \$18.00. Send orders to:  
Byte  
Subscription Department  
P.O. Box 590  
Martinsville, NJ. 08836

CREATIVE COMPUTING -- JUNE 1980

On Buying Printers and Other Fun Part II by David Ahl and Steve North. Pages 20-24.

Mind-Memory Improvement Course by James W. Garson. Pages 28-29. The Teach Yourself by Computer (TYC) for the Apple and TRS-80 is reviewed.

Digital Audio by David H. Ahl. Pages 38-50. This is an indepth look at the many aspects of digital audio.

Computer Music--With the Accent on Music by Jaxitron. Pages 58-62.

Apple Music Synthesizer by Philip Tubb. Pages 74-83. Philip Tubb is the designer of the ALF music synthesizer.

Sound Apple Hint. Page 89. This hint allows you to switch between Apple's internal speaker and an external speaker.

Comprint 912 Printer by Steven Wexler. Pages 90-91. The Comprint is reviewed.

Apple Hi-Res Graphics Made Easy with the VersaWriter by Randy Heuer. This article reviews Rainbow Computing's VersaWriter drawing routines--by McLaughlin. Pages 94-95. This article reviews Curve, a program that produces hardcopy graphs.

Grapher Polar by Steve Rogowski. Pages 98-103. An introduction to graphing in polar coordinates.

The Intri Richard T. Simoni, Jr. Pages 104-107. A short Applesoft program is included.

Apple II Pages 110-113. Two Integer BASIC programs produce various lo-res graphic kaleidoscopes.

Three Dimensional Graphics by Chris King. Pages 128-129.

A Shape Maker by W. B. Smith. Pages 146-147. An Integer BASIC program is used to create lo-res shapes.

Inside Space Invaders by James Hussey. Pages 150-151.

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Morristown, N.J. 07960

INTERFACE AGE -- JULY 1980

Learning with Micros by Louis E. Frenzel, Jr. Page 32. "Computers, Education and CAI-Pro and Con" are the subtopics.

The Mind Revolution by Merl Miller. Page 44. This article is about both computers and humans can understand.

KILOBAUD MICROCOMPUTING -- JULY 1980

A File Sorting Program pages.44-52. This is the conclusion to last months article about writing a file sorting program the Home by Jeff Noynaert. Pages 58-60. An article about home computers in the next ten years.

Dial-up Directory b Frank J. Derfler Jr. Pages 68-70. This month Mr. Derfler talks about using computers as terminals. "Talk on your Apple" is one of the subtitles.

Continued on next page

### Turning the Pages with Dave Laden (Cont)

Add Handshaking to Apple's High Speed Interface by Jeffrey G. Mazur. Pages 136-138. This modification does not require any software patch or the use of the data input line.

Questions ices by David Price. Pages 164-169. This includes cassette tape, disk, and semiconductor (RAM & ROM) Hard Copy for the Apple II by Allan Turoff. Pages 172-173. Usage of the Comprint 912 printer, Muse's net from the Apple Contributed Software Bank.

### MICRO THE 6502 JOURNAL -- JUNE 1980

A Little Plus for y 7-9. A program called "Editplus" adds the editing features of the Apple II plus to the sandard Apple.

APPLE II Integer BASIC Program List by Page by Dave Partyka. Pages 37-39. This is an assembly language program.

BASIC and Machine Language with the Micromodem II by George J. Dombrowski, Jr. Pages 47-48.

TRACER: A Debugging Tool for the APPLE II by R. Kovacs. Pages 59-61. This program runs in conjunction with the single-step/trace routines in Apple's monitor to provide trace information in a different format.

6502 Resource Update by Dr. William R. Dial. Pages 65-66. A list of magazien may be found.

MICRO Club Circuit. Pages 68-69. A list of 6502 related computer clubs.

The MICRO Mike Rowe. Pages 71-73. New software for 6502 based computers.

### COMPARE REVISITED

by Chuck Boody

I've just updated COMPARE and CAPTURE a bit (no pun intended). The changes to COMPARE allow it to create a text file that can be EXECuted to change an earlier version of a program. If someone wants those changes they should see me. CAPTURE has been expanded too. A new MAKE CAPTURE provides CAPTURE.A and CAPTURE.I -- obviously to hook to INTEGER and APPLESOFT Basic programs. You still need APPLESOFT to run COMPARE, but now you can (I think) compare programs in either Basic dialect.

I was asked for a good listing of magazines related to personal computing and Apple in particular. MICRO just put out such a list. I'll have it at the meeting---Chuck Boody.

### LIBRARY UPDATE by KEITH MADONNA

#### New Rules for Software Sub-banks:

These rules are for everyone dealing with the Software Bank, everywhere except our good friends at Zim Computer.

1. Software is to be shipped United Parcel Service. This is to keep a record of how long the software was in your possession and it is our opinion that U.P.S. is faster and more reliable than U.S. mail.
2. You will be given a week in which to copy the complete Software Bank. The fee for copying will be reduced by 50% to cover mailing expenses, which means that it will cost \$1.00 per sub-bank or \$3.00 total. If you have the software bank longer than a week you are required to pay an additional \$1.00 per sub-bank / per week or (\$3.00 per week).
3. If a problem with the sub-banks develops, you are to call either Keith Madonna at 474-3876 or Terry Pinotti at 786-7118. If you can't reach either persons mentioned, then call Dan Buchler at 890-5051.
4. If by chance you destroy one or more of the diskettes you will be required to pay \$6.00 per diskette. If you only erase the information it will cost \$3.00 per diskette to update it. You will be responsible for the software from the time you get it, until the next person on the list receives it.
5. You are required to send the copying fee (check or money order) to the MINI APPLES treasurer

Marilyn Thomas

2735 Irving

Minneapolis, Minn. 55408.

Or make arrangements with Marilyn at 824-9892. If you break one or more of rules 1-5 then it will be at our option to discontinue your service from Mini Apples' and strike your name from any and all lists, software or whatever. These rules may seem harsh, but this is due to the kind of cooperation we have been receiving from our members. There are a few members of our group who have not paid the copying fee and have copied the Software Bank, would these members please send thier fee to the address at rule '5'. (note before I have to call them personally) We are all supposed to work together and the copying fee is used to pay for diskettes which hold the software and for buying the programs which are not submitted to the club. This problem of only 25% of the club members doing 95% of the work for the other 75% who appreciate the effort about 50% of the time has got to stop. Also the problem of 20% of the members who have copied the Software Bank without paying, which means 80% of the paying members are carrying the load, (just like in the middle class with taxes) has got to stop also!

NEW WORDPROCESSING SYSTEM

by Dan Buchler

I visited the Word Processing Symposium at the Minneapolis Auditorium a few weeks ago. The place was filled wall to wall with different systems. Our local company, CPM Corporation has one of the best systems (in this writers opinion). It goes for about \$15000 including a high quality printer. However, the most intriguing stand at the show was that of Computerland, where 3 gentlemen from Peripherals Unlimited were demonstrating their newly released version of Easy Writer which works with the Videx 80 column board.

First of all, let me say that the Videx board is excellent in terms of quality of display. It is far superior to the Sup-R-Term board. I have'nt seen the Double Vision, but I'm told its better than that too. Its one disadvantage is that it is hard switch selectable and can not handle full graphics. However, it was not the hardware that intrigued me, but rather the word processing capabilities available. In general one can say that the Easy Writer package does everything that the CPM system does, but just a little slower and for half the price. Easy Writer will sell for \$250. You need the Videx at \$345 and access to a high quality printer such as a Diablo or Qume. A packaged system goes for about \$6000, which is less than half that of the CPM.

Examples of the sort of thing CPM will do and that Easy Writer does are:

1. Define line lengths greater than that displayed on the screen. You can then scroll that text left or right to see the text fully justified, but only that part which fits on the screen.

2. Global search and replace.

3. Insert and Delete at will.

etc, etc.

Of course there are features on the more expensive systems such as the CPT which are not available on the Easy Writer System. One of these that CPT pushes is an ability to make organization charts and draw the boxes right on the screen. They also have a nifty feature which allows paragraphs or phrases to be saved in temporary storage and later recalled and inserted wherever required.

The point is that the Apple system is very usable, and very professional and quite up to the state of the art!

DAN ON PRINTERS:

You have all read in this column about the advantages of 9 wire heads over 7 wire heads, and of daisy wheel printers over dot matrix, etc, etc. Below are some examples of different types of printing, with the make of printer used indicated.

Teletype 43 at 30cps.

This is the Teletype 43. Text has been reduced to 80% for the newsletter. Its hard to control inking on this machine.

Note decenders on

gpqy 805 POKE 54,0: POKE 55,193

This is an IBM Selectric II with 12 point letter Gothic print ball.

Diablo. Note Bold type which is accomplished by overprinting characters.

then a reverse vertical tab back to and overprint the

This accessory is one of the many document

Qume

family of high quality interchangeable proportional printwheels for plastic printwheel printers...

NEC Spinwriter. Note math symbols in example. This is a print thimbleprinter and is considered one of the real high quality printers.

The font style is Times Roman with additional characters

A-Z UPPER CASE a-z lower case 0123456789 0123456789

!#%()\*+,-./\:<>=?[ ]|~'απσ/θωαΔΩρξταση†‡γλμδβ

∫ ∑ ] [

Treidom. This is a thermal printer. Apple Printer uses same mechanism. 5\*7 dot matrix.

```
"Z(+.147:=@CFILORUXC^adsJMpsvy! #& ),
/258; >ADGJMPSUY\_beh
knatwz}!$*-0369<?BEHKNQWZJ'cfil
orux{"
```

Malibu 165. 9\*7. standard font at 165cps.

WHEN EQUIPPED WITH ITS OPTIONAL APPLE I/ PROVIDES BIDIRECTIONAL PRINTING; AT UP TO HIGH-RESOLUTION GRAPHICS PRINTOUT. AUTO MARGINS, AND EXPANDED CHARACTERS ARE ALL

Malibu 165 at 90 cps. High Density Font.

IN ADDITION TO THE REGULAR HIGH SPEED FONT THE MALIBU HAS TWO ADDITIONAL FONTS. THE F PRINTS AT 90 CPS AND IS VERY USEFUL FOR WORK A MORE SOLID PRINT IMAGE IS DESIRED. LIKE LOWER CASE LETTERS WITH DESCENDERS.

TI 810 5\*7. (Note June newsletter was printed using this printer)

I've been telling you guys that things are happening in the printer world. I'm looking forward to all of the above plus the portable daisy wheel typewriter with EIA interface mentioned in newsletter a few months back.

Emako 22

\* <16.5 CPI> The EMAKO 22 is a high quality dot-matrix impact printer.  
 <10 CPI> The EMAKO 22 is a high quality dot-matrix printer.  
 <8.25 CPI> The EMAKO 22 is a high quality dot-matrix printer.  
 <5 CPI> The EMAKO 22 is a high quality dot-matrix printer.

You will notice that even though some of the dot matrix printers employ 9 wire heads, they do not all print descenders.

You will also note that there is a new printer included in the above examples. It is another of the lower cost 9\*7 batch called an Emako. It appears similar to the Anadex 8000 and Microdot. The model 22P lists for \$895.

One of our members purchased a Base 2 printer (you may have seen it at the last meeting). The Base 2, is not sold locally, but does have some very interesting features. It is a 7\*5 dot matrix printer. It comes with a standard character set and sufficient RAM memory to define one new character set. Using appropriate control characters, you transmit to it, the dot matrix pattern for each character of your own definition. You then may print using this previously defined character set. It also allows you to add several other character sets in ROM or PROM. The printer also has a graphics mode. We will see more of this printer after our member gets his driver problems sorted out.

#### ABBS OPERATIONS by SYSOP

With the advent of the computer age, electronic mail and data communications were born. However these services were usually limited to big companies with huge investments in electronic equipment. The development of the home computer changed this. Electronic mail and data communication are now available to all who have a terminal with communication capability. The APPLE Bulletin Board System <ABBS> is one way the home computer user has access to these services. The ABBS is a general purpose message storage and retrieval program designed and written for the APPLE II computer, enabling it to answer and converse with other computers or terminals over a standard voice grade telephone line. The ABBS is patterned after the Computerized Bulletin Board System <CBBS> developed by Ward Christensen and Randy Suess of Chicago. That system was designed for S-100 computers when the D.C. Hayes micromodem was introduced, it gave the apple an affordable communication interface, hence the ABBS was born. Most of the features of Ward and Randys original implementation are supported by the ABBS. In addition, a number of changes and enhancements have been made to take advantage of certain unique characteristics of the APPLE - D.C. Hayes micromodem combination. When the ABBS is idle, it sits



in the call waiting state. When a user calls in, the micromodem detects the call, and sends out a TYPE <C/R> message. When the user responds the ABBS determines the baud rate, and starts a query routine, asking for the callers name, location, phone number, and terminal type. when the query is complete the ABBS logs this information to a data file and then shows the user a welcome message and the current bulletins. When this is completed the system turns control over to the user and waits for his command. Many of the new users have felt overwhelmed by the number of commands available. I like to think of the commands as falling into two categories. One that changes or sets a mode like half or full duplex and one that takes an action like retrieve a message. Here is a summary of the commands:

B=PRINT LOGIN BULLETIN  
 C=CLUB LISTING  
 D=DUPLEX SWITCH (ECHO/NO ECHO)  
 E=ENTER A MESSAGE INTO THE SYSTEM  
 G=GOODBYE (LEAVE SYSTEM)  
 H=HELP WITH FUNCTIONS  
 K=KILL (ERASE) A MESSAGE  
 L=LINE FEED (ON/OFF)  
 M=CURRENT MODES  
 N=NULLS (SET AS REQUIRED)  
 O=OPERATIONS  
 P=MINI'APP'LES BULLETINS  
 Q=QUICK SUMMARY OF MESSAGES  
 R=RETRIEVE A MESSAGE  
 S=SUMMARIZE MESSAGES  
 T=TIME AND DATE  
 U=USER INFO AND MAIL CHECK  
 V=VIDEO MODE (ON/OFF)  
 W=PRINTS WELCOME MESSAGE  
 X=EXPERT USER MODE (ON/OFF)  
 ?=PRINTS FUNCTIONS SUPPORTED  
 TALK=TALK TO SYSTEM OPERATOR  
 INFO=DATA BASE SUB-SYSTEM ACCESS  
 DNLOAD=DOWNLOAD A PROGRAM

The following is a brief description of the commands:

**B -- BULLETIN FUNCTION** Redisplay the bulletins that are printed at the beginning of the session.

**C -- CLUB LISTING** Quick access to information retrieval sub-system and prints a list of local clubs and user groups.

**D -- DUPLEX SWITCH** Toggles between half and full duplex operation and informs you of the current status.

**E -- ENTER MESSAGE** Allows you to enter a message into the system. The enter function commands are fully self-prompting. After supplying some basic data about the message you will be prompted for "new line 1". entering a C/R at this point will cause a list of "enter" commands to be displayed.

**G -- GOODBYE** Exits the ABBS and hangs up the phone.

**H -- HELP** This prints out a summary of the commands and control codes.

**K -- KILL** Used to delete a message. A password may be necessary if one was used when the message was created.

**L -- LINE FEED SWITCH** Normally for use with terminals that require a line feed as well as a carriage return. This command will toggle the feature on and off.

**M -- CURRENT MODES** Returns the status of current user selectable modes.

**N -- NULLS** Adds an extra delay after a carriage return to allow printers time to move the printing head back to the starting position. This option only is enabled when the line feed mode is in effect. Each null is equivalent to 30 milliseconds delay and is adjustable from 1 to 30. The default value is 1.

**O -- OPERATIONS** Prints current operational information such as operating hours, or conditions.

**Q -- QUICK SCAN** An abbreviated message scan. Displays the subject and date fields of all the messages starting with the message # you specify. The starting message number may be added to the Q command at the function point by separating the two with a semicolon (EX. 'Q;23').

**R -- RETRIEVE MESSAGE** Allows you to retrieve a message. The message number to be retrieved may be added to the R command at the function point by separating the two with a semicolon (EX. 'R;45'). if you had wished to retrieve all the messages after the message number you specified then you would enter a carat preceded by a semicolon (EX. 'R;45;').

**S -- SUMMARIZE MESSAGES** Displays the subject, who to, who from, and date fields of all the messages starting with the message number you specify. The starting message number can be added to the S command at the function point by separating the two with a semicolon (EX. 'S;1').

**T -- TIME AND DATE** Gives you the current time, date, and total connect time with the system.

**U -- USER INFO AND MAIL CHECK** Prints login name, location, phone, login time, and total connect time. This command also prints the message numbers of any messages that are for the caller or that were left by the caller.

**V -- VIDEO TERMINAL MODE** In the video terminal mode, the backspace functions as a true backspace and backs over each character instead of printing them out. This is primarily intended as a convenience for callers with video terminals. This command toggles between the standard backspace mode and the video terminal mode and informs you of the current status.

**W -- WELCOME** Prints the 'welcome' message displayed at the beginning of the session.



X -- EXPERT USER MODE When in the expert mode, certain prompts are done away with and others are shortened. The following is a description of the control codes that the ABBS resonises:

<ctrl C> Kills the line currently being output.

<ctrl E> Retypes the current line up to the present position and allows you to continue from that point.

<ctrl H> (BACKSPACE) Allows you to backspace over one character and prints a "/" followed by the first character you are backspacing over. The system continues printing the characters you are backspacing over until you enter any other character. The ABBS then prints another "/" and the new character that you have entered. The ABBS responds to rubouts and deletes in the same manner.

<ctrl K> Kills the current function and takes the user back to the function prompt.

<ctrl S> Stops output until any other key is pressed Used for freezing the scrolling on a video terminal.

<ctrl U> (FORWARD ARROW) Erases the current line and starts the line over. The following miscellaneous commands are also available:

TALK Pages the sysop for communication mode.

INFO Access to information retrieval sub-system. A menu of selections is printed. select the one you want by number. To re-display the menu enter a C/R. enter 0 to return to the abbs.

#### DNLOAD

TO USE THE DNLOAD ROUTINE MOST EASILY FOLLOW THESE GUIDELINES:

1. HAVE DOS BOOTED WHEN YOU CALL. THERE IS A LANGUAGE SWITCH THAT SELECTS PROPER LANGUAGE FOR A GIVEN PROGRAM BUT FOR THE SWITCH TO WORK PROPERLY YOU MUST HAVE DOS ENGAGED.

2. IF YOU DO NOT HAVE A DISK, CALL FROM APPLESOFT. THAT WAY EVEN INTEGER PROGRAMS WILL DNLOAD. THIS IS SO BECAUSE APPLESOFT DOES NOT LOOK FOR SYNTAX ERRORS UNTIL EXECUTION, WHILE INTEGER BASIC CHECKS FOR THEM UPON INPUT. LATER YOU CAN TAKE AN INTEGER PROGRAM AND PUT IT BACK INTO THE RIGHT LANGUAGE THROUGH AN EXEC FILE.

3. SELECT THE PROGRAM YOU WANT BY ENTERING ITS NUMBER. \*\*\* PASSWORDED PROGRAMS \*\*\*

4. AN ASTERISK AFTER A PROGRAM NAME MEANS IT IS PASSWORDED. IF YOU FAIL TO ENTER THE CORRECT PASSWORD, YOU WILL EXIT THE DNLOAD ROUTINE.

5. IF YOU WANT 'DNLOAD' TO SAVE A PGM ON YOUR DISK DRIVE IT WILL DO IT FOR YOU. BE SURE YOU HAVE A DISK IN THE DRIVE AS ONCE THE SAVE IS CALLED IT WILL NOT WAIT. \*\*\* THE TRANSPARENCY BIT \*\*\*

6. FOR MICROMODEM II USERS: YOU MUST BE SURE THAT YOUR MODEM WILL PERMIT THE ABBS TO GAIN CONTROL OF YOUR MACHINE. THE TRANSPARENCY BIT IS THE FLAG THAT EFFECTS SCREENING FOR CNTL CHARACTERS. TO RESET IT: ENTER CNTL-A, CNTL-X, RETURN POKE 1912+SLOT,2 CNTL-A,CNTL-F

7. AFTER DOWNLOADING IS COMPLETE, YOU WILL BE IN HALF-DUPLEX (ALL CHAR YOU ENTER WILL BE DOUBLED) TO GET BACK TO FULL DUPLEX ENTER CNTL-A, CNTL-F, RETURN

8. IF YOU SELECT A HIRES PICTURE, YOU WILL BE ABLE TO WATCH IT "PAINTED" BEFORE YOUR EYES! \*\*\* CAUTION \*\*\* HIRES PICTURE TRANSMISSION CAN TAKE UP TO 20 (TWENTY) MINUTES, THOUGH MOST HIRES PICS WILL USUALLY TAKE 12-16 MINUTES ON THE AVERAGE. ONLY THE COLOR BYTES ARE SENT. THE BACKGROUND COLOR IS NOT REALLY DNLOADED.

I hope the preceding list of commands and their usage is helpful. I would like to hear your reactions and comments about the system and what you would like to see implemented on it. If you have any problems or need further help TALK to SYSOP.

*We can  
put your  
ad  
here. ↓*

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This is a reproduction of a 'facts' sheet being distributed by the BYTE SHOP in Hayward.

APPLE III FACTS SHEET  
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**SIZE:** 17.5 INCHES WIDE (44.45 CM)  
18.2 INCHES DEEP (46.22 CM)  
4.8 INCHES TALL (12.2 CM)  
CAST ALUMINUM BASE WITH MOLDED PLASTIC COVER

**WEIGHT:** 26 POUNDS (11.8 KILOS)

**PROCESSOR:** APPLE DESIGNED PROCESSOR UTILIZES 6502A AS ONE OF ITS MAJOR COMPONENTS. OTHER CIRCUITRY PROVIDES EXTENDED ADDRESSING CAPABILITY, RELOCATABLE STACK AND ZERO PAGE, AND MEMORY MAPPING.

**EMULATION MODE:** PROVIDES HARDWARE EMULATION OF 48K BYTE APPLE II OR APPLE II PLUS. ALLOWS MOST APPLE II PROGRAMS TO RUN WITHOUT MODIFICATION.

**CLOCK SPEED:** 1.8 MHZ WITH VIDEO OFF, 1.4 MHZ AVERAGE  
1.0 MHZ IN EMULATION MODE

**MAIN MEMORY:** 96K (98,304) EIGHT-BIT BYTES MINIMUM  
128K (131,072) BYTES MAXIMUM  
DYNAMIC RAM MEMORY

**ROM MEMORY:** 4K (4096) BYTES USED FOR SELF-TEST DIAGNOSTICS

**POWER SUPPLY:** HIGH-VOLTAGE SWITCHING TYPE  
+5, -5, +12, -12 VOLTS

**MASS STORAGE:** ONE 5.25 INCH FLOPPY DISK DRIVE BUILT-IN  
140K (143,360) BYTES PER DISKETTE  
UP TO 3 ADDITIONAL DRIVES CAN BE CONNECTED  
BY DAISY CHAIN CABLE (572K BYTES ON-LINE STORAGE)

**KEYBOARD:** 74 KEYS (61 ON MAIN KEYBOARD, 13 ON NUMERIC PAD)  
FULL 128 CHARACTER ASCII ENCODED  
ALL KEYS HAVE AUTOMATIC REPEAT  
THREE SPECIAL KEYS: SHIFT, CONTROL, ALPHA LOCK  
TWO USER-DEFINABLE "APPLE" KEYS  
FOUR DIRECTIONAL ARROW KEYS WITH TWO-SPEED REPEAT  
FOUR OTHER SPECIAL KEYS: TAB, ESCAPE, RETURN, ENTER

**SCREEN:** THREE UPPER/LOWER CASE TEXT MODES:  
80 COLUMN, 24 LINE BLACK-AND-WHITE  
40 COLUMN, 24 LINE 16 COLOR FOREGROUND AND BACKGROUND  
40 COLUMN, 24 LINE BLACK-AND-WHITE  
ALL TEXT MODES HAVE A SOFTWARE-DEFINABLE  
128-CHARACTER SET (INCLUDES UPPER AND LOWER CASE)  
WITH NORMAL OR INVERSE DISPLAY

THREE GRAPHICS MODES:  
280X192, 16 COLORS (WITH SOME LIMITATIONS)  
140X192, 16 COLORS  
560X192, BLACK-AND-WHITE  
PLUS APPLE II MODES

VIDEO OUTPUT: RCA PHONO CONNECTOR FOR NTSC BLACK-AND-WHITE  
COMPOSITE VIDEO  
DB-15 TYPE CONNECTOR FOR:  
NTSC BLACK-AND-WHITE COMPOSITE VIDEO  
4 TTL OUTPUTS FOR GENERATING RGB COLOR  
COMPOSITE SYNC SIGNAL  
NTSC COLOR COMPOSITE VIDEO  
+5, -5, +12, -12 VOLT POWER SUPPLIES  
COLOR SIGNALS APPEAR AS 16-LEVEL GREY SCALE ON  
BLACK-AND-WHITE VIDEO OUTPUTS

AUDIO OUTPUT: BUILT-IN 2-INCH SPEAKER  
MINIATURE PHONE-TIP JACK ON BACK OF APPLE  
DRIVEN BY SIX-BIT DIGITAL/ANALOG CONVERTER OR  
FIXED-FREQUENCY "BEEP" GENERATOR

SERIAL I/O: RS-232C COMPATIBLE, DB-25 FEMALE CONNECTOR  
SOFTWARE SELECTABLE BAUD RATE AND DUPLEX MODE

JOYSTICKS: TWO DB-9 CONNECTORS FOR TWO JOYSTICKS WITH PUSHBUTTONS

PRINTER: ONE DB-9 CONNECTOR (SHARED WITH SECOND JOYSTICK)  
FOR APPLE SILENTYPE PRINTER

CLOCK: CAN BE SET AND READ FROM PROGRAMS  
POWERED BY LONG-LIFE REPLACEABLE WATCH BATTERIES  
KEEPS TRACK OF MONTH, DATE, DAY OF WEEK,  
AND EXACT TIME TO 1/1,000TH OF A SECOND

EXPANSION: FOUR 50-PIN EXPANSION SLOTS INSIDE THE CABINET

SOS: SOPHISTICATED OPERATING SYSTEM HANDLES ALL SYSTEM I/O  
SOS CAN BE CONFIGURED TO HANDLE STANDARD OR CUSTOM I/O  
DEVICES AND PERIPHERALS BY ADDING OR DELETING  
"DEVICE DRIVERS"

ALL LANGUAGES AND APPLICATION PROGRAMS ACCESS DATA THROUGH  
THE SOS FILE SYSTEM

LANGUAGES: APPLE BUSINESS BASIC, PASCAL, FORTRAN (4TH QUARTER)

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Date: 23 June 1980  
From: White.  
Subject: Micromodem Use  
To: Buchler

In my humble opinion your transfer program should have treated all information transferred in an invisible fashion. That is it should have never looked at the body of the program and thus should never have seen the control Z. Its unreasonable to expect the writer of a program to anticipate everything that will ever happen to his program. By your measure someone who created a transfer program might detect the end of the transfer by looking for the string "stop" and would be justifiably upset when he found that the program being transferred contained a "stop" right in the middle causing the loss of the remainder of the program. The best solution is a transfer protocol that permits program (or any data) transfer regardless of the actual program (or data) content. A transfer program that cannot do this is just not a good transfer program. (Send a control Z to an ABBS and what happens? Nothing! Why?)

## INTERNATIONAL APPLE CORE

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MINI 'APP'LES  
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