

News from the Apple Barrel

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Vice President, Bob Stout

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INTERNATIONAL APPLE CORE

It was bound to appear, given the tacitly understood operating principle of computer jocks: "If it's needed, somebody can find a way to develop it." No question that we need it. With a burgeoning number of Apple Users' Groups, both nationally and internationally, management and coordination of information flow has become as complex and stressful an operation as programming in machine language without an assembler!

Consider the present reality. January, 1980, brings us dozens of users' groups, most with some form of newsletter, a majority with software libraries, and comprising several thousand hungry and even talented Apple owners who demand documentation, instruction, software, hand-holding, and a forum for picking the brains of other like-minded hobbyists, not to mention seeking access to Apple Computer, Inc.'s rumors, mysteries, advice and PROGRAMS. Getting the information to flow more or less evenly and fairly in all directions has been needed throughout 1979, but is a must for 1980. And it will happen.

On October 27-28 a meeting was held in San Francisco to discuss the formation of a non-profit organization to pass on all forms of information, both hardware and software, from Apple clubs and users, software and hardware companies, and Apple Computer, Inc. This is to provide information flow in both directions through one organization for the benefit of the end Apple user. DeWayne Van Hooser and Bob Collins from HAAUG both attended, guests of Apple Computer, who have an obviously great stake in enhancing user satisfaction.

DeWayne and Bob reported to the HAAUG Executive Committee upon their return. The Committee decided that HAAUG will join the International Apple Core for a fee of \$5.00 per member per year. The most immediate benefit of this decision will be each HAAUG member's receipt later this winter of the +/- 100-page "THE APPLE ORCHARD" publication, which we hope will be the prototype of a continuing international Apple journal. The ORCHARD will contain articles from each participating user group's membership, articles hitherto not published in local newsletters. Beyond this, our membership will gain us access to Apple's contributed software library, material similar in quality to that already published in the Contributed Programs volumes 1-5 (you remember, Pinball, Seven, Slide Show, Infinite Number of Monkeys, etc!). The International Apple Core will become Apple, Inc.'s channel for contributed software distribution, with tree networks set up to get the stuff out to member clubs.

This implies that local newsletters, such as our own "Apple Barrel," will serve not so much to publish software and reviews, as is now the case, with each local editor frantically beating the bushes (and sometimes the members) for articles, but will instead convey information of less than international importance. "Apple Barrel" will carry meeting notices, announcements of hardware workshops, information by and for our interest groups (which, by the way, will grow in scope in 1980), items pertaining to our Apple Bulletin Board System, summaries of the presentations made at club meetings by speakers (did you catch Randy Moser from Mountain Hardware on December 12th?), as well as software exciting to us, but perhaps not of world-wide impact! "Apple Barrel" will still be the voice of HAAUG and will continue to be viable, as will many other local club newsletters, but no longer will we in Houston be ignorant of what is being worked on in Fort Worth or Seattle or San Francisco. No longer will our individual members who really want to keep up have to hold multiple user group memberships around the country just to be receive current newsletters. And no longer will HAAUG and other clubs like us have to face such an overwhelming torrent of hardcopy documentation. All of this will be organized, both in format as well as in distribution, through International Apple Core. It's been needed, and with the West Coast Computer Faire in March, when the ORCHARD appears, we can say at last, "It's here!"

ROMPLUS+ BOARD DEMONSTRATED

At December's HAAUG meeting, Randy Moser, Sales Engineer for Mountain Hardware, and Tom Scott, National Marketing Mgr., gave an impressive demonstration of the Romplus+ and Keyboard Filter now appearing on the shelves. In brief, this device, which goes into one of Apple's peripheral slots in the rear, can hold up to six EPROMS, and so add custom firmware to your Apple. The Keyboard Filter, by Andy Hertzfeld, extends the monitor and adds lower case letters, keyboard macros, improved cursor movement, stoplist and endlist and other features to the Apple. A thorough review will appear in the next APPLE BARREL. So far, it looks quite good, and its color typefonts, animation capabilities, and user-defined macros and fonts add pizzazz and practical utility alike. Later.

HAAUG'S HARDWARE CONSTRUCTION PROJECT

by Lee Gilbreth

It all sounded exciting -- a chance to save some money, to learn another secret of "how to," and to create something with my own hands. So, I joined in on the HAAUG hardware construction project.

The club was sponsoring the new activity when one of the members had volunteered to design circuitry for an auto-booter.

The auto-boot would fit onto a hobby board (which I later found to be a blank circuit card, designed to slide into one of the seven slots of the Apple computer). The project included the purchase of a starter kit for \$40. This kit supplied all of the necessary paraphernalia to assemble the auto-boot and provided the base to continue on into a more ambitious project of making one's own RS-232 interface and modem. The hobby board was large enough to contain all three circuits and leftovers from the autoboot effort could be used again for the other two follow-up projects.

The potential savings were attractive. An auto-boot retailed for some \$65. Apple sold an RS-232 interface for \$195 and a modem priced anywhere from \$200 - \$400.

I personally was interested in only a modem, but found that an RS-232 was needed to make it work. So why the auto-boot? Well, the club had to start somewhere and the RS-232 and modem circuit weren't ready. I went along.

Some fifteen to twenty of us plunked down our forty bucks and were given a ziplock bag of parts and things, together with a circuit diagram and connection list. We gathered at the Houston Amateur Radio Club one Saturday afternoon to begin our instructional session.

First, the inventory. Out of the bag I pulled a 3x7 plastic hobby board with its printed circuit grid and hundreds of pin holes. Next came the integrated circuit (IC) holders and their corresponding IC chips, all looking like tiny dominoes. Some resistors, a capacitor and a miniature row switch tumbled out. The bottom of the bag contained a roll of wire, a bag of wire-wrap pins and a strange looking rod-like device, called a wirewrapping tool.

The instructor called our attention to a couple of typing errors on the connection list, which certainly didn't look obvious to my untrained eye. In fact, as I surveyed the pile of electronic parts in front of me and glanced over the Theory of Operation sheet being handed out, I began to panic. The guy next to me had brought a pencil soldering iron, and he was diving in without a word. The person across the table from me had already snipped off pieces of wire and was hovering over his pre-prepared board. I began fumbling with the wirewrapping tool, trying to figure it out and feeling increasingly stupid.

It was then a friend came over to show me the steps: first, we spot-soldered the IC holders and row switch onto the board. Next, about a dozen pins were soldered into the appropriate holes called for on our connection sheet. Finally, the wiring.

Friend No.1 had to go back to his own board and Friend No.2 took

over. He pointed out the tiny holes in the end of the wirewrapping tool and demonstrated the wire-insert, slip over the pin and twist technique of the simple tool. I tried it.

He next demonstrated the unwrap capability of the tool to get the mess I made off the pin. I tried it again. He made me unwrap my own mess this time. But after a while, I got the hang of it.

As the afternoon wore on, my board began to look like a plate of miniature spaghetti, as wires crisscrossed from pin to pin. Boy, it got confusing! and from time to time you had to come up for air. Looking around the room I couldn't help thinking of a sewing bee... busy fingers, idle chit-chat, and an occasional "darn" muttered over a mistaken stitch.

The instructor had set up an Apple and disk drive for testing our products and some of the faster ones were in line for their final exams. Two flunked. One passed, but he was the whiz who had the head start. Self-doubt started to cloud over me again.

The instructor announced he found another error on the connection sheet. Ye gads, I had already passed that point and had to undo two wires to get back to the misrouted one.

Another person passed, but two more failed. What about MY moment of truth?

It was getting late when I took my turn. I had checked my work very carefully, ticking off each number on my worksheet as that wire was connected. Yet, I was not confident -- the board looked a mess.

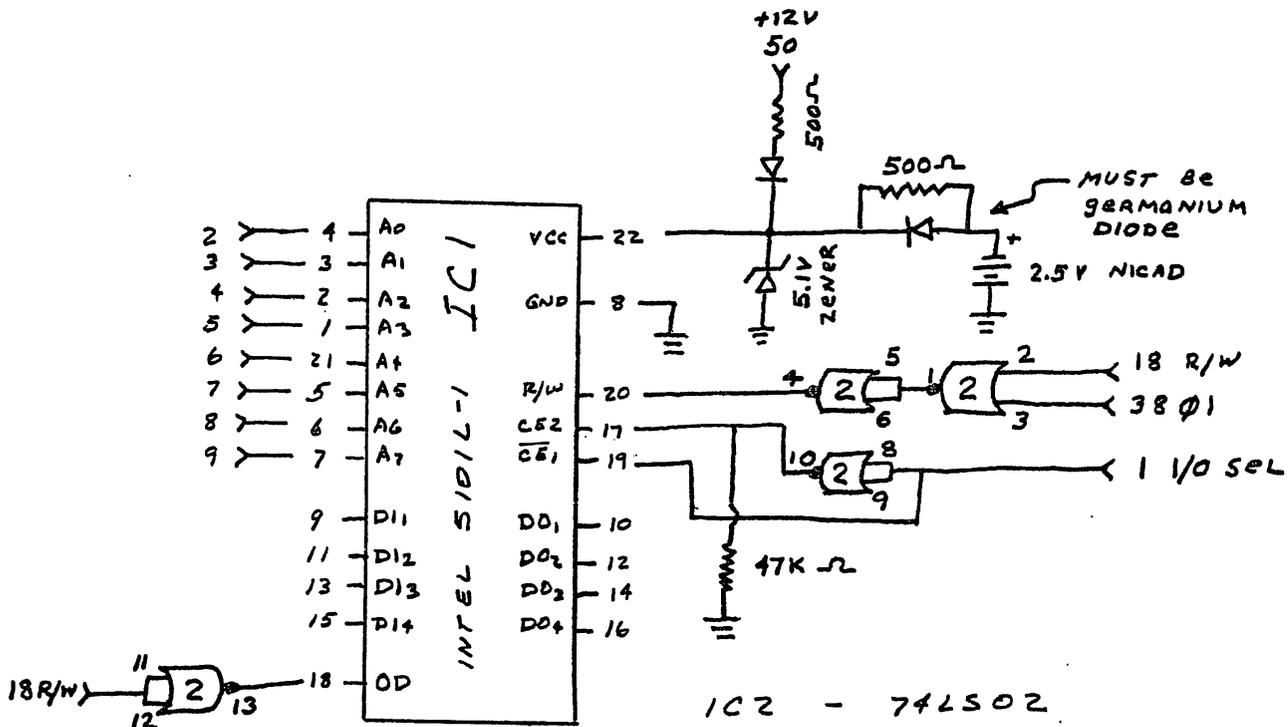
I flunked! The computer just sat there when we flipped it on and "reset" responded with just its asterisk. The disk drive remained silent.

Crushed, I returned to my seat and began checking my circuit. Eureka! The row switch wasn't set. Back to the test line I flew. This time the disk drive roared into life upon command. I had won.

Today, a RS-232 interface adjoins my auto-boot and HAAUG is setting up for the modem project. Besides two new devices, I feel that I have gained knowledge and appreciation for the hardware side of the Apple. Too, I learned that I needed, for the first time of my life, glasses.

BATTERY BACKED UP STATIC RAM

We offer the following hardware project for those of you who want to try it on your own. If there is sufficient interest we may do it as a club project. The circuit described below provides 256 bytes of low power CMOS memory that is backed up by a small Nicad battery to retain data for thousands of hours when the Apple's power is off. The project is a neat way to store your printer driver program for the interface project, the stop list routine, or any short machine language program that you use often. It requires two memory chips, one logic chip, and a couple of diodes and resistors. The cost of parts is approximately \$20.



The above diagram depicts only one half of the memory. IC1 is a 256 X 4 RAM and it takes two to give a 256 byte memory. It is essential to use the Intel 5101L-1 chip or an exact equivalent.*

Connect each DI to its respective DO and then in order to Apple's data lines D₀-D₃. A second 5101 is connected exactly like the first except its data lines D₁-D₄ are connected to the Apple's D₄-D₇. As an example connect DI₁(pin 9) to DO₁(pin 10) to Apple's D₀(pin 49).

The RAM resides in CX00-CXFF, X being the slot number. It acts just like normal memory except that the data is retained when the power is off.

If anyone needs help on this project, call David Marchand at 497 7366.

*Active Electronic Sales Corp. advertizes a 5101 for \$4.50 in Popular Electronics. Part No. 5101 450NS (low power).

Review of the Alf Products Music System
(c) 1979 James Patrick McGee

Another victory for intelligent designers! ALF Products has taken a good idea, put some really clever design work into it and come out with a product that is just short of great.

The product is the ALF Music board for the Apple][. The good idea was to make an inexpensive board that would play three different notes at the same time. Adding a variable amplifier to each channel allows envelope shaping and dynamics. This is the basis for a good system, but the software gives the claim to greatness. I have never seen music software so easy to use.

HARDWARE:

The hardware consists of an Apple][plug in board that connects directly to an amplifier. Each board has three music channels that play into one channel of an amplifier. Therefore two boards are required for stereo.

Each of the three music channels consists of a 16 bit divider and a variable gain amplifier. The divider takes the output of the on-board crystal oscillator and divides it by a number specified by the Apple. This gives a square wave of any frequency from ultrasonic to subsonic. This square wave is fed into the variable gain amplifier. The gain is also set by the Apple.

The capabilities of this hardware are enormous! The frequencies of the output can be specified to within a small fraction of a Hertz. Volume can be changed from pianissimo (very soft) to fortissimo (very loud). The shape of a notes envelope can be anything. A short attack followed by a long decay produces a bell-like tone, while inserting a sustain produces an organ tone.

SOFTWARE:

There are three main programs included with the board. The first gives an annotated description of the capabilities, playing notes and graphing them. The second is a set of subroutines that can be included in other programs. They provide easy access to the hardware without requiring a detailed knowledge of exactly how it works. The third allows entry of scores and is the real beauty of the system. It shows the real genius of the designer.

Obviously, using a computer music system requires knowledge of both computers and of music. The less knowledge required about either one, the greater potential audience. ALF has done an excellent job of reducing the musical knowledge required to an absolute minimum.

ENTERING SCORES:

ENTER uses the Apple hi-resolution graphics screen to picture the musical staff. One paddle is used to move a note up and down until it is in the right position. Press the button on that paddle and the note sounds and appears on the screen. The other paddle is used to select the note duration. Moving the paddle moves an arrow left and right under a row of symbols for the note lengths - down to a 64th note. Press the button and a cursor block lights up below the selected symbol. Rests, sharps, flats, triplets, and dotted notes are selected with the same arrow, as are the editing functions move left, move right, insert, and delete. Entering a piano score is just a matter of turning the knobs and pushing the buttons until the picture on the screen matches the one on the sheet music. I don't really know how to read music (I had a year of piano lessons back in junior high), but after only a few minutes practice, I could easily enter music quickly.

After several days of practice, I timed how long it took me to transcribe a score. Most popular music went at about 500 notes or 2 to 3 pages per hour. Bach fugues took about an hour for 300 notes or 1 page. A few difficult passages took longer. These times are for 5 and 6 part music.

SUBROUTINES A PROBLEM:

Unfortunately, the designers at ALF didn't succeed in reducing the computer knowledge required as much as they did the music knowledge. The method of handling repeating sections of the score is to introduce the concept of subroutines. A subroutine containing the section to repeat is created, and a call is inserted into the main program by a keyboard entry. This is a powerful concept, but most computer jocks don't realize that this basic (to them) concept can be very hard for a non-programmer to grasp. A less programming related way of handling repeats could significantly increase the potential audience (customer base).

PLAYING THE SCORE:

The PLAY program plays the score at a variable speed with a dynamic graphic display. The speed is controlled with one of the paddles and may be changed while the music is playing. Part of the textual information saved with each score is the suggested playing speed. Before PLAY starts the music, it translates the paddle position into a number which is displayed on the screen. Turn the paddle until the screen shows the speed you want, then press the button to start the music.

There isn't enough time while the Apple is controlling the music to draw the notes in hires graphics. This led ALF to design a low resolution method of displaying the notes. First, a grey horizontal line is drawn for each part. A white spot is put on the line to indicate middle C. As each note is played, it is displayed above the grey line for that channel. Higher notes go to the right of middle C, lower to the left. The color of each note depends on its volume at each instant. A fast attack envelope shows rapid color changes up to red, while a slow decay shows slow changes down to purple, then disappearing. This display is a very effective way of showing the relationships between the parts. I think it is much better and more dramatic than drawing the notes.

ONE STEP SHORT OF GREATNESS:

The one big complaint I have with this system is that the output is square waves. Even with all the fancy trimmings, I still find square waves boring. I realize that a system able to play many different waveforms would be more expensive. However, to me, that is required before it would be a truly great system.

TWO PROGRAM BUGS:

When setting the playback speed, the number displayed ranges from 0 to 255. But, about 90 degrees of the paddles rotation displayed 255, while affecting playback speed. This made it difficult to time some slow pieces.

When playing high notes, the white 'middle C' block disappeared.

I found no other bugs, a record I consider remarkable.

FINALLY:

Get two boards. Three parts just isn't enough. I got bored with one board in less than a week. There are only so many Three Part Inventions. A lot of popular music is written in four part harmony.

The ALF music system for the Apple is really a good product. It is incredibly versatile. The software is trivially easy for a programmer to use, and not too difficult for a non-programmer. When the music is playing, the display is fascinating. I have learned more about music in two weeks with this system than in a year of piano lessons. And I had a lot more fun doing it.

DUES INCREASE

With gold going for over \$600 an ounce, it stands to reason! HAAUG's Executive Committee has realized (different from simply deciding) that International Apple Core and the APPLE ORCHARD, plus our own APPLE BARREL, the need for funds to put money up front for purchases of hardware project parts, cassettes and disks for program - of - the - month distribution, and the possibility of purchasing and/or maintaining for club use such devices as ABBS or an EPROM burner, require \$17.50 to \$18 per member in 1980. Accordingly, all new memberships and all 1980 renewals will be \$18. Few of us could honestly say we never got twelve 1979 dollars' worth of benefit from the club last year - in software, in meeting night programs, in professional-quality advice, in member discounts from Apple dealers, and in hardware kit savings and instruction. It was a real deal! And eighteen 1980 dollars will be at least the equal, assuming you squeeze every advantage due you as a member out of your club. Have fun.

TRAVEL YOUR APPLE IN STYLE

HAAUG member Larry Bauman has come across a very good deal for those Apple owners who need to transport the computer plus one or more disk drives. It's an attache-style carrying case specifically designed to hold your Apple and a disk drive or tape recorder in fully operating configuration. You do not need to disconnect and reconnect cables and run the risk of fatigue and failure. Just remove the case top, plug in power cord and connect video monitor. Storage space in the top for disks, documentation, etc. Straps and foam rubber inside.

When Larry showed a sample case at the last club meeting, he announced a discount for HAAUG members, good through December 31, 1979. It's been extended. If your order is gotten to him by JANUARY 14, it will be honored at the discounted price.

Use the order form on the adjoining page. Best to CALL Larry if you are going to shave it close to the 14th., just to be sure. He has seven or eight orders already just from the demo at the meeting.

DECEMBER 1979
Apple Case Order

Larry Baumann
11711 BARDLON
HOUSTON TX 77072

Home: 498-3433

Office: 661-2053 XT244

NAME _____

PHONE# _____

| <u>QTY</u> | | <u>price</u> | <u>EXTENDED</u> |
|------------|---------------------------|------------------|-----------------|
| _____ | DELUXE CASE - Single disc | 75 ⁰⁰ | _____ |
| _____ | DELUXE CASE - Double Disc | 80 ⁰⁰ | _____ |
| _____ | STANDARD CASE | 59 ⁰⁰ | _____ |

TOTAL DUE _____

Shipping charges, if any, will be due on delivery of your order.

DATE:

AMOUNT:

Received for AppleCase order from _____

Larry Baumann
11711 Bardlon
HOUSTON TX 77072
Home: 4983433
office: 661-2053-XT244

WANT AND DON'T-WANT ADS

Interested in buying a used INTEGER CARD for Apple ii+. Ross Whiteside, Rt. 1, Box 98, Angleton, TX 77515. phone 713-849-5910 (home) or work: 713-238-2274.

AUTO-BOOT/RS-232 BOARD for sale. Wires checked out and it works. Will swap Apple Firmware Board or \$100. Call Doyle Hansel, 932-9482.

ASM-65 DISK ASSEMBLER/EDITOR by Programma International. Serial #96. This includes the famous Programma Apple Pie editor for editing disk files. These disk files are then assembled and the binary output is written back to the disk. Selling because I upgraded to PASCAL. List \$70 + tax. Sell for \$50. Pat Mc Gee, 666-0004 day and night.

DISK CONTROLLER CARD for sale. Use it to speed up copies on a 2-disk, 1-controller system, or save \$100 when getting your first disk. Can't use it on PASCAL system. Sell for \$50. Pat Mc Gee, 666-0004 day and night.

"YOUR WANT/DON'T WANT AD HERE" Call Apple Barrel editor, Ed Seeger, to place an ad, or to find out latest offerings prior to publication! Ads placed onto Apple Bulletin Board System if desired. 723-6919 evenings.

USED EQUIPMENT: TERMINALS, PRINTERS and accessories. Speak with Bob Stout, 495-5533.

ABBS BACK ON LINE : 654-0759 EVENINGS

HAAUG's Apple Bulletin Board System, inoperative for many weeks, is now up and running from an office in downtown Houston.

Printed in this issue of APPLE BARREL is a listing of the command functions you will need to use with the system. It is NOT currently possible to get hardcopy while a modem is in operation, so although ABBS gives you this stuff on the video screen, you cannot get a copy to keep at hand, other than calling for function "H", which prints this Help list on the screen only.

System requirements are a terminal (the Apple happens to do fine) and an originate modem, such as D. C. Hayes' and others. Time and date function is not currently supported (but a real-time clock is a possibility if the new dues structure allows it).

Austin's users' group also has a functioning ABBS, at 1-512-657-0779.

FOLLOWING IS A BRIEF LIST AND DESCRIPTION OF THE COMMANDS AND THEIR USAGE:

ABBS

CTRL E--RETYPES CURRENT LINE UP TO PRESENT POSITION AND ALLOWS YOU TO CONTINUE FROM THAT POINT.

CTRL H (BACKSPACE)--ALLOWS YOU TO BACKSPACE ONE CHARACTER AT A TIME AND PRINTS A '^' FOLLOWED BY THE CHARACTER YOU ARE BACKSPACING OVER. THIS IS THE SAME ROUTINE AS IS USED FOR DELETE OR RUBOUT INSTEAD OF TRUE DELETE. (FOR THE BENEFIT OF PRINTERS)

CTRL U (FORWARD ARROW)--STARTS YOU BACK AT THE BEGINNING OF THE CURRENT LINE BEING TYPED. (I.E. START OVER)

<C/R> TO CONTINUE, <E> TO END ?

A--APPLE 40 COLUMN. NORMALLY YOU WOULD BE ALLOWED 64 CHARACTERS PER LINE. A BELL WILL SOUND AT 59 AND ON UP TO 64 COLUMNS AT WHICH POINT YOU WOULD BE FORCED ONTO THE NEXT LINE OF TEXT. IN THE APPLE 40 MODE, THE BELL WILL RING AT 35, THEN AGAIN AT 38 AND 39. DROPPING YOU TO THE NEXT LINE AT 39. 39 WAS USED INSTEAD OF 40 TO AVOID AN EXTRA BLANK LINE BECAUSE OF THE 40 TH CHARACTER.

B--PRINT BULLETIN. PRINTS BULLETINS AT BEGINNING OF PROGRAM.

<C/R> TO CONTINUE, <E> TO END ?

D--DUPLEX SWITCH. ALTERNATELY SELECTS FULL OR HALF DUPLEX OPERATION AND INFORMS YOU OF CURRENT STATUS.

E--ENTER MESSAGE. ALLOWS YOU TO ENTER A MESSAGE INTO SYSTEM. ENTER COMMANDS ARE BASICALLY SELF EXPLANATORY. A CARRIAGE RETURN (C/R) AT THIS POINT WILL LIST OUT THE COMMAND MENU FOR ENTRIES. THE CHANGE COMMAND ALLOWS YOU TO CHANGE AN ENTIRE LINE BUT NOT JUST CHANGE PART OF IT. MAKE SURE WH YOU ARE DONE WITH THE MESSAGE TO SAVE IT TO DISC WITH THE 'S' COMMAND.

<C/R> TO CONTINUE, <E> TO END ?

INPUTLINE >4 CHARACTERS REENTER ?

G--GOODBYE. EXIT PROGRAM.

H--HELP. PRINTS THIS ROUTINE.

K--KILL A MESSAGE. ENTER THIS TO DELETE A MESSAGE FROM THE FILE. A PASSWORD MAY BE NECESSARY IF ONE WAS USED AT THE TIME OF MESSAGE ENTRY.

L--LINE FEED ON/OFF. NORMALLY ON. FOR TERMINALS THAT NEED AN EXTRA LINE-FEED CHARACTER TO ADVANCE TO THE NEXT LINE.

<C/R> TO CONTINUE, <E> TO END ?

N--NULLS. ADDS AN EXTRA DELAY AFTER A CARRIAGE RETURN TO ALLOW PRINTERS TIME TO MOVE THE PRINTERHEAD BACK TO STARTING POSITION. THIS OPTION ONLY WORKS WITH THE LINE FEED OPTION ON. EACH NULL IS EQUIVALENT TO 30 MILLI-SECONDS DELAY AND IS ADJUSTABLE FROM 1 TO 30. IT DEFAULTS TO ONE.

Q--QUICK SCAN. AN ABBREVIATED SCAN. SEE 'S'

R--RETRIEVE MESSAGES. ALLOWS YOU TO RETRIEVE A MESSAGE FROM THE FILE.

<C/R> TO CONTINUE, <E> TO END ?

S--SUMMARIZE MESSAGES. ALLOWS YOU TO SCAN OVER MESSAGES STARTING AT THE MESSAGE # YOU SPECIFY.

T--TIME AND DATE. GIVES YOU THE CURRENT TIME AND DATE. THIS IS ALSO USED AUTOMATICALLY DURING LOG-IN.

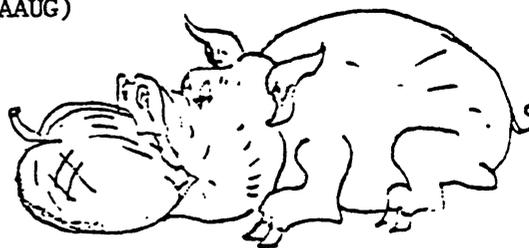
W--WELCOME. PRINTS WELCOME MESSAGE AT BEGINNING OF PROGRAM.

X--EXPERT USER. DOES AWAY WITH CERTAIN EXPLANATORY MESSAGES DURING THE PROGRAM. IT ALSO ALLOWS CERTAIN C/R DEFAULTS. EX: A C/R IN RESPONSE TO FUNCTIONS? WILL PRINT FUNCTIONS SUPPORTED BY THE SYSTEM.

<CR>--PRINTS FUNCTIONS SUPPORTED IN THAT CURRENT MODE OF OPERATION.

HOUSTON AREA APPLE 'USERS' GROUP (HAAUG)

A gathering formed of amateurs and professionals who hold a common interest and desire to learn, and get more out of their Apple computers. The Group freely exchanges programs from a vast software library. Members help each other solve computer problems and relay valuable information through meetings and newsletter. Special hardware construction projects and bulk, economic purchases of support equipment are sponsored.



HAAUG GETS THE MOST OUT OF THE APPLE

OFFICERS December 12, 1979

| | | |
|--------------------------------|-----------------|----------|
| President | Bruce Barber | 469-5805 |
| Vice President | Bob Stout | 495-5533 |
| Treasurer | Ray Essig | 497-7165 |
| Secretary | Jim Odom | 426-3970 |
| Chairman Newsletter | Ed Seeger | 723-6919 |
| Chairman Software Library | Dennis Cornwell | 774-0671 |
| Chairman Hardware Projects | David Marchand | 497-7366 |
| Chairman Business Applications | Rudge Allen | 622-3979 |
| Chairman Membership | Lee Gilbreth | 342-2685 |

The Group conducts a general meeting every second Wednesday of the month, in the Jungman Library, 5830 Westheimer at 6:30 pm (6:00 orientation for perspective new members). A work session also takes place at 2:00 pm, the last Saturday of the month, at the Houston Amateur Radio Club, 7011 Losier Street, two miles east of the Astrodome.

To: Lee Gilbreth
3609 Glenmeadow
Rosenberg, Texas
77471

From: (Name) _____
(Address) _____
(Tel No.) _____

I wish to join the Houston Area Apple Users Group (HAAUG).
Enclosed is \$18.00 (by check, cash, other) for one full year membership.
This will entitle me to free subscription to the Apple Barrel Newsletter, no-cost access to the HAAUG software library, privileges to the hard copy reference library, and opportunity to participate in all other activities of the Group.

Signed: _____

Check if you want your name on mailing list for Apple-related products.

Ed Seeger, Editor
APPLE BARREL
4331 Nenana Drive
Houston, Texas 77035



(713) 723-6919



* **3** FIRST CLASS MAIL *
* * * * *

DeWayne Van Hoozer
4510 Avalon
Lawton, OK 73501

Postmasters:

Address correction requested

Hi DeWayne!
-EJ