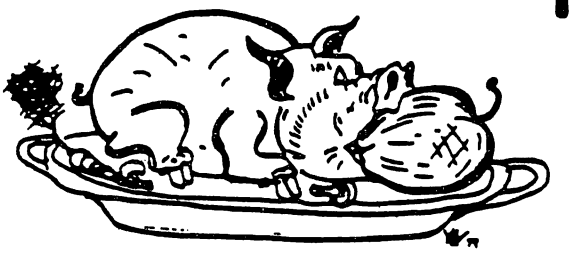

H.A.A.U.G.

HOUSTON AREA APPLE USERS GROUP

THE APPLE BARREL

VOLUME 5 NO. 7 SEPTEMBER 1982

PRESIDENT, MIKE KRAMER VICE PRES., BRIAN WHALEY

EDITOR, MIKE KRAMER

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Houston Area Apple Users Group
APPLE BARREL
2218 Running Springs
Kingwood, TX 77339

CLUB NOTES

The HOUSTON AREA APPLE USERS GROUP is an Apple user club, not affiliated with Apple, Inc., or any retail computer store. HAAUG is a member of the International Apple Core and supports its publications and purposes. General membership meetings are held on the second Thursday of each month in the rear chapel of Memorial Lutheran Church, 5800 Westheimer, between Chimney Rock and Jungman Library, beginning at 6:30 P.M. An additional general meeting is held beginning at noon the last Saturday (the third Saturday starting in November) of each month at the UT School of Public Health in the Medical Center at 6905 Bertner at Holcomb. This meeting features tutorials, special interest group meetings, problem-solving sessions, and access to the HAAUG software library. The meeting is held in the main floor meeting room to the left of the entrance. Bring your Apples!!

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---===*===---

NEW APPLE HOTLINE
713-895-8612

The APPLE HOTLINE has been established to provide an easy means to learn of meeting topics, news, etc. It can also be used to obtain answers to puzzling Apple - related questions. If you get a recording, leave your name, date, and time. You should get a return call within 24 hours.

MEMBERSHIP INFORMATION

Dues are $20 per 12-month period. Make checks payable to Houston Area Apple Users Group and mail to Lee Gilbreath, 3609 Glenmeadow, Rosenberg, TX 77471.

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APPLE BARREL REPRINT POLICY

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SPECIAL INTEREST GROUPS

Members who share interests are encouraged to join or form Special Interest Groups to more fully explore their fields. These groups meet separately from the regular meetings at times convenient for the members. If you would like to become involved in a special interest group, either call the HOTLINE. Lists of members with specific interests can be generated on request from the HAAUG MEMBERSHIP SURVEY data base.

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THOUGHTS FROM THE PRES

Beginning this month (September) HAAUG members will hopefully begin to enjoy the Saturday meetings a little more thanks to the University Of Texas School of Public Health. As many of you already know, we have been blessed with the use of classroom facilities for special interest group meetings and/or tutorials at the Saturday session. This should encourage more involvement by the members in a variety of different groups without having to spend precious evenings driving all over Houston to participate. Elsewhere in this issue are listed the room assignments for the different groups. There are still some slots left, so contact Gus Gusmarino at 481-5329 to make arrangements. We have been given the use of the additional space because thus far HAAUG members have, for the most part, been pretty responsible. In order to remain in UT's favor we will be expected to use the rooms only for the purposes stated above but not for visiting, swapping software, eating, etc. The rooms should be left clean, so take your trash, etc. with you when you leave. The ONLY time a computer can be set up in one of the rooms is for demonstration or tutorial purposes. Under no circumstance are the special rooms to be used as a place to run nibble copier programs.

I would like to express my appreciation for the large number of good articles submitted for the Apple Barrel. I now have the problem of having to pick which to put in this issue after having twisted so many arms. If your article did not make it this time please do not get impatient as it will get into the next issue. For the first time, I accepted an article via modem (from Van Hoozer), and found it to be fairly painless. I am reluctantly publishing my phone number again (358-6687) so that others can try it, but ask that you continue to call the Hot Line for questions of a general nature as Van Hoozer has little else to do but talk on the phone.

I received a call from Jim Good this week regarding the great deal of difficulty he is having getting help with the software copy desk at the Saturday meeting. Out of 40 members who checked the block on the survey form, only 4 agreed to help. We are one of the few large Apple clubs that still handles the software library as we do. Most take orders for delivery at a later date or precopy certain disks in anticipation of certain requirements. Next time you stand in line getting your copies, take the time to sign up to help the next time. You don't need to know ahead of time how to run the copy program and you don't have to have two disk drives. So volunteer....your club needs your help.

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- Time in hours, minutes and seconds.
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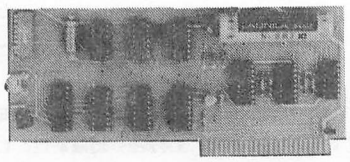

- Twenty-seven page operating manual included with many examples of programs to use with your Apple in any configuration.
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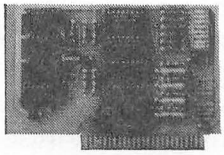

- Complete 16 volce music synthesizer on one card. Just plug it into your Apple, connect the audlo cable (supplied) to your stereo and boot the disk supplied and you are ready to input and play songs.
- It's easy to program music with our compose software. You will start right away at inputting your favorite songs. The Hi-Res screen shows what you have entered in standard sheet music format.
- We give you lots of software. In addition to Compose and Play programs, the disk is filled with songs ready to run.
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- Will play songs written for ALF synthesizer (ALF software will not take advantage of all the features of this board. Their software sounds the same in our synthesizer.)
- Automatic shutoff on power-up or if reset is pushed.
- Many many more features.

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- 8 Channels
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- Fast Conversion (.078 ms per channel)
- Eliminates The Need To Wait For A/D Conversion (just PEEK at data)
- A/D Process Totally Transparent to Apple (looks like memory)

The analog to digital conversion takes place on a continuous, channel sequencing basis. Data is automatically transferred to on board memory at the end of each conversion. No A/D converter could be easier to use.

Our A/D board comes standard with 0, 10V full scale inputs. These inputs can be changed by the user to 0, -10V, or -5V, +5V or other ranges as needed.

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- Provides 8 buffered outputs to a standard 16 pin socket for standard dip ribbon cable connection.
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- Features 8 inputs that can be driven from TTL logic or any 5 volt source.
- Your inputs can be anything from high speed logic to simple switches.
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- Now on one card, you can have 8 digital outputs and 8 digital inputs each with its own connector. The super input/output board is your best choice for any control application.

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- TOTALLY compatible with all CP/M software.
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- Does EVERYTHING the other Z-80 boards do, plus supports Z80 Interrupts.
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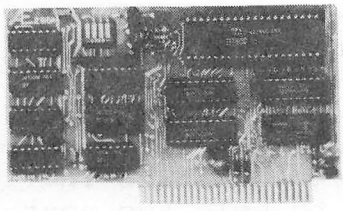
- Complete documentation included. (user must furnish software)



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TRACK & SECTOR COPIER

BY

CLARK JOHNSON

I have written and am now adding a new utility program, entitled "Track & Sector Copier," to the club library. This program could be beneficial to you in two ways: 1.) to serve as a fairly powerful (and free) program which can copy any range of tracks and sectors from one disk to another and 2.) to learn about the inner workings of DOS, especially RWTS.

What Does the Program Do?

If you play around with DOS and disk utilities as I do, there occasionally exists a need to copy one or more sectors from one disk to another, or possibly one or more tracks. To copy a series of sectors is a laborious task. First, you must have a disk edit program like Diskfixer or ZAP. you must then read one sector into memory, alter the commands to select the other drive, and then write that sector to the other disk. Each sector copied must use this same sequence. If you have several sectors to copy, this can really be a pain. To copy a track or series of tracks, usually you need to have one of the bit copy programs like Locksmith or Nibbles Away. Before you jump to any conclusions, I must tell you that this program, "Track and Sector Copier", is not a bit copy program. It cannot be used to copy protected disks like the previously mentioned bit copiers do.

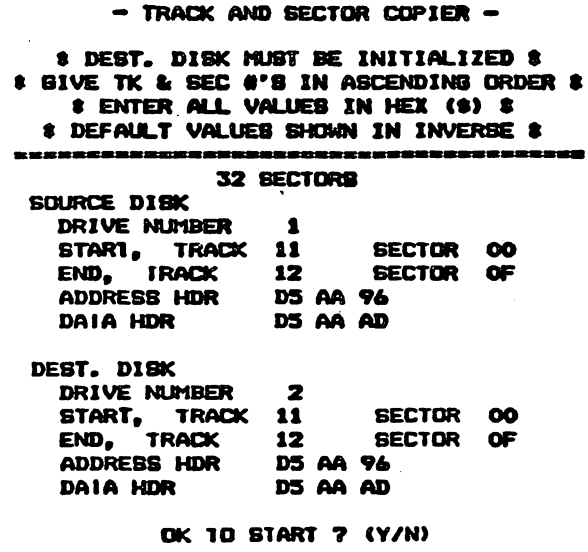
But TSC has some capabilities that the commercial programs don't have. As an illustration, have you ever wanted to copy a sector (or track) from one disk and put it in another spot on another disk? TSC can do that. For example, you could use it to copy the directory track (track $11) on one disk to track $10 on another. TSC could also be used to copy a modified DOS from one disk to another. You could do something really exotic (and strange) like copying 30 sectors starting at Track 5, sector A on one disk over to start at Track 9, sector E on another disk.

Want to copy - protect one of your disks? TSC can do that, because it gives you the option of specifying non-standard address or data headers on the copy disk. Of course, the DOS on your copy disk would have to be modified to be able to recognize the non-standard headers. That's a fairly complex subject and I won't go into a discussion of how its done. But if you already know how to modify DOS you now have a utility program that will aid you.

How Do You Use It?

Figure I is a screen dump of the menu from the TSC program. In this example, all data has been entered and the program is now ready to begin copying.

Figure I



Beginning at the top of the display, you will notice a few instructions. As shown, the destination disk must already be initialized either with standard or non-standard address and data headers. All values are entered in hex numbers in ascending order. The program has default values which are shown in inverse as you pass through each data entry. For example, these are the default values for the source disk.

Drive Number - 1			
Start Track 00		Start Sector	00
End Track 22		End Sector	0F
Address Header	D5	AA	96
Data Header	D5	AA	AD

As you come to each entry, you can accept the default value by merely pressing Return or you can input a new value.

Some of the default values for the destination disk depend on what is entered for the source disk. On the destination disk, the default values for the starting track and starting sector are the same as you entered for the source disk. However, the default values for the ending track and sector are calculated by the program and cannot be changed. It's fairly easy to see why. If the starting and ending points on the source disk are given, and then the starting points on the destination disk are inputted, then there can be only one pair of ending points for the destination disk.

The address and data headers shown in Figure I are the standard DOS headers and will be the default values in all cases, except when recycling back through the menu after a pass of copying has been completed. If you are not very experienced with DOS, never change the header defaults or you won't be able to use your copy disk.

The default drive number for the destination disk is Drive 2. However, the program is designed to operate on a one-disk system. If you specify Drive 1 for both the source and the destination, you will be prompted when to swap disks.

One other item stands out on Figure I. You will notice the line that reads "32 SECTORS". On the screen this will appear in inverse. This is not an input item, but it does appear on the screen when enough data has been entered for the program to calculate how many sectors will be copied. In this example, copying all of Tracks $11 and $12 gives a total of 32 sectors. This appears on the screen immediately after the source disk input item "End Sector" has been inputted.

Responding "Y" to the "OK TO START?" inquiry will activate the copying process. During copying, the program will give a running display of the identity and the number of sectors copied. After copying is completed, you will have an option of recycling back to to the input menu for more copying. On this pass, all defaults (including headers) will be the same as the data entered on the previous copying pass, except for the calculated end points.

How Does It Work?

First, let me say that anyone who has any interest in learning more about DOS can understand how this program works. The program is fairly long (34 sectors), but most of this length is in the formatting code and data entry code. The actual copy portion of the program is fairly short and very simple.

The copying section of the program directly uses a routine in DOS called RWTS. Before any of you novices panic, let's examine exactly what RWTS means. It literally means Read or Write a Track and Sector. If you say it slow, you can see that the intent of RWTS is very simple. It simply is a mechanism for reading a sector or group of sectors on one disk. It obviously can also be used to write that sector(s) to another disk.

One of my biggest complaints about the computer community is that they have an outstanding ability to make something that is actually very simple sound very difficult. I don't really think it's done on purpose. But these technical guys talk to other technical guys in technical terms and then write in these same terms. As the general public becomes more used to using computers, the smarter hardware and software companies will learn how to give complete information without making it either too technical or too juvenile. Well, that's enough editorializing.

Three acronyms are used in this report. 1.) RWTS - Read or Write a Track and Sector 2.) IOB - Input Output Block and 3.) DCT - Device Characteristics Table. Again, these are some very complex ways of saying something very simple. RWTS has been discussed but will be explored in more detail. IOB is simply a

small table of values that the RWTS needs in order to know which sector to read or write. DCT is an even smaller table that contains identifying characteristics of the disk system we're working with. Since we will be working with either Disk II's or other compatible disk drives, all values in the DCT are fixed.

If you really want to learn how RWTS works, two sources are excellent. The Apple DOS manual, which is otherwise sometimes confusing, is very clear on this subject (p. 94-98). It gives an excellent description on how to manipulate RWTS. Another good source is the "must" book for DOS freaks, "Beneath Apple DOS" by Don Worth and Pieter Lechner (p. 6-4 - 6-7). It's unusual, but in this particular case, the DOS Manual is actually clearer than "Beneath Apple DOS".

Referring back to the program listing itself, you can see that a large portion (Lines 210-1030) is used solely to input the data, check for validity, and calculate the number of tracks and sectors to be copied. Lines 1040-1500 contain the copy logic. This section calls on the RWTS to do one of three things - 1.) to Seek a track 2.) to Read a sector, or to Write a sector. Other parts of the logic in this section are continuously modifying the IOB so the program can tell which sector to read or write, which disk drive to use, which volume to expect and where to store the information taken from the source disk before copying over to the destination disk.

Figure II below is a listing of the small assembly language program that calls the RWTS subroutine in DOS. This program was arbitrarily loaded into memory beginning at $4300. It is "Poked" into memory by the routine at lines 6000-6006 in the program listing.

Figure II

```
]CALL-151

*4300L

4300-  A9 43     LDA  #$43      Machine Language Program
4302-  A0 0C     LDY  #$0C
4304-  20 D9 03  JSR  $03D9
4307-  A9 00     LDA  #$00
4309-  85 48     STA  $48
430B-  60        RTS
430C-  01 60     ORA  ($60,X)   IOB
430E-  01 00     ORA  ($00,X)
4310-  00        BRK
4311-  00        BRK
4312-  1D 43 00  ORA  $0043,X
4315-  50 00     BVC  $4317
4317-  00        BRK
4318-  00        BRK
4319-  00        BRK
431A-  00        BRK
431B-  60        RTS
431C-  01 00     ORA  ($00,X)   DCT
431E-  01 D8     ORA  ($D8,X)
4320-  EF        ???
```

Figure II also contains the IOB table and the DCT table. The actual assembly language program ends at $430B. The first line loads the A register with the high byte address of the IOB. The second line loads the Y register with the low byte address of the IOB. This is necessary because the RWTS routine looks for the IOB address in these registers. In this example, the IOB starts at $430C. The third line does a subroutine jump to $03D9, a page 3 location which knows where RWTS is actually located. Therefore, RWTS is called; and depending upon what the IOB table calls for, an execution (a Read, a Write, or a Seek) of RWTS takes place. After RWTS is executed, program control comes back to the fourth and fifth lines which perform a "housekeeping" function of putting a $00 into location $48. Without going into why this is necessary, suffice it to say that occasionally a program may bomb if you don't do this. Line 6 merely returns control back to the Basic program line which called the RWTS set-up program ($4300 is accessed by a CALL 17152 in the program).

The remainder of the listing in Figure II is not an assembly language program, but only contains the data values in the IOB and DCT tables. Refer to one of the prior references for an explanation of the elements in the tables.

I might add that DOS already does contain its own IOB and DCT tables, and therefore it was not necessary to construct new ones. I could have merely referenced to those tables inside DOS. However, I felt it was educational to construct my own tables.

In summary then, the Basic program logic takes care of what action is needed, and then "Pokes" into the proper memory locations of the IOB the necessary values so that RWTS knows whether to seek, read, or write or to do this on Drive 1 or Drive 2.

One other item to note is that part of the data in the IOB is the buffer address, stating where to store the information pulled from one disk before it is copied to the other disk. To save copying time, the Basic program first reads a range of sectors from the original disk and starts storing the data beginning at $5000 into memory. The buffer address is automatically incremented by the program logic to properly save the range of sectors. This program can copy an entire disk in 4 minutes, not fast by comparison to COPYA or other programs. But TSC was meant to be a special utility program and was not designed for speed.

I would be interested in any feedback you might want to give me on this program.

```
11  REM **********************
12  REM *      TRACK         *
13  REM *       AND          *
14  REM *      SECTOR        *
15  REM *      COPIER        *
16  REM *        BY          *
17  REM *      CLARK         *
18  REM *     JOHNSON        *
19  REM **********************
20  REM
     FOR HAAUG MEMBERS ONLY




30  REM
      READ IN MACHINE
     LANGUAGE PROGRAMS
   AND DEC CONVERSION TABLE

40  DIM HX$(35)
50  GOSUB 4002: GOSUB 5002: GOSUB
6000
70  GOTO 210: REM LINE 210 BEGINS
       MAIN BODY OF PROGRAM


80  IF  LEN (X$) = 1 THEN X$ = "0
" + X$: REM    AN INPUT
            SUBROUTINE
90  RETURN
100  REM
     HEX TO DEC CONVERSION

110 D = 0:Y$ =  RIGHT$ (H$,1): GOSUB
120:D = D +  VAL (Y$):Y$ =  LEFT$
(H$,1): GOSUB 120:D = D + (1
6 *  VAL (Y$)): RETURN
120  IF Y$ = "A" THEN Y$ = "10"
130  IF Y$ = "B" THEN Y$ = "11"
140  IF Y$ = "C" THEN Y$ = "12"
150  IF Y$ = "D" THEN Y$ = "13"
160  IF Y$ = "E" THEN Y$ = "14"
170  IF Y$ = "F" THEN Y$ = "15"
180  RETURN
190  REM
    ** PROGRAM MAIN BODY **


200  REM
      SET-UP INITIAL VALUES


210 SD$ = " 1":ST$(1) = "00":SS$(
1) = "00":ET$(1) = "22":ES$(
1) = "0F":AH$(1) = "D5 AA 96
":DH$(1) = "D5 AA AD"
220 DD$ = " 2":AH$(2) = "D5 AA 96
":DH$(2) = "D5 AA AD"
230  REM
     INSTRUCTION HEADINGS

240  HOME : VTAB 2: HTAB 8: INVERSE
: PRINT "- TRACK AND SECTOR
COPIER -": NORMAL
250  VTAB 3: HTAB 10: PRINT "++ B
Y CLARK JOHNSON ++"
260  VTAB 4: HTAB 4: PRINT "* DES
T. DISK MUST BE INITIALIZED
*"
270  PRINT "* GIVE TK & SEC #'S I
N ASCENDING ORDER *";
280  HTAB 5: PRINT "* ENTER ALL V
ALUES IN HEX ($) *"
290  HTAB 3: PRINT "* DEFAULT VAL
UES SHOWN IN INVERSE *"
300  PRINT "====================
==================";
310  POKE 34,8: HOME
320  REM
       BEGIN INPUTTING DATA


330  VTAB 9: PRINT : HTAB 2: PRINT
"SOURCE DISK"
340  HTAB 19: INVERSE : PRINT SD$
;: NORMAL
350  VTAB 11: HTAB 4: PRINT "DRIV
E NUMBER   ";: CALL 768,X$: IF
X$ <  > "" THEN SD$ = X$
360  VTAB 3: CALL  - 868
370  VTAB 11: HTAB 19: PRINT SD$
380 SD =  VAL (SD$)
390  HTAB 19: INVERSE : PRINT ST$
(1): NORMAL :
400  HTAB 4: VTAB 12: PRINT "STAR
T,  TRACK  ";: CALL 768,X$: GOSUB
80: IF X$ <  > "" THEN ST$(1
) = X$
410  VTAB 12: HTAB 19: PRINT ST$(
1)
420 H$ = ST$(1): GOSUB 110:ST(1) =
D
430  VTAB 12: HTAB 26: PRINT "SEC
TOR  ";: INVERSE : HTAB 34: PRINT
SS$(1): NORMAL : VTAB 12: HTAB
34: CALL 768,X$: GOSUB 80: IF
X$ <  > "" THEN SS$(1) = X$
440  VTAB 12: HTAB 34: PRINT SS$(
1)
450 H$ = SS$(1): GOSUB 110:SS(1) =
D
460  HTAB 19: INVERSE : PRINT ET$
(1);: NORMAL
470  HTAB 4: PRINT "END,  TRACK
  ";: CALL 768,X$: GOSUB 80:
 IF X$ <  > "" THEN ET$(1) =
X$
480  VTAB 13: HTAB 19: PRINT ET$(
1)
490 H$ = ET$(1): GOSUB 110:ET(1) =
D
500  VTAB 13: HTAB 26: PRINT "SEC
TOR ";: INVERSE : HTAB 34: PRINT
ES$(1);: NORMAL : HTAB 34: CALL
768,X$: GOSUB 80: IF X$ <  >
"" THEN ES$(1) = X$
510  VTAB 13: HTAB 34: PRINT ES$(
1)
520 H$ = ES$(1): GOSUB 110:ES(1) =
D
530 NS = (16 - SS(1)) + (1 + ES(1
)) + ((ET(1) - ST(1) - 1) *
16)
540  VTAB 9: HTAB 15: INVERSE : PRINT
NS;" SECTORS";: NORMAL
550  IF (NS < 1 OR ES(1) > 15 OR
ET(1) > 34) THEN  PRINT : INVERSE
: PRINT  CHR$ (7);: HTAB 9: VTAB
15: PRINT "INVALID ADDRESS R
ANGE !": NORMAL : PRINT : PRINT
 SPC( 7)"PRESS A KEY TO STAR
T OVER": VTAB 15: HTAB 31: GET
A$: PRINT : GOTO 310
560  VTAB 14: HTAB 19: INVERSE : PRINT
AH$(1);: NORMAL
570  HTAB 4: PRINT "ADDRESS HDR
  ";: CALL 768,X$: IF X$ <  >
"" THEN AH$(1) = X$
580  VTAB 14: HTAB 19: PRINT AH$(
1)
590 H$ =  LEFT$ (AH$(1),2): GOSUB
110:AH(1,1) = D
600 H$ =  MID$ (AH$(1),4,2): GOSUB
110:AH(2,1) = D
610 H$ =  MID$ (AH$(1),7,2): GOSUB
110:AH(3,1) = D
620  HTAB 19: INVERSE : PRINT DH$
(1);: NORMAL
630  HTAB 4: PRINT "DATA HDR
  ";: CALL 768,X$: IF X$ <  >
"" THEN DH$(1) = X$
640  VTAB 15: HTAB 19: PRINT DH$(
1)
650 H$ =  LEFT$ (DH$(1),2): GOSUB
110:DH(1,1) = D
660 H$ =  MID$ (DH$(1),4,2): GOSUB
110:DH(2,1) = D
670 H$ =  MID$ (DH$(1),7,2): GOSUB
110:DH(3,1) = D
680 ST$(2) = ST$(1):SS$(2) = SS$(
1)
690  PRINT : HTAB 2: PRINT "DEST.
 DISK"
700  HTAB 19: INVERSE : PRINT DD$
;: NORMAL
710  VTAB 18: HTAB 4: PRINT "DRIV
E NUMBER    ";: CALL 768,X$:
 IF X$ <  > "" THEN DD$ = "
" + X$
720  VTAB 18: HTAB 19: PRINT DD$
730 DD =  VAL (DD$)
```

```
740  HTAB 19: INVERSE : PRINT ST$
(2): NORMAL
750  HTAB 4: VTAB 19: PRINT "STAR
T,  TRACK  ";: CALL 768,X$: GOSUB
80: IF X$ <  > "" THEN ST$(2
) = X$
760  VTAB 19: HTAB 19: PRINT ST$(
2):H$ = ST$(2): GOSUB 110:ST
(2) = D
770  VTAB 19: HTAB 26: PRINT "SEC
TOR  ";: INVERSE : HTAB 34: PRINT
SS$(2): NORMAL : VTAB 19: HTAB
34: CALL 768,X$: GOSUB 80: IF
X$ <  > "" THEN SS$(2) = X$
780  VTAB 19: HTAB 34: PRINT SS$(
2):H$ = SS$(2): GOSUB 110:SS
(2) = D
790 NT =  INT (NS / 16):ET(2) = S
T(2) + NT:EXSECS =  - (NT *
16) + NS:ES(2) = SS(2) + EXS
ECS - 1
800  IF ES(2) > 15 THEN ET(2) = E
T(2) + 1:ES(2) = ES(2) - 16
810  IF ES(2) < 0 THEN ET(2) = ET
(2) - 1:ES(2) = ES(2) + 16
820 ET$(2) = HX$(ET(2))
830 ES$(2) = HX$(ES(2))
840  VTAB 20: HTAB 4: PRINT "END,
  TRACK    "
850  VTAB 20: HTAB 19: PRINT ET$(
2):H$ = ET$(2): GOSUB 110:ET
(2) = D
860  VTAB 20: HTAB 26: PRINT "SEC
TOR ";: HTAB 34: PRINT ES$(2
)
870 H$ = ES$(2): GOSUB 110:ES(2) =
D
880  HTAB 19: INVERSE : PRINT AH$
(2);: NORMAL
890  HTAB 4: PRINT "ADDRESS HDR
  ";: CALL 768,X$: IF X$ <  >
"" THEN AH$(2) = X$
900  VTAB 21: HTAB 19: PRINT AH$(
2)
910 H$ =  LEFT$ (AH$(2),2): GOSUB
110:AH(1,2) = D
920 H$ =  MID$ (AH$(2),4,2): GOSUB
110:AH(2,2) = D
930 H$ =  MID$ (AH$(2),7,2): GOSUB
110:AH(3,2) = D
940  HTAB 19: INVERSE : PRINT DH$
(2);: NORMAL
950  HTAB 4: PRINT "DATA HDR
  ";: CALL 768,X$: IF X$ <  >
"" THEN DH$(2) = X$
960  VTAB 22: HTAB 19: PRINT DH$(
2)
970 H$ =  LEFT$ (DH$(2),2): GOSUB
110:DH(1,2) = D
980 H$ =  MID$ (DH$(2),4,2): GOSUB
110:DH(2,2) = D
990 H$ =  MID$ (DH$(2),7,2): GOSUB
110:DH(3,2) = D
1000  REM
      THROUGH ENTERING DATA


1002  ONERR  GOTO 1520
1010  VTAB 24: INVERSE : HTAB 11:
 PRINT "OK TO START ? (Y/N)"
;: NORMAL : PRINT "  ";: GET
AN$
1020  IF AN$ = "N" THEN  GOTO 310

1030  IF AN$ <  > "Y" THEN  PRINT
 CHR$ (7);: GOTO 1010
1040  REM


       THE COPY SECTION


1050  REM


     RW = LOCATION OF ML
   PROGRAM THAT CALLS RWTS


1060  REM


  DR, TR, SEC, BUF, CMD
  ARE LOCATIONS FOR POKES
  THAT ENTER THE DRIVE#,
  THE TRACK#, THE SECTOR#,
  THE BUFFER LOCATION,
  AND THE COMMAND TYPE.

1070 RW = 17152:DR = 17166:TR = 1
7168:SEC = 17169:CMD = 17176
:BUF = 17173
1080  POKE 34,9: HOME :SCNUM = 0:
COUNT = 0
1090  PRINT : HTAB 4: PRINT "THES
E VALUES ARE IN DECIMAL NUMB
ERS"
1100  REM


   GET COUNT ON SECTORS TO
        BE COPIED.


1110  FOR T = ST(1) TO ET(1)
1120  IF T = ST(1) THEN S1 = SS(1
)
1130  IF T <  > ST(1) THEN S1 = 0

1140  IF T = ET(1) THEN S2 = ES(1
)
1150  IF T <  > ET(1) THEN S2 = 1
5
1160  REM


 POKE IN ADDRESS AND DATA
 HEADERS FOR SOURCE DRIVE


1170  POKE 47445,AH(1,1): POKE 47
455,AH(2,1): POKE 47466,AH(3
,1): POKE 48250,AH(1,1): POKE
48255,AH(2,1): POKE 48260,AH
(3,1): POKE 47335,DH(1,1): POKE
47345,DH(2,1): POKE 47356,DH
(3,1)
1180  POKE BUF,80: REM  STARTING
          BUFFER LOCATION


1190  POKE DR,SD: POKE TR,T
1200  HTAB 3: VTAB 13: INVERSE : PRINT
"SOURCE DISK": NORMAL
1210  VTAB 23: HTAB 16: INVERSE :
 CALL  - 868: PRINT "  READI
NG  ": NORMAL
1220  FOR S = S1 TO S2
1230 SCNUM = SCNUM + 1
1240  POKE SEC,S
1250  VTAB 14: HTAB 8: PRINT "TRA
CK "T;"   SECTOR   " CHR$ (8
) CHR$ (8)S;: HTAB 30: PRINT
"#SEC'S "SCNUM
1260  REM

     CMD 0 = SEEK TRACK
     CMD 1 = READ TRACK
     CMD 2 = WRITE TRACK


1270  POKE CMD,0: CALL RW
1280  POKE CMD,1: CALL RW
1290  POKE BUF,( PEEK (BUF) + 1):
 REM    INCREMENT THE BUFFER
  ADDRESS FOR EACH SECTOR
  COPIED.

1300  NEXT
1310  IF SD = DD THEN  PRINT  CHR$
(7);: VTAB 23: HTAB 2: INVERSE
: PRINT "INSERT DESTINATION
DISK -- PRESS <RET>";: NORMAL
: GET X$: IF X$ <  >  CHR$ (
13) THEN  PRINT  CHR$ (7);: GOTO
1310
1320  IF SD = DD THEN  PRINT : VTAB
23: CALL  - 868
1330  REM


     POKES 47445-47466 ARE
ADDRESS HEADER 'READ' POKES.


1331  REM


     POKES 48250-48260 ARE
ADDRESS HEADER 'WRITE' POKES
```

```
1332  REM

      POKES 47187-47197 ARE
 DATA HEADER 'READ' POKES


1340  POKE 47445,AH(1,2): POKE 47
455,AH(2,2): POKE 47466,AH(3
,2): POKE 48250,AH(1,2): POKE
48255,AH(2,2): POKE 48260,AH
(3,2): POKE 47187,DH(1,2): POKE
47192,DH(2,2): POKE 47197,DH
(3,2): POKE BUF,80: POKE DR,
DD
1350  HTAB 3: VTAB 17: INVERSE : PRINT
"DEST. DISK ": NORMAL
1360  VTAB 23: HTAB 16: INVERSE :
 CALL  - 868: PRINT "  WRITI
NG  ": NORMAL
1370 DS = SS(2):DT = ST(2)
1380  FOR S = S1 TO S2
1390 COUNT = COUNT + 1
1400  POKE SEC,DS: POKE TR,DT
1410  VTAB 18: HTAB 8: PRINT "TRA
CK "DT;"   SECTOR   " CHR$ (
8) CHR$ (8)DS;: HTAB 30: PRINT
"#SEC'S "COUNT
1420  POKE CMD,0: CALL RW
1430  POKE CMD,2: CALL RW
1440  POKE BUF,( PEEK (BUF) + 1)
1450 DS = DS + 1: IF DS > 15 THEN
DS = 0:DT = DT + 1
1460  NEXT
1470  IF (SD = DD AND T <  > ET(1
)) THEN  PRINT  CHR$ (7);: VTAB
23: HTAB 5: INVERSE : PRINT
"INSERT SOURCE DISK -- PRESS
 <RET>";: NORMAL : GET X$: IF
X$ <  > CHR$ (13) THEN  PRINT
 CHR$ (7);: GOTO 1470
1480  IF SD = DD THEN  PRINT : VTAB
23: CALL  - 868
1490 SS(2) = DS:ST(2) = DT
1500  NEXT

1510  REM

      RESTORE HEADER VALUES
         BACK TO NORMAL

1520  POKE 47445,213: POKE 47455,
170: POKE 47466,150: POKE 48
250,213: POKE 48255,170: POKE
48260,150: POKE 47187,213: POKE
47192,170: POKE 47197,173
1530  VTAB 3: HTAB 10: PRINT "++
BY CLARK JOHNSON ++"
1540  VTAB 21: HTAB 13: INVERSE :
 PRINT "COPY COMPLETED": NORMAL

1545  POKE 216,0
1550  VTAB 23: HTAB 12: PRINT "PR
ESS 'Q' TO QUIT": HTAB 7: PRINT
"ANY OTHER KEY TO START OVER
";: NORMAL
1560 X =  PEEK ( - 16384): IF X >
127 THEN  POKE  - 16368,0: GOTO
1580
1570  GOTO 1560
1580  IF X = 209 THEN  TEXT : HOME
: END
1590  GOTO 310
4000  REM

      STRING INPUT ROUTINE -
     ACCEPTS COMMAS, COLONS,
        QUOTES, ETC

4002  FOR XX = 768 TO 838
4004  READ BYTE: POKE XX,BYTE
4006  NEXT XX

4008  DATA     32,190,222,32,227,
223,36,17,208,5,162,163,76,1
8,212,133,133,132,134,165,18
4,164,185,133,135,132,136,32
,44,213,173,0,2,201,3,208,3,
76,99,216,169,0,133,13,133,1
4,169,0,160,2,32,237,227,32,
61,231,32,123,218
4010  DATA    165,135,164,136,133
,184,132,185,32,183,0,96
4012  RETURN
5000  REM
    INPUT THE TABLE FOR
 CONVERSION OF HEX TO DECIMAL


5002  FOR I = 0 TO 34: READ HX$(I
): IF I < 16 THEN HX$(I) = "
0" + HX$(I)
5004  NEXT
5006  RETURN
5008  DATA  0,1,2,3,4,5,6,7,8,9,A
,B,C,D,E,F,10,11,12,13,14,15
,16,17,18,19,1A,1B,1C,1D,1E,
1F,20,21,22
6000  REM
   SET UP THE ROUTINE THAT
CALLS THE RWTS.  ALSO, SET
 UP THE IOB AND THE DCT.


6002  FOR I = 17152 TO 17184: READ
POK: POKE I,POK: NEXT
6004  DATA    169,67,160,12,32,21
7,3,169,0,133,72,96,1,96,1,0
,0,0,29,67,0,80,0,0,0,0,0,96
,1,0,1,216,239
6006  RETURN
```

APPLE SLICES

Steve Knouse

& Catalog

Here's a quick way to get a catalog of your disk:

```
POKE 1013,76        From the monitor
POKE 1014,110  or   3FE:4C 6E A5
POKE 1015,165
```

This sets up the & vector (at $3FE) to call the DOS catalog command (with a JMP $A56E). To catalog a disk, type & RETURN.

Using Videx's Enhancer][with AppleWriter][& Apple PIE

Chapter 7 of the manual discusses, in general terms, ways of making the Enhancer][work with word processors. More specifically for AppleWriter][(AW][) and Apple PIE (AP) you must first tell them you can display lower case characters (answer yes to the lower case display question after booting AW][; for AP, select option 6 of SYSGEN PIE). To enter both upper and lower case letters you have two choices. The first, which Videx recommends, is to put the word processor into its shift lock mode (Control-K in Aw][; two right arrows in AP) and the Enhancer][into its lower case (or typewriter) mode (shift-reset). The second method is to keep the Enhancer][in its shift lock mode (reset) and use the shift wire mod. You have to tell the word processor about this too (CTRL-Q 7 in AW][; for AP select option 8, Game I/O, in SYSGEN PIE).

I prefer the second choice in Apple PIE as I am used to the way the keyboard acts and to the location of the special characters (like ¦, {, and ~). Further I don't like the Enhancer's caps lock mode as all characters including the numbers are shifted. In AppleWriter][I would probably use the first method as it is easier to get the special characters. If you use this approach in AW][select the shift wire option as cursor contol movement can be reached by pressing ESC once rather twice as in the ESC-shift mode.

Printer Control in AppleWriter][& Apple PIE

Most newer printers have features, such as emphasized or compressed print, which are activated by sending a control character or by sending an Escape character followed by other normal (i.e. not control) characters. For example to put the Epson MX-80 with Graftrax 80 into emphasized print you send two characters, an Escape character and an upper case E. To cancel it, send an Escape and an F. Condensed print is done by sending a contol-T or an Escape and a P and cancelled with a contorl-R or

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an Escape Q.

In order to control your printer from your word processor you must put the necessary characters in body of the text. To enter control characters (including the Escape character) in AppleWriter IE type CTRL-V, the control or Escape character, another CTRL-V, to exit the control character entry mode, and any other necessary characters. For example to set the Epson into condensed print type CTRL-V CTRL-T CTRL-V; CTRL-V ESC CTRL-V P will do the same thing (see preceeding paragraph). Note that you have to enter an Escape character you must press the ESC key twice if you are not using the shift wire mod.

In Apple PIE you must press CTRL-SHIFT-M before each control character or Escape character. For example emphasized print is set by CTRL-SHIFT-M ESC E.

Easy, Cheap Shift Wire Mod

The following modification is for Apples which have a separate keyboard and keyboard encoder board. It will not void your warranty, does not require disassembly of your Apple, does not require any soldering in the Apple and does not plug into the game I/O connector.

You will need the following materials and tools:

- 1 12 inch piece of 24 or 26 gauge, insulated, solid wire - such as wire wrap wire
- 1 micro test clip - Radio Shack stock number 270-370, $1.49 for 2
- A pair of wire strippers
- A small screw driver or chip a chip puller
- A soldering iron and solder

The installation is as follows:

- Disassemble the micro test clip.
- Strip about 3/4 inch of the insulation off one end of the wire.
- Stick the wire through the hole in the end of the metal portion of the test clip and double it back so there is wire on both sides of the clip.
- Solder the wire to the test clip. (You're done with the soldering iron now.)
- Slide the cap back on the other end of the wire and reassemble the test clip.
- Strip about 3/16 inch insulation off the other end of the wire.
- Turn OFF your Apple but do NOT unplug the power cord. THIS IS IMPORTANT!
- Open the lid to the Apple (are you SURE the power is OFF?) and touch the metal case of the power supply to discharge any static electricity.
- Remove all peripheral boards from their slots. This is not really necessary but is always a good idea when mucking around inside the computer.

- o Use a small screw driver or chip puller to CAREFULLY remove the 74LS251 at position H14. This is on the right side of the main computer board, directly in front of the game I/O connector.
- o Insert the stripped end of the wire in pin 1 of the socket (the one on the right side, nearest the keyboard). This pin is electrically the same as pin 4 (PB2 or SW2) of the game I/O connector.
- o CAREFULLY reinsert the chip back into the socket with the small notch facing the keyboard. Be sure all pins go back in the socket.
- o Clip the test clip on to the second from the right pin which extends down from the keyboard to the encoder board.
- o RECHECK your work!
- o Turn the power on and make sure the computer is operational. If not TURN OFF the power IMMEDIATELY and CHECK your work again.
- o Turn the power back OFF!
- o Put your peripheral cards back in their slots (is the power OFF?).
- o Put the lid back on.
- o Test the modification by using your word processor or other program which uses the shift key mod or type in the following program:

```
10  HOME : VTAB 12: PRINT "THE SHIFT KEY IS ";
20  HTAB 19: CALL  - 868
30 A =  PEEK ( - 16285)
40  IF A > 127 THEN  PRINT "UP";:  GOTO 60
50  PRINT "PRESSED";
60  FOR I = 1 TO 200: NEXT
70  GOTO 20
```

I will have a limited number of wires with the test clip attached at the next Thursday meeting for $3.00. If you want to make the modification but don't want to attempt it yourself drop me a note at the address below (don't call!) or leave a message on the Club Hotline (885-8612). If there is enough interest we can make the installation a hardware project at the following Saturday meeting. You will need your Apple, an assembled wire (one you made or bought from me at the Thursday meeting) and a small screw driver or a chip puller. I will have neither parts for sale nor tools to loan.

Send in tips, techniques or questions to:

Steve Knouse
14150 Limerick Lane
Tomball, TX 77375

Or call them in to the HAAUG Hotline 885-8612.

ENHANCER II BOARD REVIEW by Tom Murdock

Manufacturer: Videx
Distributors: Various
Price: $149.00 retail, discounted via mail order.

It is hard for me to remember when I have been as enthusiastic about a hardware product as I have about the Enhancer II board. If you scrutinize the ads and other available technical information for various hardware products, you can usually find buried deep within the literature, comments such as "not compatable with graphtrax", or other caveat which negates much of the advantage gained by purchase of that product. Example: Micro-sci disc drives offer a faster access time than their Apple counterparts, but if you mix Apple and Micro-sci drives, then you must default to the slower Apple times, due to controller card constraints. I'm sure that Micro-sci makes a fine product, but this fact alone has kept me from purchasing one of their 80 track drives. Back to the subject at hand - the Enhancer II board from Videx.... it doesn't seem to have any limitations; it works with just about anything.

While the Enhancer II board by itself is good, you will really get maximum benefit from it if you have the "Softswitch" from Videx and an 80 column card too. The Enhancer board expands your standard Apple keyboard to give you two modes: (1) Apple Compatible, and (2) Full upper and lower case. The Enhancer also gives you a typeahead buffer and definable macros. Ah, what's a definable macro, I hear you ask: You can set up your Enhancer so that <CTRL>1 will cause the catalog for drive #1 to be displayed, and <CTRL>2 will give you a catalog for drive #2, etc. Uses are limited only by your imagination. Oh yes, it also knows to repeat any key which you hold down for more than about half a second, and if you hold a key down and press the repeat key, it takes off on fast auto repeat.

The softswitch eliminates the manual unplugging and plugging of the monitor jack. Worth every penny of its $35 price folks, trust me. With the softswitch and an 80 column board, you can go back and forth as fast as you can type PR#3 and <CTRL>Z1 (see footnote). The installation manual for the Enhancer is very clear, and unless you are all thumbs, you can't go wrong. Complete installation will take you about 90 minutes. It would be nice if the photos referred to in the text could be on pages slightly closer to the references, but that is really a nit. Included with the Enhancer board is a lower case chip which replaces the character generator chip which came with your Apple. No sense giving you upper and lower case capability without a lower case chip, right?!

OK, for the balance of this review, we are going to assume that you have an 80 column board. In using the Enhancer board, you first select whether you want to work in 40 or 80 columns. Then you select whether you want Apple compatible or full upper/lower case mode. Then you have a typewriter-like "shift lock" function available. A total of six choices, the combination you select depends on your particular applications. For conventional Apple BASIC programming, select 40 column and Apple compat mode. For word processing, select 80 column and Apple compat, or full

upper/lower mode depending on your word processor. For some exciting programming, select 80 column and full upper/lower case mode. (The difference when editing a BASIC program displayed in 80 column mode is only slightly amazing.) The Enhancer board really soups-up your Apple and gives you a full function keyboard. Don't know why I waited so long to buy it.

INTERACTION WITH THE GLOBAL PROGRAM LINE EDITOR

Your reviewer also owns the Global Program Line Editor available at $38.50 if you are a member of Call Apple. GPLE also contains macros, and supports several 80 column boards. With this program in place (by the way, it automatically loads itself onto the language card, if you have one), transferring between the 40 and 80 column display modes is as fast as <CTRL>V. Because so many of the standard Apple keys have been redefined by GPLE, I have been somewhat cautious in defining macros for the Enhancer board. More will come later on this, after I have more experience.

The Enhancer board works hard to allow you to input all 128 ASCII characters from the keyboard, and then the Apple monitor works just as hard to re-convert them back into upper case. The gremlin is a routine called CAPTST and Appendix A of the Enhancer manual gives you several ways to bypass or otherwise defeat the action of CAPTST. GPLE saves you the trouble by intercepting the keyboard, and giving you lower case in 40 or 80 column mode. The latest issue of Call-Apple came today, and contains an article on how to bypass the CAPTST routine with a program that resides in the language card, so owning a copy of GPLE is not mandatory.

A final word: When I first got my 80 column card, I found that adjusting the brightness and contrast controls on the monitor to achieve a good display was rather difficult; the horizontal portions of the 80 column characters seemed to be much brighter than the rest. I called Videx and talked with them about this, and they told me that their "half-intensity" chip would solve my problem (rather than spending $200 on a new monitor), and even offered to send me one on an exchange basis for the standard Videx chip in my 80 column board. They did, and the new chip is absolutely terriffic! If you have a Videx board and are having this problem, this is the answer to your troubles. The folks at Videx have a great attitude when it comes to customer service and support, and this consumer really appreciates it, especially when most of the local stores are pitifully ignorant of anything more than Applewriter and games.

SUMMARY: Another great hardware product for your Apple from Videx! If there are any shortcomings of this product, I have yet to find them.

.....

Note: With your softswitch, a "PR#3" will get you into 80 column display mode, but "PR#0" will not get you back to 40 column. What is required is a Control-Z 1. If your softswitch has been gathering dust because it didn't seem to be working right, this may be your problem.

Logo Locus

by Bryan Whaley

I believe we've done a poor job of selling you on Logo. What you have seen are screens of shapes and forms that can be admired for their intricacies and cybernetic regularity. You can explore geometries in countless ways with the graphics of Logo. But let's reconsider our goals. Euchlidean geometry is fine for the higher grades; ones where they can spell it. But what about the little tykes. Many of us bought this machine on the pretext of introducing the computer to the Computer Generation. How can Logo help us do this?

What I believe makes Basic inappropriate for teaching to 4 to 7 year olds is the complexity of the words forming the language. Not only do you have to spell well but type well. Logo also uses long words such as FORWARD and PENDOWN. However, Logo does offer abbreviations to these such as FD and PD. I think that this still distracts the child from learning. Let's make it simpler still. Let's take a useful subset of the Logo instructions and make our own language. Since we want to utilize the immediate gratification realized by using graphics, we will only pick the simpler graphics commands:

FORWARD BACK RIGHT LEFT PENUP PENDOWN

and a few procedures:

CIRCLER PDLPOS.

The first 6 primitives, as they are called in Logo, are straight-forward graphics commands that either move the turtle or control whether it will leave a trace as it moves across the screen. The next two are procedures that give your child the ability to draw a righthanded circle and to position the turtle with paddles anywhere on the screen to begin drawing a new figure.

Logo is advertised correctly as being "intrinsic", that is, the position of the turtle is relative only to the figure it draws and not to any outside coordinate system. When you move the turtle 10 units away from the figure it is 10 units away from the figure. But the authors chose also to give us an "extrinsic" frame of reference. So by using the paddles to read from the extrinsic reference in (x,y) form, we can position the turtle on the screen. This is invisible to the child. They use the joystick and push the button when the want the turtle to stay.

Now let's make this useful to our young child. Logo is extensible. New forms of the language can be made from the primitives. Procedures in Logo are called by their procedure names. Therefore, we can write procedures that call primitives or other procedures. What we wish to do is simplify the language to one letter procedure names. When we type F then the turtle will move FORWARD. When we type P then the PDLPOS procedure will be called. F and P are easily remembered so the child can concentrate on their drawing and not on the language. Since we have a simple subset of the Logo language, there will be no ambiguity in typing an F or a P. But the parent can still use all of the primitives of the language, especially when a correction must be made to the child's figure using primitives beyond the present comprehension of the child. At the end of this discussion is a list of the procedures defining our new language that I chose to call "EASY". Within EASY is a "HELP" procedure for my wife when she is asked to aid one of our children. Again, to call the procedure HELP, she types HELP and the help file is printed to the screen. The child's drawing is left intact in the hires page.

I have a MICRO-BUFFER installed in the printer slot. Besides buffering the printer spooler, it offers a graphics dump to my EPSON printer. The child prints SD for SCREENDUMP and the hires page prints on the printer for a permanent record of their accomplishments.

When you have designed your teaching language, then begin introducing your child by showing the PDLPOS procedure, called by P. This entertains for quite a while, but it doesn't draw. This is by design. If it did draw then it would be a passive activity; the child would be able to design without learning any further commands. Now place the turtle some place other than in the middle, possibly rotating it. Have the child learn to associate the first letter of the procedure with a desired action by the turtle, F for FORWARD. Suggest a value for the variable following FORWARD, such as F 15. Now introduce the concept of the variable by calling it a container that the the computer must look into to know what to do. All rotations, either right or left, should be done at right angles, eg. R 90. Then the child will always associate turning the turtle with a command such as R 90 or L 90. When the concept of angles is introduced later, then use the idea that the turtle may face one of 360 directions.

Some of the concepts that you can introduce are right and left, backward and forward, and addition and subtraction for older children,eg F 5+5. The figure that the child makes can be made into a procedure if it is entered while the LEARN procedure is active. LEARN takes the commands entered during the immediate mode and makes a procedure from them that can be called later. LEARN can be found in the Apple LOGO Reference Manual or the Apple LOGO book by

Abelson.

I am currently using the version of Logo distributed by Apple Computer. The review in BYTE in August reconfirmed this was the best Logo for my intentions. However it requires a 64K Apple (as do the Krell and Terepin versions). Another version was recently advertised in INFOWORLD by Cybertronics International, Inc. called the CyberLOGO TURTLE requiring 48k. I do not know what is the size of the workspace (a concern as LOGOs really use the Apple memory) but it advertises some other unique features.

What makes Logo really valuable is the chance it gives parents to sit with their children and participate in an activity that entertains both of them. Don't give up this opportunity by assuming even this simple language is self explanatory. All children relish the praise and encouragement of their parents.

I haven't conceived all these Logo instructional techniques independently. The August issue of Byte has many engaging articles on Logo. At the end of this article is a list of additional articles.

And I don't mean to trivialize a language that is being used to introduce students to Newtonian physics, but sometimes the most innocent ideas are overlooked. Try EASY with your children. I look forward to your comments.

FOR MORE INFORMATION

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Papert, Seymour. Mindstorms: Children, Computers and Powerful Ideas, Basic Books, New York 1980.
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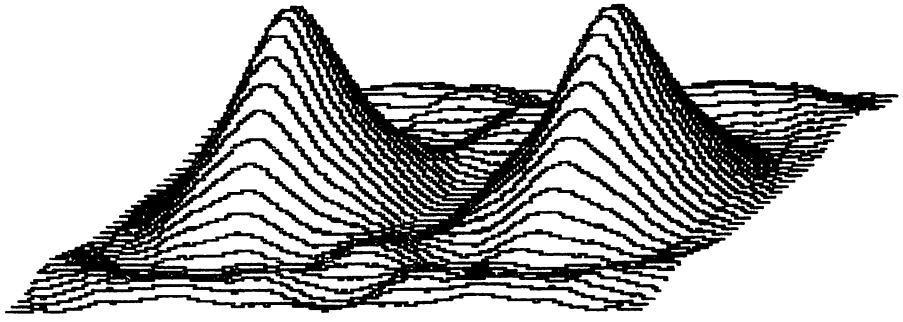
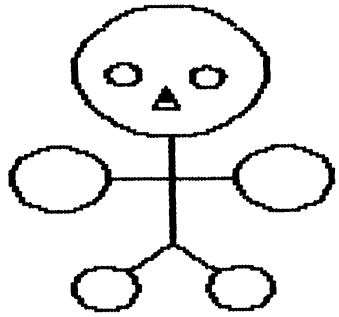


```
TO F :DISTANCE
FORWARD :DISTANCE
END

TO B :REVERSE
BACK :REVERSE
END

TO L :ANGLE
LEFT :ANGLE
END

TO R :ANGLE
RIGHT :ANGLE
END

TO U
PENUP
END

TO D
PENDOWN
END

TO C :SIZE
CIRCLER :SIZE
END

TO CIRCLER :RADIUS
ARCR1 .174532 * :RADIUS 36
END

TO P
PDLPOS
END

TO PDLPOS
PU
MAKE "LIST POS
SETPOS SE (((PADDLE 0) - 128) * 140 / 128) ((128 - PADDLE 1)
 * 90 / 128)
IF (BUTTONP 1) [RT 90] []
IF (BUTTONP 0) [PD STOP] [PDLPOS]
END

TO SD
SCREENDUMP
END

TO SCREENDUMP
.PRINTER 1
(PRINT CHAR 9 [G])
.PRINTER 0
END

TO HELP
TEXTSCREEN
CLEARTEXT
PRINT [THE EASY PROCEDURES HELP EXTREMELY]
```



DONE BY MY 5 YEAR OLD

WITH EASY" AND "LEARN"

```
PRINT [YOUNG CHILDREN TO USE LOGO.]
PRINT []
PRINT [THE EASY PROCEDURES ARE BURIED WITHIN]
PRINT [THE STARTUP PACKAGE. UNBURY EASY TO]
PRINT [SEE THE PROCEDURES DEFINED.]
PRINT []
PRINT [. XX REPRESENTS THE VARIABLE]
PRINT []
PRINT [F XX MOVES THE TURTLE FORWARD XX]
PRINT [. DISTANCE]
PRINT [B XX MOVES THE TURTLE BACK XX DISTANCE]
PRINT [R XX TURNS THE TURTLE RIGHT XX DEGREES]
PRINT [L XX TURNS THE TURTLE LEFT XX DEGRESS]
PRINT [C XX CREATES A CIRCLE XX LARGE]
PRINT [U RAISES THE TURTLE'S PEN]
PRINT [D PUTS DOWN THE TURTLES'S PEN]
PRINT [P MOVES THE TURTLE TO THE CURRENT]
PRINT [. PADDLE POSITION. RED BUTTON ( 0 )]
PRINT [. STOPS P. BLACK BUTTON ( 1 ) TURNS THE]
PRINT [. TURTLE HEADING.]
PRINT [SD DUMPS THE GRAPHICS SCREEN TO THE]
PRINT [. PRINTER ( NOT IN EASY PACKAGE )]
END
```

SATURDAY SESSION

HAAUG ROOM ASSIGNMENTS

TIME	RM204	MAIN	RM208	RM228
NOON	CP/M_____	BASIC____	PASCAL___	EDUC.____
1230	CP/M_____	BASIC____	PASCAL___	EDUC.____
1:00	CP/M_____	BASIC____	PASCAL___	EDUC.____
1:30	NEW MEMB	BASIC____	PASCAL___	EDUC.____
2:00	GEN MEET	__________	__________	__________
2:30	SPECIAL_	SOFTWARE	ADVANCED	BUSINESS
3:00	SPECIAL_	SOFTWARE	ADVANCED	BUSINESS
3:30	GAME SIG	SOFTWARE	ADVANCED	BUSINESS
4:00	GAME SIG	SOFTWARE	ADVANCED	_____
4:30	GAME SIG	SOFTWARE	STAT SIG	__________
5:00	__________	SOFTWARE	STAT SIG	__________
5:30	__________	SOFTWARE	STAT SIG	__________
6:00	__________	SOFTWARE	STAT SIG	__________

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An EASY Word Processor - You've GOT to be Kidding!
A Review of Word Processors by a Non-Computer Person.

by (Mrs.) Re Kramer (Biology Teacher Wife)

When Engineer Husband first brought home our Apple II four years ago, I looked at him with eyebrow lifted and said "What are YOU going to do with a computer!"

Little did I know that our entire life (almost!) would revolve around that little box of plastic and funny black caterpillar things. Being a non-mechanical type, I even resisted when the kids pushed Mommy to learn how to chase space things around on a screen. "Too much TV is bad for kids!" I would protest -" and after all, this IS just an extension of TV!" (Besides that, I never could catch the space things.)

When Husband would talk enthusiastically about educational programs, or peeks and pokes, or wormholes and pigeonholes, I would smile and try to give an appropriate "Un-hmm" occasionally. He even TRIED to get me to use a word processor program. Me - who saved pennies and bought my own IBM Selectric II Correcting typewriter! He ACTUALLY expected me to be ENTHUSIASTIC about learning 7 million control commands to be able to type - something I already knew how to do quite efficiently! Besides his being unreasonable, I was now sure he was crazy. Hostile feelings about the computer began to surface - and the more he pushed, the harder I resisted. That evil machine appeared to only be good for keeping the kids' furniture from getting built and for putting an absolute stop to all family conversation which wasn't centered around the computer.

Being a teacher, I DO admit I appreciated the grade programs he wrote for me - as a matter of fact, I DID feel proud when all the other teachers gathered in awe when I sent home my first progress reports done on the computer. (I don't know if I ever admitted that to him.) The REAL turnaround happened when Finals rolled around.

I get so tired of kids cheating. I watch and I pace with an eagle eye during tests - and still it seems to happen. Someone had managed to "obtain" a copy of the Chemistry Final every time we gave one. NOT this time! I was determined to make the little rascals study for a change - even if it meant making out 10 different Chemistry Finals - and that's what I sat down to do at the IBM typewriter. After about a half a page of superscripting and subscripting ...AAAAGH!....and having seen what I COULD do if I were to overcome my computerphobia - I swallowed my pride and decided to try my hand at word processing. I did it! In LESS than 3 hours, I had 10 different versions of the Chemistry I Final Exam using a Word Processing program . I was hooked! - but GOOD!

This summer I learned a lot about word processors. I work for one of the local computer stores in Houston during the summer, and I've heard so many times the dilemma about Word Processing from the small business person. " Word processing costs too much to go with a big machine, Is there something available on the small machines? - especially one I can do Visicalc on too?" Unfortunately, the answer has been a restricted "MAYBE- - - How smart and dedicated is your secretary?"

Dedicated is an understatement! Most "word processors" for the Apple fit into 2 categories:

1) Programs in this category usually have all the functions needed but require the use of LOTS of control characters which give little hint as to their function. The problem with this is that you sit down and invest the time and brainpower to learn to use the program, but when you come back to type something next week the program must be relearned. These are usually rated very high in articles written by computer experts and range in price from $100 to $350 depending on features. They are horribly formidable to the secretary whose boss has just informed her that she WILL learn the computer for word processing because it will save her time. She usually will maybe make it through the first 3 pages and go back the good old familiar typewriter. I don't blame her! - and I wonder if any research has been done on the attrition rate among secretaries whose bosses have tried to force a computer into the normal office routine. In this category I would place Apple Pie, AppleWriter I, II and III (though Applewriter III is easier because of the Apple /// Keyboard, I dislike the way the cursor jumps around), Executive Secretary, EasyWriter & EasyWriter Professional, Magic Window hcripsit, SuperText II, ScreenWriter II, Superscript, Letter Perfect and Word Handler.

2) Programs in the second category are written to handle secretarial functions. Unfortunately, SOME of the "word processors" on the market are "Category 1" in disguise.. Usually a true word processor handles more functions and is supposedly easier - but all of them are CP/M programs which require an extra $1000 commitment to hardware. These programs are Word Star by MicroPro, PeachText (Magic Wand) by PeachTree, Memorite III for the Vector, and Palantir by Designer Software. There may be others out there somewhere, but these are the ones I know WELL because I've worked with them.. Word Juggler for the Apple /// belongs in there somewhere but I haven't worked with it closely enough to classify it.

THE easiest true Word Processor available for the Apple, or any other CP/M machine, is a new one which was just released in May - so it's not included in any of the "last word" word processor reviews designed to help you with a decision about which one to buy. Released by Designer Software in Houston the program is called **"PALANTIR"** - and I love it!! (P.S. - it's the one I used to produce my chemistry finals. I would not have been able to learn the program and get out my Chemistry finals had I been working with ANY other program - but I didn't know that at the time. It's menu driven and all of the commands make sense. There's no way you can get away from control characters with the limited keyboard on the Apple II plus, but you can have a program in which everything makes sense - or at least most of it- and you can lessen the impact of control characters on a non-computerist by using the new Videx

Function Strip . There is NO comparison of this program to any others in this category.

I frequently work as a consultant to teach office persons how to run programs like Visicalc or word processors and this is where I see the difference. What will take me 6 to 8 hours to teach someone using Word Star or Magic Wand (PeachText) will take 1 to 1-1/2 hours using **Palantir.** The secretary at the store was muttering under her breath one day at her typewriter, and I poked my head in to see what was wrong. She explained, and I offered to help her try it on the computer.

I booted the program, which comes up with a screen which says "Edit - Read - Save - Backup - File - Define - Print - Help". I explained 5 things:

1. How to move the cursor to one of the categories and then hit return to get there (or just press the first letter of the category if you want).

2. How to get back to the "Main Menu" by hitting escape.

3. Don't hit return until you want a new paragraph (This is necessary to tell anyone just beginning to learn word processing of any kind.) .

4. It will look just like it does on a typewriter, if you want to change the margins we'll do that later.

5. If you need to insert something, use control X to change the "Change" at the top of the screen to "Insert". (There are only these 2 modes and you don't have to be in any one specific mode to run around on the screen.)

I don't think I told her anything else - I can't remember because the phone rang and I got tied up in one of those 30 minute conversations. When I got back to her, she had her letter typed - and corrected - and was using the "Help" screen to try to figure out why her letter didn't print when she followed the directions (the printer wasn't on line). I think she's hooked! And I am too - with 5 minutes of instruction including a brief "don't be afraid of the computer", we now have a secretary who can take advantage of the modern convenience of word processing.

It's expensive, especially with the necessary hardware additions, but I decided early in this game of evaluating software that you get what you pay for. A program that costs more, has had more time and energy spent in its development - and is usually well supported and bug-proof. The program is $350 including the mail list (the Mail List is NOT an additional program as with most other word processing programs, just an adaptation within the "print" category. I have not updated to Mail List, but if it follows with the "user friendly but capable" philosophy of the company, I know I'll love it). For checking spelling, I found "The Word" and "Spellguard" to both work nicely.

Palantir even handles the italics and alternative method of superscripting and subscripting of the Epson printer line, and has provisions for the alternative character sets of some printers like the NEC. It will also allow you to include Graphics in the text. Reformatting or moving blocks of text, large or small, is easier than any program I've seen. "What you see is what you get" lets you know exactly where your tabs are, what your columns look like, centered titles and right justified text. Text can be fill justified or semi-fill justified. , The "Find" will either "find" or "find and replace" and accepts wildcard characters. It has a glossary or "Lexicon" capability which is large enough to allow "boiler-plating" of paragraphs. It has every cursor jump move I can think of and printing is as easy as pressing "P" and return after you've escaped to the menu.

The size of the text is not limited to the amount of memory of the machine - a major drawback in some Apple programs. The only limit is the amount of disk space for the text. The self tutorial of the manual is easy to follow. The manual isn't very thick - but then it doesn't NEED to be. The major commands will bring instructions to the screen to step you through a move if needed. [There have been 3 commercial books written to explain the 2 books (manual and tutorial) which go with WordStar - because you need all the help you can get..]

Palantir requires CP/M and will run on any CP/M machine, including the new Apple /// CP/M. On other machines, it has been adapted to make use of the characteristics of that particular machine - if the Vector, or Zenith, or whatever has up and down arrows and special function keys, the program actually USES them - not like Word Star which continues to use the SAME control keys on every machine, and ignores all the special keys for which you bought the machine.

I love **Palantir** - I am not a stockholder - I am not getting paid to say this - and I AM a non-computer person - just like 90% of the new computer users (a figure based on non-scientific research by observation of persons coming into computer stores.) I love being able to be creative rather than worry about mundane things like how my program works, or how to print, or what commands to remember. In word processing programs, this is THE program which gives you the capability of an $11-20,000 word processor on your multi-use micro or mini computer.

COMPUTERS AND MULTI-IMAGE

BY

BRUCE TAPPE CMS

Projecting a camera image has been around for many years and for most of this time a single projector with one projection lens was used. In the late 60's people were getting tired of pushing buttons every time they wanted a new slide, so a few enterprising manufacturers made a gadget that plugged into one of the audio channels of your stereo tape recorder. It advanced a slide projector with a prerecorded cue from the tape. The next idea was the automatic dissolve control. This unit was basically two light dimmers, working opposite from one another (when one lamp was on, the other was off), and two relays that advanced the projectors to the next slide. You now could fade from one slide to the next without the normal black and then flash of light on the screen from a single projector. When used with the advancing gadget, it became the first programmable dissolve. Multi-image was now just being introduced to the public.

Let's move up to the mid 70's. With the large image sizes now available from the slide projectors (up to and exceeding 20 feet wide), computer punch tape programming equipment and stereo sound, a large number of people could be reached, motivated, informed or aroused at one time. This method of communication proved it could be very cost effective. Most of the presentations were 6 slide projectors or less and image sizes were typically 4 to 6 feet wide. Controlling all this equipment was still a complex problem. As most of you know electronics and enterprising people make fantastic toys for adults and this area was no exception. The dedicated multi-image programming computer was introduced. The AVL Showpro 5 and Fox, the Clear Light Star 3 and Micro Diamond Dissolve and the Spindler/Sauppe Director 24 are examples of this technology.

If a computer is designed to perform ten or so specific functions and has a limited number of buttons, this is dedication. Your 24 hour bank teller is an example of a dedicated computer. When a computer can perform these specific functions and still accept other programs, such as word processors, this is a nondedicated computer. Often because of this flexability the higher costs of the hardware can be easily justified (at least to my wife). Dedicated multi-image programming computers have a drawback, they can only perform the functions that were specifically designed into them from the start. Updating is out of the question. A non-dedicated programmer was needed so that only the software had to be up-dating as technology and needs changed.

At the moment there are two non-dedicated computers being used. There are four suppliers that have programs and

hardware for multi-image and they are, Arion Corporation, AVL, Clear Light and Electrosonics Systems. The AVL Eagle II is a Z-80 based computer, running on CP/M, comes with two built-in disk drives, a monitor and is supplied with a word processing package in addition to the ProCall X multi-image software. The Arion, Clear Light and Electrosonics systems all use the Apple computer in one fashion or another. And to complicate matters further, there is a software package for the Apple, which will allow you to write a slide program compatible with all of the above manufactures. It adjusts the digital codes used by each of the manufactures. Confused yet?

Of the Apple based systems, the Clear Light Super Star has carried the control capabilities further than the others. The software permits the Apple to perform four separate tasks (or programs) simultaneously. This is a very handy feature when programming special effects. In addition to the thirty slide projectors it now controls, there is an external device, made by a local Audio/Visual company, that will permit the computer to interface with 30 external support devices (this number can be expanded up to 120). Room lights, video disks, video recorders, TV's, room drapes, projection screens, audio tape recorders and movie projectors are a few of the commonly controlled support and special effect items. To capture the audiences attention, more exotic supports can be used like talking heads or swimming sharks (look at Disney World, Sea Arama and Marine World). These effects don't directly use the Clear Light system but they do use computers, including the Apple.

Back to multi-image. Along with the visual images, sound is a major part of any good multi-image presentation. By using a four channel reel to reel deck (quad did leave us some thing good) you have available two audio channels (since we hear in stereo), one channel for the digital program (generated by the computer), and one channel left over. With the addition of an audio amplifier, two speakers and a few cables we now have a complete multi-image programming package capable of making a very impressive show. But this is just the hardware, creativity on the part of the producer plays just as large of a part, if not larger.

The Apple computer also supports multi-image with a number of 35mm slide image making packages. Color slides with text, graphs and illustrations can be created and transferred to slide film in-house without using an outside service. Granted the quality is the same as the TV picture we see on a monitor but still this is a start. The system made by Toucan Visual Productions Systems, comes with software for graphic generation, a motor driven camera, video transfer hardware, and a control board that plugs into one of the Apple slots. You are required to have an Apple Graphics Tablet, two disk drives and a color video display. Twenty type faces and several sizes are standard. The grapevine has

said that Polaroid is going to market an instant developing slide film for 35mm camera systems. The cost would work out to about $3.00 a slide. At this time, the cost of graphic computer services range from $20.00 to $85.00 per slide, this also includes the computer time.

Another system going by the name of Star Graphics, uses the Apple to create a black and white image on the video display and the transferring to slide is done by an outside production center. You answer questions as to the color, size and position of the artwork and the computer controls the spacing for you. You have a range of 64 colors to choose from and the size of the text is referred to in percentages. You set the design parameters for the slide format you want. It is then stored on disk and can be recalled at any time. This is very helpful if you need to create a number of text slides. Just call up the format and type in the words. When finished with the layout, transmit your designs by phone to a production center for processing. The slides are returned, usually within 48 hours, mounted and ready to project. This system uses a very high quality generation computer. The scan is 2,000 points horizontal and 2,000 points vertical. Even Projecting a 7 foot wide image does not reveal that a computer and not a graphic artist, did the art work. The processing costs range from $8.50 to $15.00 a slide, depending upon the quantity ordered in a year.

Other programs completely bypass the slide projection format and use the video display as the "projection screen". Video images can be created with Apple Business Graphics, Apple Plot or VisiPlot to name a few. Dissolves and cuts are used to fade from one image to another, just like the guys on television. Some programs have expanded presentation capabilities that include horizontal and vertical wipes, full screen ripple fades, corner insertions and half screens in addition to just going forward or reverse in the sequence. When connected to a large screen TV (using the monitor connections) a group of 30 people can easily view these video images. Updating the information just before a meeting is to start is now possible. You can't do that with video tape or film. That is a lot of communicating power from what started out as a hobby and game computer.

Why would any one want to go to all that trouble? The same information is repeated time and time again without the speaker going out on strike, having to be paid for sick leave, vacations or changing jobs. The same material can be repeated, without any facts being left out. Up-dating the slides is just a matter of removing the old ones and dropping in the new. It is very easy to make changes in the material, unlike movie or video tape. Don't get me wrong, there is a place for video and movie. In fact, both media support and are used with slides in many presentations. Case in point, the large slide shows are often copied onto movie or more commonly to video for distribution. A lot more

portable but without the impact. I also see in the very near future a strong working relationship between the computer, 35mm slides, laser disks, VHS video, satellites and computer graphics (more on that later).

Our society is information oriented. The need to possess, control and communicate large amounts of information is becoming more evident every day. Time is very costly, from both our personal standpoint and the company that we work for. If that information can be handled quickly, presented in a fashon that has impact and the retention level is raised, then the art of communication has been used effectively.

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Articles and program listings should be submitted in hardcopy form, and, if possible, on disk in Applewriter][or ///, Apple DOS or SOS text, Professional Easywriter, Wordstar, Palantir, or Pascal compatible files, or via modem (358-6687). If not submitted on disk, articles must be free of typing or spelling errors as they cannot be retyped. Diskettes will be returned to the author provided his name and address are on them. Printed material should be printed using normal size characters, a new ribbon and enhanced print if your printer is so equipped. Margins should be set at 7 and 73 for articles. Listings should be printed in 40 column mode and should be printed in compressed print. Thermal paper should be avoided because it does not reproduce well. Authors of published articles will receive a blank diskette per page as compensation. If the last page of an article is a half page or longer it will qualify for a diskette. The Apple Barrel reserves the sole right to determine which articles are used. Submit articles to:

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---===*===---

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---===*===---

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Call Mike Kramer at 358-6687

---===*===---

FOR SALE: IBM System 23 Datamaster 64K, 2.2 MB, 160 CPS dot matrix printer. Used very little. $8000.

Call Norman Hackler at 444-5279 or 444-6695.

---===*===---

FOR SALE: CPS Multifunction Card by Mountain Comnputer, has parallel I/O, serial I/O, and clock all on one card. Complete with software for DOS 3.3, CP/M, and Pascal as well as documentation and two cables. List price with accessories is $339, sell everything for $180. Also have Epson parallel I/O for Apple, complete with documentation and cable for $75.

Call Mike Flinn at 667-1869.

---===*===---

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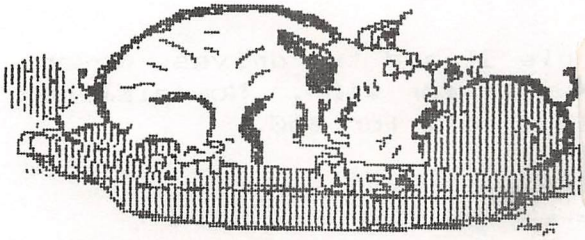

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