

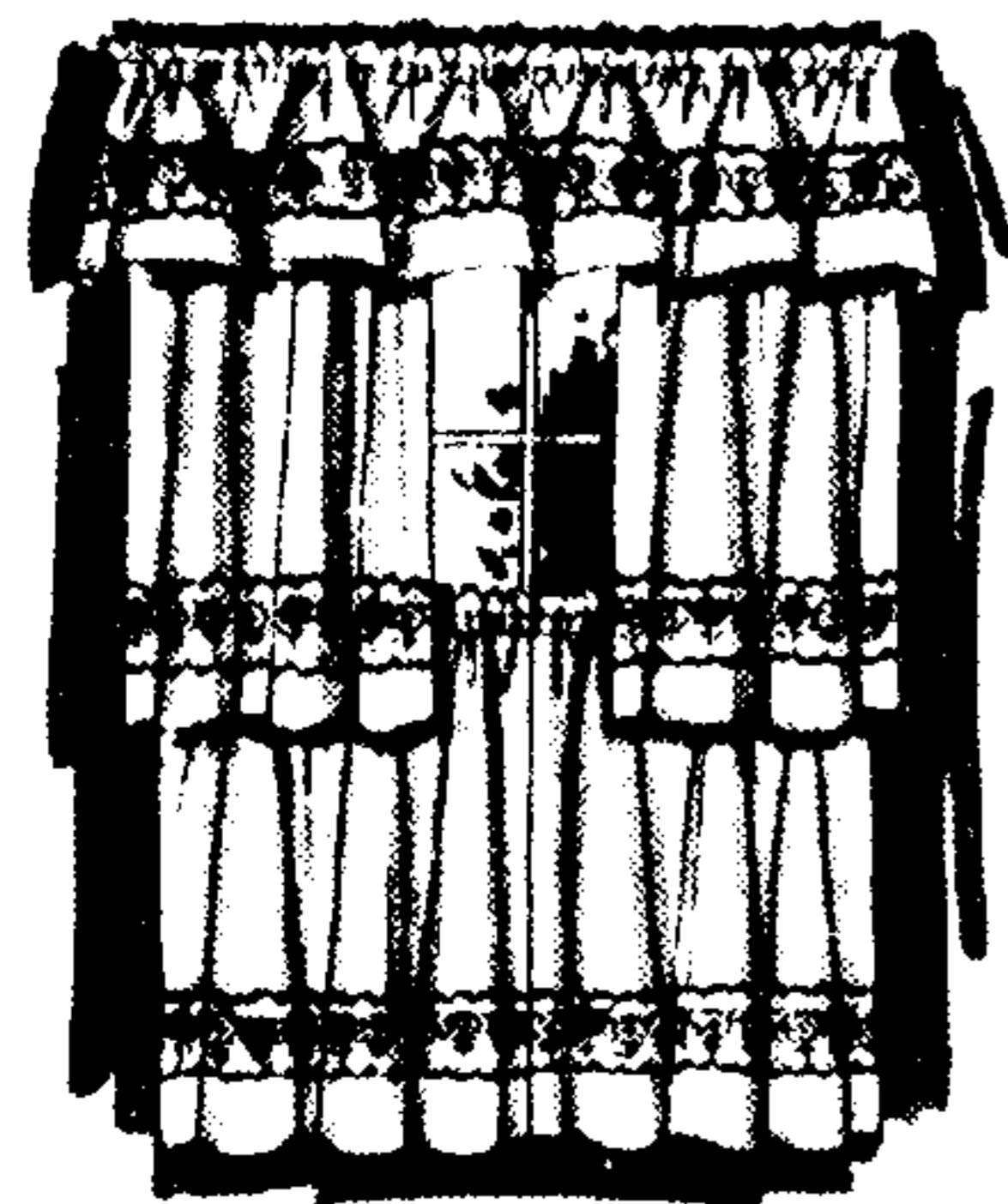
Covering the TI99/4A and the Myarc 9640

MICROpendium

Volume 7 Number 8

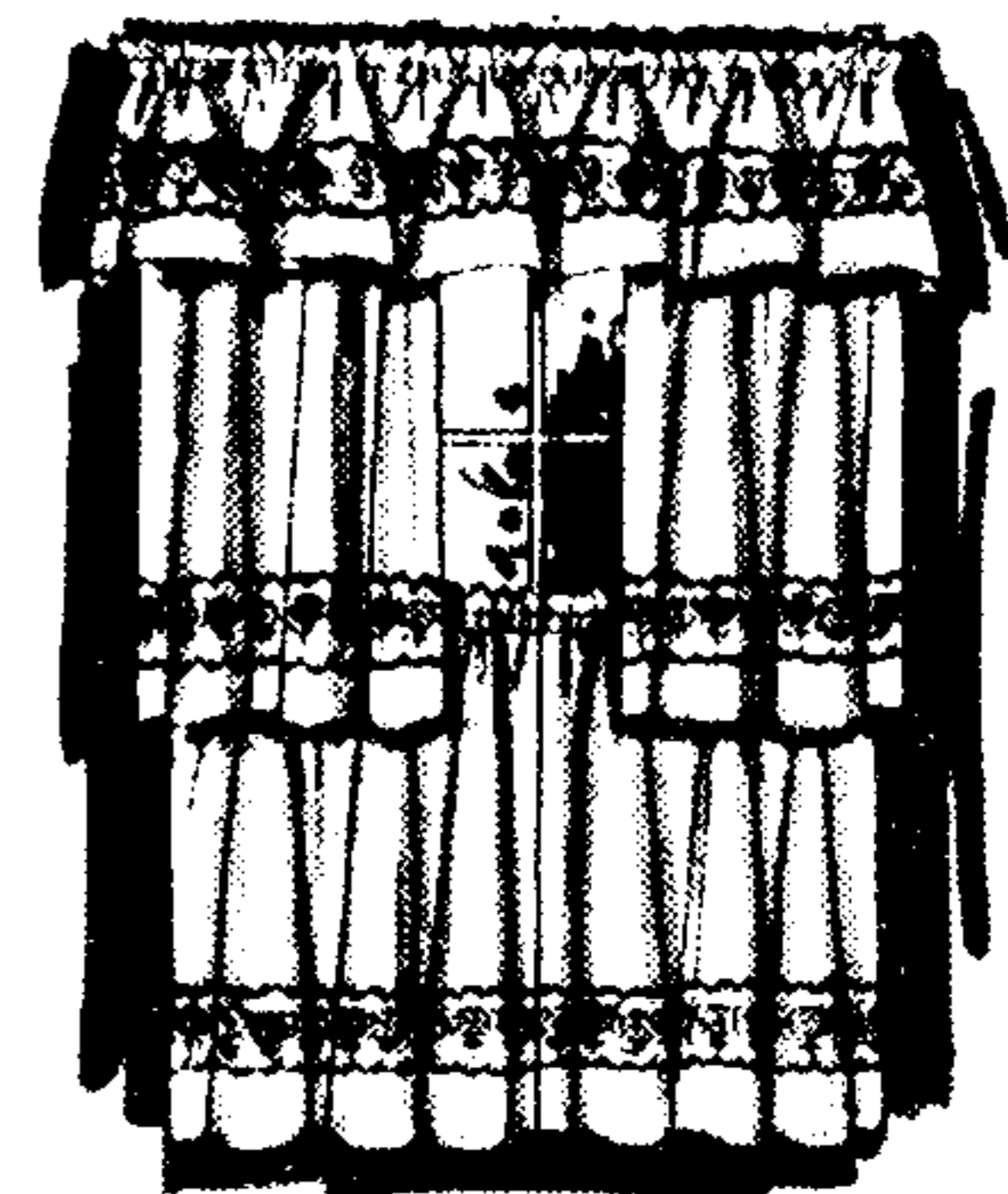
September 1990

\$2.50



Windows 9640

A Review
See Page 31



ALSO:

Books of the Bible in BASIC

c99 Heat Index

Squashed directories in Extended BASIC

Missing Link



**More Bulletin
Boards — Page 33**



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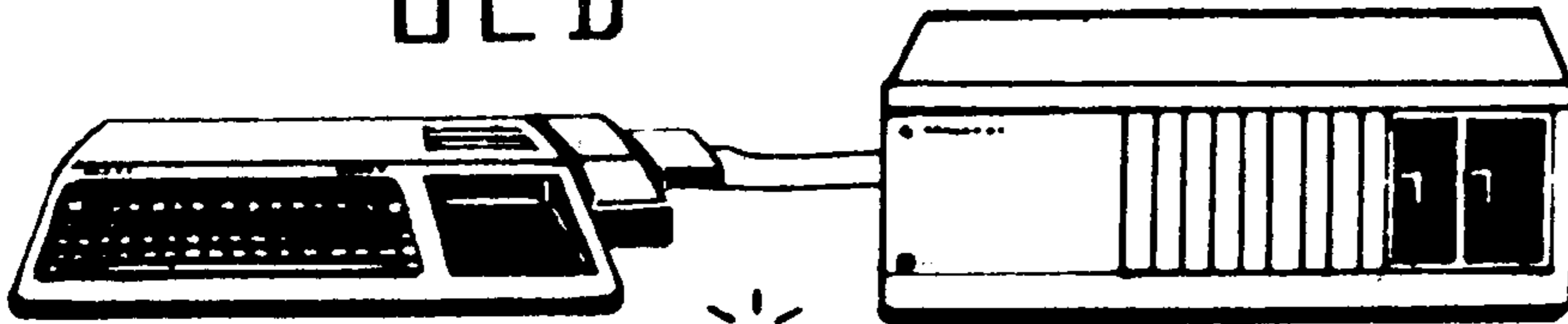
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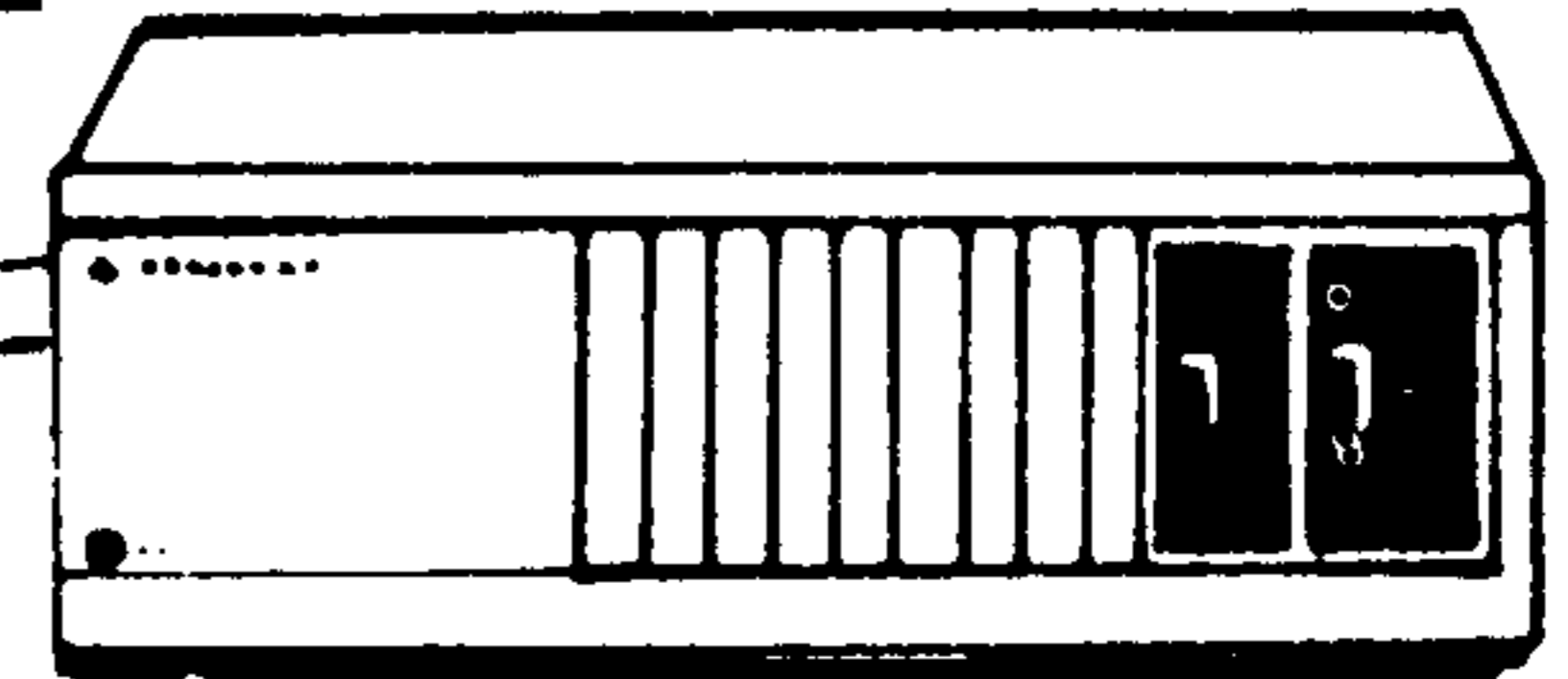
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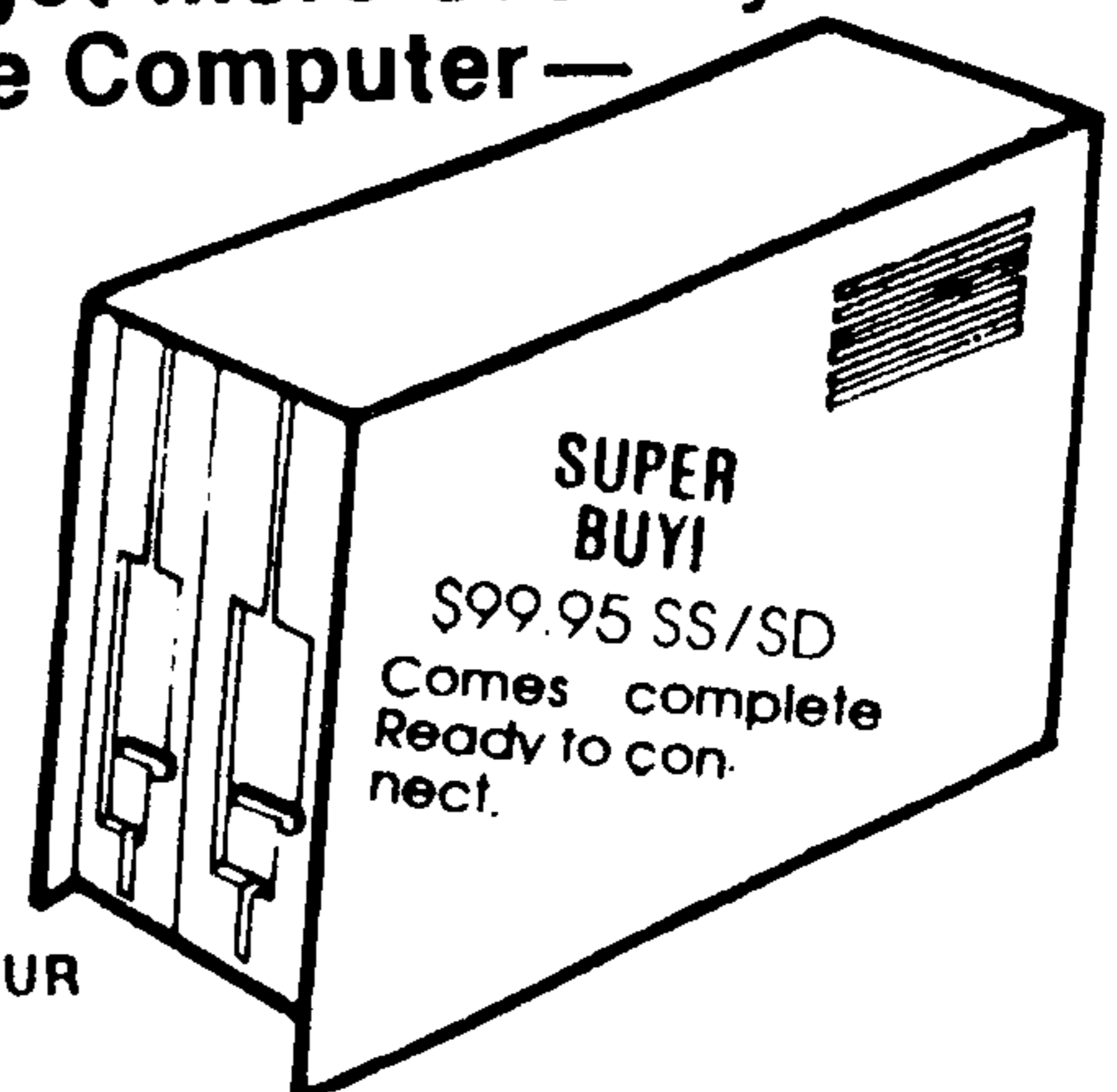
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*READ THIS

Here are some tips to help you when entering programs from MICROpendium:
1. All BASIC and Extended BASIC programs are run through Checksum, the numbers that follow exclamation points at the end of each program line. Do not enter these numbers or exclamation points. Checksum was published in the October 1987 edition.
2. Long XBASIC lines are entered by inputting until the screen stops accepting characters, pressing Enter, pressing FCTN REDO, cursoring to the end of the line and continuing input.

THE GENEVE 9640 HAS LANDED

You will recognize it by its trade mark, a graceful gray swan swimming on blue water, an apt symbol. The ugly duckling TI no longer wanted, is no ugly duckling anymore. The GENEVE has surpassed everyone's expectations, even our own: with power, speed, graphics, and adaptability not found in other microcomputers. In fact, the GENEVE does so much, this ad can only begin to tell you about it.

- **Near 100% Compatible:**

- If you have a program written in Basic, Extended Basic, XBI, Assembly Language, Fortran, Pascal, you name it, if it runs on the 99/4A then it is near certain to run on the GENEVE.

- **32K No Wait State High Speed RAM:**

- Programs like MultiPlan, which are painfully slow on the 99/4A, run many times faster, thanks in part to the High Speed RAM.

- **V9938 Video Processor with 7 Graphics Modes:**

- Compatible with the 99/4A so you can use the GENEVE with the TV or monitor you are currently using. Same resolution as the Mac but with color. Faster than the Amiga, as fast as the Atari and does it with 4:3 aspect ratio, something the Amiga and IBM AT can not do. Aspect ratio renders higher resolution, better color, and appearance, through the use of square pixels in the high resolution mode. 256 colors may be displayed on the screen at one time by the GENEVE, eight times as many as the Amiga can display in its high resolution mode.

- **Mouse Interface:**

- The mouse interface is built in and ready to use with the MYARC Mouse. But, we didn't stop there, it is also ready to support the newest hardware like video digitizers, and that's just for starters.

- **6 Complete Pieces Of Software Are Included With The GENEVE. But, three you will not be able to see how you ever did without are:**

- My-Word Processor; 80 columns, help screens for all modes of operation including control-U, initialize a disk without leaving the program, print formatted text to the screen for viewing before sending it to the printer and that's still not all My-Word will do.
 - Advanced Basic; the best and most powerful basic on the market today.
 - Pascal V4.21; if you have a standard USCD Pascal program, you will be able to run it with this program. If you do not have any Pascal programs, let me tell you, one of the largest library of programs available, is Pascal. Compilers for Fortran, Modula 2, Lisp, and Pilot, as well as business programs from A to Z, are all there. USCD Pascal Software developed for computers from Apple to IBM, will run on the GENEVE, without modification.

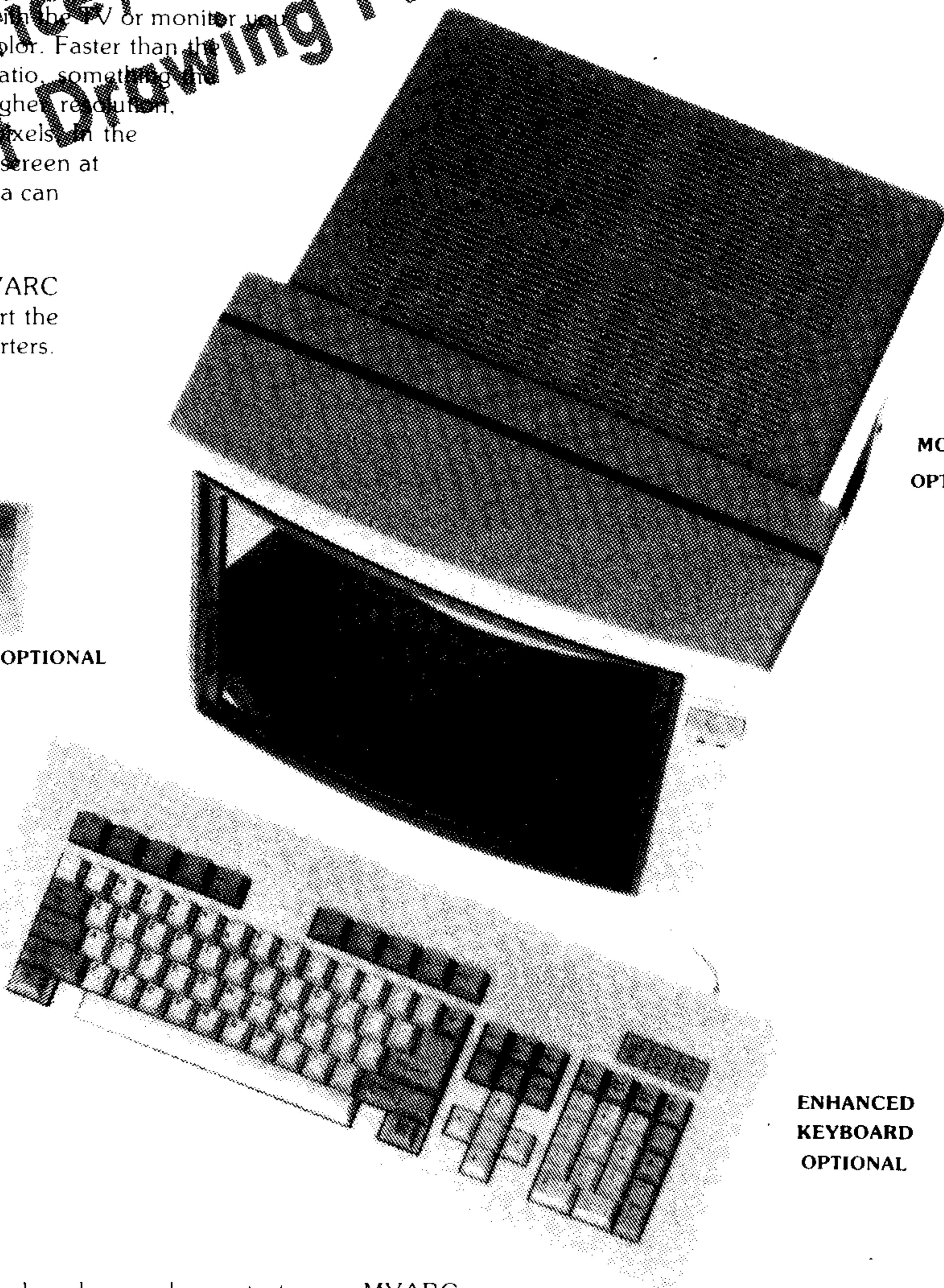
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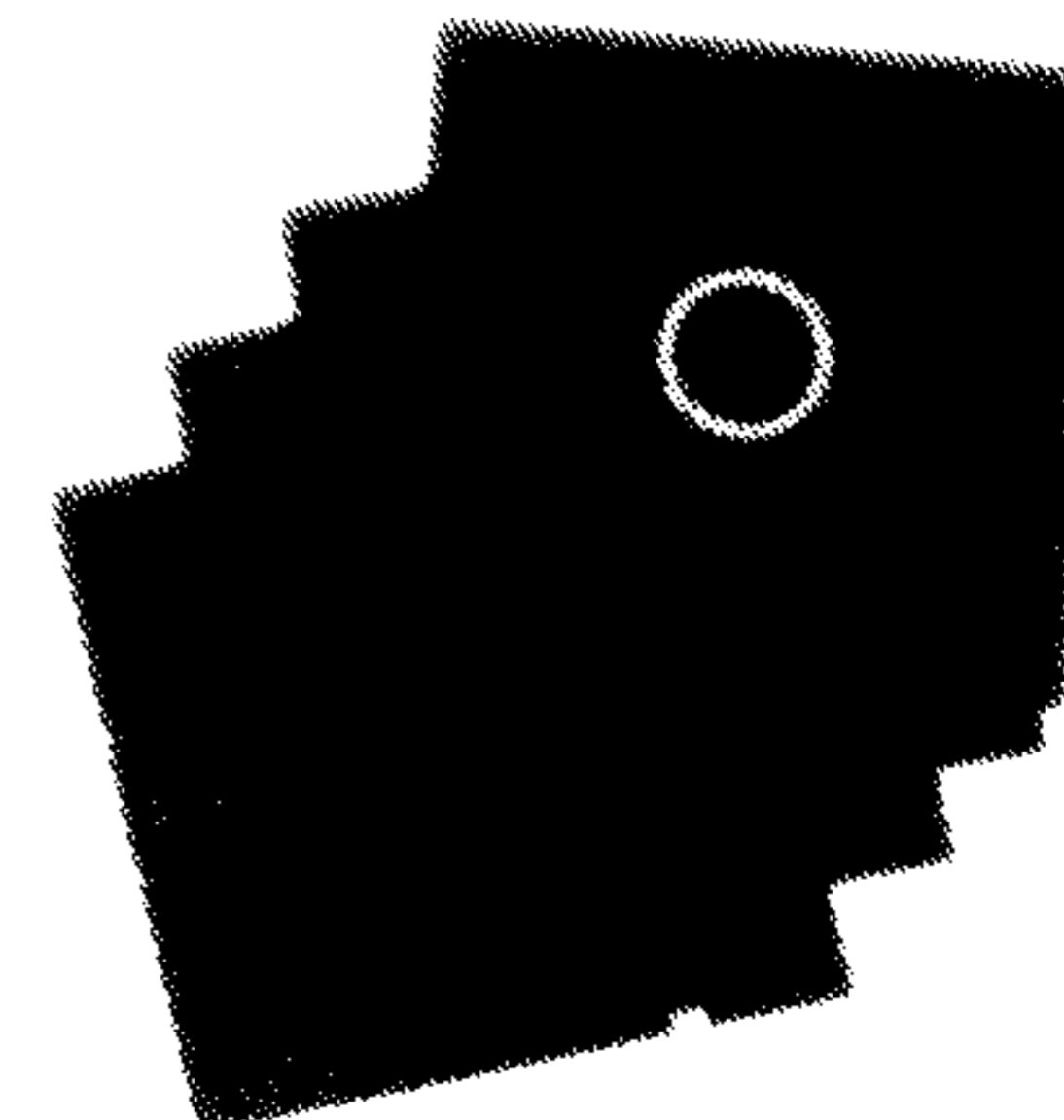


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Comments

GENIE has a dumb idea

I think GENIE's days are numbered. The telecommunications service has adopted a monthly charge of \$4.95 for all users, even if they don't go online that month. Ironically, The Source, which went out of business several years ago, had a minimum monthly charge of \$10. At that time there were four major telecommunications services of interest to consumers: The Source, CompuServe, GENIE and Delphi, although Delphi had yet to pick up steam.

Now there are three: CompuServe, GENIE and Delphi. Next year at this time I think there will be two.

GENIE says that for the \$4.95 per month users can access a range of services without paying any other on-line charges. These services include news reports, an electronic encyclopedia, shopping, human interest bulletin boards and similar fare. The biggest money makers, the computer special interest groups, are excluded from this offering. Users may continue to access these for the usual \$6 per hour during non-prime time hours. However, now those with 2400 baud modems will be charged at the same rate as those who use 300 and 1200 baud modems. Previously, 2400 baud during non-prime time was charged at \$10 per hour.

So, if you belong to a computer SIG on GENIE you'll pay \$6 per hour, plus you'll be billed \$4.95 per month for the other services

which you may never bother to use. (For TI-SIG users who go on-line for an hour a month, the charge will be \$10.95 instead of \$6.) The most useful of the new flat rate services is the ability to send and receive mail from other users. This formerly was available at the same \$6 per hour rate as the computer SIGs. Pardon me if I don't get excited about this big improvement.

GENIE is pretending that this change to a flat rate for some of its services is a big improvement, that months of research went into it. Maybe it's a big improvement for the marketing guys, but this just shows that they're easy to impress.

I give them 12 months.

A FEW GENEVE TIPS

Geneve columnist Jim Uzzell suggests that anyone who uses a Geneve should upgrade to at least double-sided disk drives. Version .97h of MDOS, for example, is too large for a single-sided, single-density disk. And it is definitely better than MDOS 1.14F. In fact, all of Uzzell's programs are done using .97h and ABASIC 2.99A. He says that .97h is more fully implemented in terms of supporting ABASIC than 1.14F. Also, he notes, .97h supports subdirectories on floppies from MDOS without a Myarc HFDC.

—JK

(Continued from Page 38)

```

360 !031
230 OPEN #2:DR$&G$,INPUT ,DI
SPLAY ,VARIABLE :: CALL LINK
("DISP",2,8,"Date:"):: CALL
LINK("DISP",2,13,SEG$(G$,1,8
))!087
240 GOSUB 450 :: CALL LINK("
DISP",24,2,"Loading..."):: F
OR I=1 TO 60 :: LINPUT #2:AS
(I):: NEXT I :: CLOSE #2 !08
0
250 R=4 :: FOR I=1 TO 19 ::
CALL LINK("DISP",R,1,AS(I)):
: R=R+1 :: NEXT I :: F=1 ::
CALL LINK("DISP",2,34,"Page:
")!203
260 F$=STR$(F):: CALL LINK("
DISP",2,39,F$):: GOTO 370 !0
47
270 CALL LINK("HORZ",4,1,32,
760):: IF X=13 THEN 360 ELSE
IF X=49 THEN 250 !093
280 IF F=1 THEN 290 ELSE IF
F=2 THEN 310 ELSE IF F=3 THE
N 360 !185
290 R=4 :: FOR I=20 TO 38 ::
CALL LINK("DISP",R,1,AS(I))
:: R=R+1 :: NEXT I :: F=2 ::
CALL LINK("DISP",2,34,"Page

```

```

:")!255
300 F$=STR$(F):: CALL LINK("
DISP",2,39,F$):: GOTO 370 !0
47
310 IF X=13 THEN 360 !170
320 R=4 :: FOR I=39 TO 57 ::
CALL LINK("DISP",R,1,AS(I))
:: R=R+1 :: NEXT I :: F=3 ::
CALL LINK("DISP",2,34,"Page
:")!011
330 F$=STR$(F):: CALL LINK("
DISP",2,39,F$):: GOTO 370 !0
47
340 GOSUB 450 :: CALL LINK("
DISP",24,6,"Insert Program D
isk,Press F6"):: CALL KEY(3,
A,B):: IF A=6 THEN 100 ELSE
IF A<>12 THEN 340 !114
350 ON ERROR 430 :: RUN "DSK
.NP.NPMENU" !102
360 NEXT H :: CLOSE #1 :: GO
TO 340 !029
370 GOSUB 450 :: CALL LINK("
DISP",24,3,"Enter-Next F6-Pa
ge P-Print F9-Exit"):: CALL
KEY(3,X,Y):: IF Y=0 THEN 370
!055
380 IF X=80 THEN 400 ELSE IF
X=12 THEN 270 ELSE IF X=15
THEN 390 ELSE IF X=13 THEN 2
70 ELSE IF X=49 THEN 270 ELS

```

```

E 370 !089
390 CLOSE #1 :: GOTO 340 !18
9
400 GOSUB 450 :: CALL LINK("
DISP",24,3,"Printer:PIO")::
CALL LINK("ACCEPT",24,11,-20
,"",PR$)!010
410 ON ERROR 430 :: OPEN #3:
PR$,OUTPUT :: PRINT #3:TAB(2
0);D$ :: PRINT #3 !139
420 FOR I=1 TO 60 :: PRINT #
3:TAB(20);AS(I):: NEXT I ::
PRINT #3:CHR$(12):: CLOSE #3
:: GOTO 370 !154
430 RUN 440 !043
440 CALL LINK("DISP",24,1,"
Input/Ouput Device Err
or"):: RUN !041
450 CALL LINK("HORZ",24,1,32
,40):: RETURN !111
460 CALL LINK("HORZ",1,1,129
,39):: CALL LINK("VERT",1,1,
130,4):: CALL LINK("HORZ",4,
2,131,39):: CALL LINK("VERT
",1,40,132,4)!239
470 CALL LINK("HORZ",21,1,12
9,39):: CALL LINK("VERT",1,1
,130,24):: CALL LINK("HORZ",
24,2,131,39):: CALL LINK("VE
RT",1,40,132,24):: RETURN !1
97

```

* TI FAIRE WEEKEND *

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Feedback

Wishful thinking

Regarding the controversy between Geneve and TI owners, I've seen the ads and been interested in upgrading. But I've only seen one Geneve in the entire state of South Carolina, and its owner has relegated it to the back shelf in favor of an IBM clone. He has the same complaints R.D. Cramer (Feedback Aug. '90) and so many others have about unfinished systems, etc.

Yet I have still been interested enough to send for information from Myarc. They sent me a 1987 brochure, which led me to write several more letters, including one for information on the Myarc Hard and Floppy Disk Controller, all of which went unanswered by Myarc.

I called numerous times both the New Jersey and Alabama offices and the phone was always busy; finally, I got through, only to have the lady who answered the phone be unable to answer most of my questions.

This seems to be the wrong approach for a company desiring to sell something. In my search for information I've spoken on the phone to several people who love their Geneves, but most are experienced assembly programmers to whom software problems are no big deal. Then again, I keep seeing the ads for TI upgrades, 80 column cards, GRAM simulators, RAMdisks, etc.

What's my point? Confusion. Which way do I go? Upgrade the TI, get a Geneve or get an IBM clone? I use an IBM daily and would really rather not go that route. Maybe if Myarc got the bugs out.

While I am doing wishful thinking, why not put the Geneve (\$400) in a new P-box (\$200?) with an RS232 (\$100), MHFDC (\$200) and a couple of floppies (\$130), offer the whole package for around \$1,100, get some storefront dealers and go head to head with IBM and Apple? Why not? If Myarc were to make a serious commitment to selling hardware, we could draw a whole new customer base to the TI/Geneve world. Already, top-notch programmers out there need to be convinced to stay or in some cases lured back to the TI and Geneve. Meantime, I guess I'll just wait and see what happens.

Dan O'Quinn
Walterboro, South Carolina

Improve instructions

Based on the reviews in your publication

I purchased Spell It! by Jim Reiss (v1.05) and TI-Base (v3.01).

The Spell It! program certainly is an improvement over Spell Check. I took a one-page, single-spaced letter and checked it with both programs. Spell It! took half the time and I had to check fewer than half as many words. It did have some strange behaviors, however:

1. The filename was GRAMARINE and it changed it to GRAYMARISE. Then it gave the error message, "I/O Error #7." The instruction book has no references to errors. It then locked up and I had to lose that file. I found a warning that filenames should be fewer than 10 characters but no mention of the real problem it would cause. Using a shorter filename solved that problem.

2. The instruction book was assembled backward. It was no problem to take the staples out and reassemble, but neither of my home staplers had the reach to restaple the book.

3. The program accepts USER words on disks that do not contain dictionary words with the same first letter. I don't know the problems this will cause, but I suspect that the USER words entered on the wrong disk will not be used in the search. Again, no mention of this subject in the instruction book.

4. The manual states that the dictionary "can be edited and modified with TI-Writer." The disk version, TI-Writer II, would not load the dictionary. I haven't tried the original cartridge version, but suspect that it overflowed memory and therefore must load a part at a time, which the disk version will not do.

5. Many times when I request "LOOK-UP" it runs the dictionary disk, then returns to the "Word Review" screen with no similar word listed. This is odd, as several of the words had rather common words as the first few letters. Again, no comment in the instruction book.

6. The title page appears and stays there. By experimentation, I found that you must press "Enter" to continue, but this is not on either the screen or in the book.

7. After you save the new file, the screen asks "What file to check." There is no way to leave that screen except Quit and again no member of what to do in the instruction book.

I'll give the instructions a "C." They need to be rewritten by a non-programmer who

has tried to use them. Even better would be a high school student who has had little training on computer usage.

TI-Base is another problem. I admit that I'm 65 and sometimes a little dense and memory sometimes fades, but I did graduate from college and took numerous college courses during my working years, including some computer courses (not programming courses). I haven't the slightest idea what TI-Base is supposed to do or how to do it. After nearly eight hours I finally got an input screen, created a file and printed it. I haven't the foggiest notion from the instructions how to make it print in any kind of format. In fact, the book just says (top of page 3-16) "The system will attempt to place the entire print statement on one line. ----"

I'm afraid the review "A" should be an "F" for the instructions, at least as far as us beginning programmers are concerned.

Joe Williams
Kingsville, Ohio

William Gaskill's monthly column on using the data management program TI-Base may supplement some of the manual's deficiencies. — Ed.

Printer codes needed

Jere Turner's letter (Feedback July '90) deserves the support of many other users of printers that are not Epson or Epson compatible. For varied reasons all TI owners do not have Epson compatible printers. While it is time-consuming to try to translate the codes for one printer to another, it can sometimes be done, but I have not had 100 percent success.

In the same issue is a nice program by Michael Rittweger on Three Column Output that takes a step in the right direction by listing the codes used and their purpose. With that information it should be fairly easy to translate the codes to another printer. While that is a good idea, it is not customary. Maybe you would consider publishing a list of the Epson codes and what they do so that many if not most of the articles that require a printer can become useful to more of your readers. I have tried making my own list, but there are always a few that I cannot fathom.

John Woestman
Lancaster, Pennsylvania

We'll try provide a list in a future issue. — Ed.

o Converting data bases to TI-Base

By **BILL GASKILL**

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CONVERT is the directive and program segment in TI-Base that is used to translate data that is in another data base or program's format to a format that is readable by TI-Base. It is perhaps the most welcome feature of TI-Base to any user who has existing data files that need to be imported without the drudgery of retying.

The requirements for a successful conversion of existing data are;

- Knowledge of the existing (source) file format as far as number of fields and length and type of each field.
- Having an existing data base that is either in FIXED format or that can be converted to FIXED format via some utility external to TI-Base or that has the data in each record in the same physical position in the data string.
- Two disk drives or enough space on a single disk to accommodate the source file, the target (TI-Base) file and the OVLAY/P file that contains the CONVERT routine.

Knowledge of the existing (source) file format is necessary so that you can design the TI-Base (target) file with the same number of fields and field lengths as the fields in the source file. This ensures that the data from the source file is placed in the correct field in the TI-Base file.

The FIXED length requirement is needed so that CONVERT can be assured that the data to be placed in the target fields will be found in the corresponding positions in the source fields. The exception to the FIXED length requirement is when a data file is printed to disk as a tabular report. While such a file may be stored as a variable length file, the data in each field will always be found in the same positions for each record. For use with CONVERT, the data string looks just like a FIXED field data file. This is one way that PR-Base data files can be converted to TI-Base format. In fact, data from any program that can print records in tabular report format, to a fixed or variable length disk file, can be converted to TI-Base. This assumes of course that a valid disk drive name can be substituted for a printer name.

The steps in the conversion process include:

1. Type in CONVERT DSK#.FILE1 (space) DSK#.FILE2 where the pound sign indicates the desired input and output drives, with FILE1 being the source file name and FILE2 the target file name. (You could also just type in the word CONVERT and TI-Base would prompt you for "From" and "To" paths. Paths mean that both the disk drive names and numbers and the file names would have to be entered (e.g. DSK1.FILE1.)

2. Create the TI-Base file when the CREATE screen appears. Press F8 when you are done designing the target file and then press Enter when prompted to "ready devices, PRESS ENTER". The conversion reads and writes will begin. When complete, the dot prompt will appear.

3. Type in USE DSK#.TARGETFILE, where TARGETFILE is the name of the file that you created to receive the converted

data, to activate the newly created TI-Base file.

4. Type in the word RECOVER and then press Enter.

TI-Base will read the new file to determine the end of file and thus the number of records in the file. It then rebuilds the index (the /S) file.

5. Type in the word CLOSE. The new file is closed and the CONVERT is then complete.

6. Now activate the target file and then invoke the EDIT mode to display a couple of records. This will show you if the data was successfully converted, and whether or not it is positioned properly in each field.

Altman List expands

Steve Mehr has turned over to the Southwest 99ers the "care and feeding" of the "Altman List" of fairware.

Ida McCargar, who is in charge of the list, says she has personally added more than 150 titles to the list and is hoping to make it as complete as possible. She says she needs input from authors wishing to be represented, i.e., Title of program, version number, if any, brief description, author's name and address (phone optional), amount to send and disks if required. She says she would also appreciate receiving any new addresses.

Write her at 5428 Madison Strav., Tucson, AZ 85706.

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BASIC

Books of the Bible

By REGENA

A favorite activity in Bible study classes is having a scripture chase — a contest to see who can be the first to find a scripture in the Bible. My oldest son is good at this contest, and he told me he remembers the order of the books in the Bible by singing the song he learned with the names (and he's a boy who does not usually sing). This month's program is a quiz to help you learn the books of the Bible and their order.

The program first plays the song, and the words are printed as the music is played. Only the books in the Old Testament are in this program. After the song is complete, a quiz is presented. A book is randomly chosen. The computer asks which book comes before the chosen book then which book comes after the chosen book. The user must type in the correct name. A blank is shown for every letter in the name, and you must type the correct letter to be able to continue (so the name must be spelled correctly).

I usually don't like to use lots of DATA statements for sound in published programs because they are harder to type, but I had to conserve memory here. The DATA statements in Lines 220-650 contain the data for playing the song. Line 180 reads six data items at a time, TT for the length of the note, F1 for the melody frequency, V for the volume of that melody note, F2 and F3 for accompaniment notes and A\$ for the word in the song.

Line 190 uses the variables to play the tone. Note that in Line 150 the tempo is set, then the TT value is 1 for a quarter note, .5 for an eighth note, 1.5 for a dotted quarter note or 2 for a half note. The volume V for the first frequency varies so that when two notes of the same frequency are played one right after the other, you can vary the volume so two distinct notes are heard. Another "trick" is to vary the other frequencies slightly.

Line 200 prints the word or part of a word as it goes to the music. Notice that the PRINT statement uses a semicolon so that syllables will be printed right after the previously printed one. Some of the data items need quotes to contain a comma and extra spaces to make the printing come out right.

Lines 660-690 read in the names of the books in order from the DATA statements in Lines 700-730. Also, C\$(N) values are set equal to "I" for use in choosing the random books.

Lines 740-900 contain the quiz. Lines 750-780 randomly choose

a book that has not previously been chosen. Lines 800-840 ask for the book before the chosen book if the book is not the first book. Lines 850-890 ask for the book after the chosen book if the book is not the last book. Lines 930-1200 are the subroutine to receive the answer. The answer is X\$. L is the length of X\$, and Line 940 prints the blanks depending on the length. C is the column for letters to be printed. Lines 960-1040 print the Roman numerals I or II and a space where appropriate. Lines 1050-1180 then receive the user's input letters. Only letters may be pressed, and the letter must be correct before the program continues. If there is a space in the name (such as SONG OF SOLOMON), the space is printed automatically in Lines 1150-1170.

When the quiz is complete, Lines 910-920 clear the screen and branch to the end. Lines 1210-1270 print all the books in order and end the program.

Before using this program, be sure to do the CALL FILES procedure:

```
CALL FILES           [ENTER]
NEW                  [ENTER]
```

If you do not, there will be a "garbage collection" discernible pause in the music where it doesn't belong. I did have some REM statements among the DATA statements, but noticed that pause in the music. By taking out the REM statements I was able to get rid of the pause there. However, sometimes you'll get a pause during the quiz as you are typing in letters. I am guessing that if I conserved memory even more (combining DATA statements, for example, or not printing the list at the end), those pauses might be totally eliminated.

To make a New Testament program, I simply changed the DIM statement to 27 for the 27 books, changed the DATA statements for a different song and the list of the 27 books, and changed the PRINT statements at the end. I also added some coding to test for Roman numeral III (for III John) and to print ST. for the first four books.

To save typing effort, you may order a copy of this program by sending \$4 to REGENA, 918 Cedar Knolls West, Cedar City, UT 84720. Be sure to specify that you need "BIBLE" for the TI, and whether you want cassette or diskette. On these orders I will also include the New Testament program.

BIBLE

```
100 REM BIBLE !056
110 REM BY REGENA !071
120 DIM B$(39),C$(39)!080
130 CALL CLEAR !209
140 PRINT "BOOKS IN THE OLD
TESTAMENT": : :!166
150 T=60000/130 !248
160 RESTORE 220 !057
170 FOR N=1 TO 138 !170
180 READ TT,F1,V,F2,F3,A$ !2
25
190 CALL SOUND(TT*T,F1,V,F2,
6,F3,8)!015
200 PRINT A$;!181
210 NEXT N !228
220 DATA 1.5,494,1,294,196,G
EN,.5,440,1,262,196,E,1,392,
1,247,196,"SIS," !084
230 DATA 1.5,494,1,294,196,E
X,.5,440,1,294,196,0,.5,392,
3,247,196,"DUS," !087
240 DATA .5,392,1,247,196,LI
,1,440,1,262,147,VIT,1,392,
,247,147,I,1,440,1,262,147,
CUS," !172
250 DATA 1,494,1,294,196,NU
,1,392,2,247,196,"BERS," ,:
,392,1,9999,9999,DEU,.5,392,
0,9999,9999,TER !076
(See Page 11)
```

REGENA ON BASIC —

(Continued from Page 10)

```

260 DATA 1.5,392,1,330,131,0
N,.5,370,2,294,131,0,1,330,2
,262,131,"MY," !076
270 DATA 1,294,1,247,196,JOS
H,1,392,1,247,196,U,1,494,1,
294,196,"A," !129
280 DATA 1.5,440,1,262,147,J
UDG,.5,392,1,247,147,"",1,44
0,1,262,147,"ES," ,3,392,1,2
47,196,"RUTH," !081
290 DATA 1.5,494,1,294,196,S
AM,.5,440,1,262,196,U,1,392,
1,247,196,"EL," !012
300 DATA 1.5,494,1,294,196,S
AM,.5,440,1,262,196,U,1,392,
1,247,196,"EL," !012
310 DATA 1,440,1,262,147,"KI
NGS," ,1,392,1,247,147,"",1,
440,1,262,147,"KINGS," !219
320 DATA .5,494,1,294,196,CH
RON,.5,494,2,294,196,I,2,392
,1,247,196,"CLES," !18
2
330 DATA 1.5,392,1,330,131,C
HRON,.5,370,1,294,131,I,1,33
0,1,262,131,"CLES," !002
340 DATA 1,294,1,247,196,EZ,
1,392,1,247,196,"RA," ,.5,49
4,1,294,196,NE,.5,494,2,294,
196,HE !161
350 DATA 1.5,440,1,262,147,M
I,.5,392,1,247,147,"AH," ,1,
440,1,262,147,"AND " !062
360 DATA 1,392,0,247,196,ES,
2,392,3,246,195,"THER,
" !032
370 DATA 1,294,0,294,196,"JO
B," ,1,294,3,9999,196,"PSALM
S," ,1,294,1,294,198,"AND "
!244
380 DATA 1,330,1,262,196,PRO
V,1,294,1,247,196,"ERBS," ,1
,294,3,9999,147,"AND " !089
390 DATA 1,294,1,247,196,EC,
1,292,3,9999,147,CLE,1,294,1
,245,196,SI,1,330,1,262,196,
AS !087
400 DATA 1.5,294,1,247,196,"
TES," ,.5,9999,15,999
9,9999,"" !249
410 DATA 1,294,1,247,196,"SO
NG " ,1,392,1,247,196,"",1,49
4,1,294,196,"OF " !117
420 DATA .5,587,1,294,247,SO
L,.5,587,3,292,245,0,1,494,1
,294,247,"MON," !073
430 DATA 1,392,1,294,247,I,1
,370,1,294,220,SA,1,440,1,27
7,220,"IAH," !165
440 DATA .5,277,0,196,110,JE
R,.5,277,3,195,112,E,.5,294,
0,185,147,MI,2.5,294,3,185,1
47,"AH," !014
450 DATA 1.5,494,1,294,196,L
A,.5,440,1,262,196,M,1,392,1
,247,196,EN !100
460 DATA 1.5,494,1,294,196,T
A,.5,440,1,262,196,"TIONS,
",1,392,1,247,196,E,1,440
,1,262,147,ZE !240
470 DATA 1,392,1,247,147,KI,
1,440,1,262,147,"EL," ,1,494
,1,294,196,DAN,2,392,2,247,1
96,"IEL," !244
480 DATA 1.5,392,0,330,131,H
O,.5,370,1,294,131,SE,1,330,
1,262,131,"A," !006
490 DATA 1,294,1,247,196,"JO
EL," ,1,392,1,247,196,A,1,49
4,1,294,196,"MOS," !096
500 DATA 1.5,440,1,262,147,0
,.5,392,1,247,147,BA,1,440,1
,262,147,DI,3,392,1,247,196,
"AH," !039
510 DATA 1,294,0,247,196,JO,
1,294,2,246,195,"NAH " ,1,294
,1,247,196,"AND " !234
520 DATA 1,330,1,262,196,MI,
1,294,0,247,196,"CAH " ,1,294
,2,245,195,"AND " !207
530 DATA 1,294,0,247,196,NA,
1,294,2,245,195,"HUM," ,1,29
4,0,247,196,HA !179
540 DATA 1,330,1,262,196,BAK
,.5,294,1,247,196,"KUK," ,.
5,9999,30,9999,9999,"" !254
550 DATA 1,294,1,247,196,ZEP
H,1,392,1,247,196,"",1,494,1
,294,196,A,1,587,1,294,247,N
I !168
560 DATA 1,494,2,294,196,"",
1,392,2,294,247,"AH,"
,1,370,1,294,220,HAG,1,440,1
,277,220,"" !224
570 DATA 1,277,1,196,110,GA,
3,294,2,185,147,"I," !077
580 DATA 1.5,494,1,294,196,Z
ECH,.5,440,1,262,196,"",1,39
2,1,247,196,A !097
590 DATA 1.5,494,1,294,196,R
I,.5,440,1,262,196,"",1,392,
1,247,196,"AH," !102
600 DATA 1,440,1,262,147,MA,
1,392,1,247,147,L,1,440,1,26
2,147,A !095
610 DATA 1,494,1,294,196,"CH
I " ,2,392,1,247,196,"-- " !1
73
620 DATA 1.5,392,1,330,131,"
THESE " ,.5,370,1,294,131,"AR
E " ,1,330,1,262,131,"THE " !
094
630 DATA 1,294,1,247,196,BOO
KS,1,392,1,247,196," OF " ,1,
494,1,294,196,THE !163
640 DATA 1.5,440,1,262,147,"
OLD " ,.5,392,1,247,147,TES,
1,440,1,262,147,TA,3,392,1,2
47,196,MENT. !020
650 DATA 1,9999,30,9999,9999
,"" !016
660 FOR N=1 TO 39 !121
670 READ B$(N)!184
680 C$(N)="1" !217
690 NEXT N !228
700 DATA GENESIS,EXODUS,LEVI
TICUS,NUMBERS,DEUTERONOMY,JO
SHUA,JUDGES,RUTH,I SAMUEL,II
SAMUEL,I KINGS,II KINGS !15
6
710 DATA I CHRONICLES,II CHR
ONICLES,EZRA,NEHEMIAH,ESTHER
,JOB,PSALMS,PROVERBS,ECCLESI
ASTES,SONG OF SOLOMON !249
720 DATA ISAIAH,JEREMIAH,LAM
ENTATIONS,EZEKIEL,DANIEL,HOS
EA,JOEL,AMOS,OBADIAH,JONAH,M
ICAH,NAHUM,HABAKKUK !233
730 DATA ZEPHANIAH,HAGGAI,ZE
CHARIAH,MALACHI !162
740 FOR PROB=1 TO 39 !094
750 RANDOMIZE !149
760 R=INT(39*RND)+1 !215
770 IF C$(R)=" " THEN 760 !16
2
780 C$(R)=" " !171
790 CALL CLEAR !209
800 IF R=1 THEN 850 !092
810 PRINT "WHAT IS THE BOOK
BEFORE" !137
820 PRINT :B$(R);"?": : : :
:!186
830 X$=B$(R-1)!027
840 GOSUB 930 !245
850 IF R=39 THEN 900 !202
860 PRINT : "WHAT IS THE BO
(See Page 12)

```

REGENA ON BASIC—

```

(Continued from Page 11)
OK AFTER" !177
870 PRINT :B$(R);"?": : : :
:!186
880 X$=B$(R+1)!026
890 GOSUB 930 !245
900 NEXT PROB !201
910 CALL CLEAR !209
920 GOTO 1210 !013
930 L=LEN(X$)!200
940 CALL HCHAR(22,3,95,L)!00
4
950 C=3 !253
960 IF SEG$(X$,2,1)<>" " THE
N 1010 !117
970 CALL HCHAR(22,3,73)!001
980 CALL HCHAR(22,4,32)!253
990 C=5 !255
1000 GOTO 1050 !109
1010 IF SEG$(X$,3,1)<>" " TH
EN 1050 !159
1020 CALL HCHAR(22,3,73,2)!1
75
1030 CALL HCHAR(22,5,32)!254
1040 C=6 !000
1050 FOR J=C TO L+2 !144
1060 CALL KEY(3,K,S)!190
1070 CALL HCHAR(22,J,32)!074
1080 CALL HCHAR(22,J,95)!083
1090 IF S<1 THEN 1060 !049
1100 IF (K<65)+(K>90)THEN 10
60 !061
1110 CALL HCHAR(22,J,K)!102
1120 IF K=ASC(SEG$(X$,J-2,1)
)THEN 1150 !249
1130 CALL SOUND(100,131,2)!1
25
1140 GOTO 1060 !119
1150 IF SEG$(X$,J-1,1)<>" "
THEN 1180 !043
1160 CALL HCHAR(22,J+1,32)!0
05
1170 J=J+1 !013
1180 NEXT J !224
1190 CALL SOUND(100,1200,2)!
172
1200 RETURN !136
1210 PRINT "GENESIS, EXODUS,
LEVITICUS, NUMBERS, DEUTERO
NOMY," !005
1220 PRINT "JOSHUA, JUDGES,
RUTH,": "I SAMUEL, II SAMUEL,
": "I KINGS, II KINGS," !213
1230 PRINT "I CHRONICLES, II
CHRONICLES,EZRA, NEHEMIAH,
ESTHER, JOB,PSALMS, PROVERBS
," !245
1240 PRINT "ECCLESIASTES, SO
NG OF": "SOLOMON, ISAIAH, JER
EMIAH, LAMENTATIONS, EZEKIE
L," !005
1250 PRINT "DANIEL, HOSEA, J
OEL, AMOS, OBADIAH, JONAH,
MICAH," !218
1260 PRINT "NAHUM, HABAKKUK,
": "ZEPHANIAH, HAGGAI,": "ZECH
ARIAH, MALACHI": : : : !017
1270 END !139

```

Texaments releases GIF Mania program

Texaments has released **GIF Mania**, described as the first program able to display standard GIF graphics files on an ordinary TI99/4A.

Using an ordinary 4A console with a disk drive and 32K memory expansion, TI users can now view industry standard GIF graphics files with the aid of **GIF Mania**, according to Steve Lamberti, president of Texaments. Different controls within the program allow the user to alter the overall appearance of images as they appear on the screen, he says. Controles included are color select (intensity, deviation, greyscale and monochrome viewing), black line mode (to remove image borders), condense mode (to crop images larger than the normal TI99/4A viewing screen) and left and up shift modes (for zooming around high-resolution pictures).

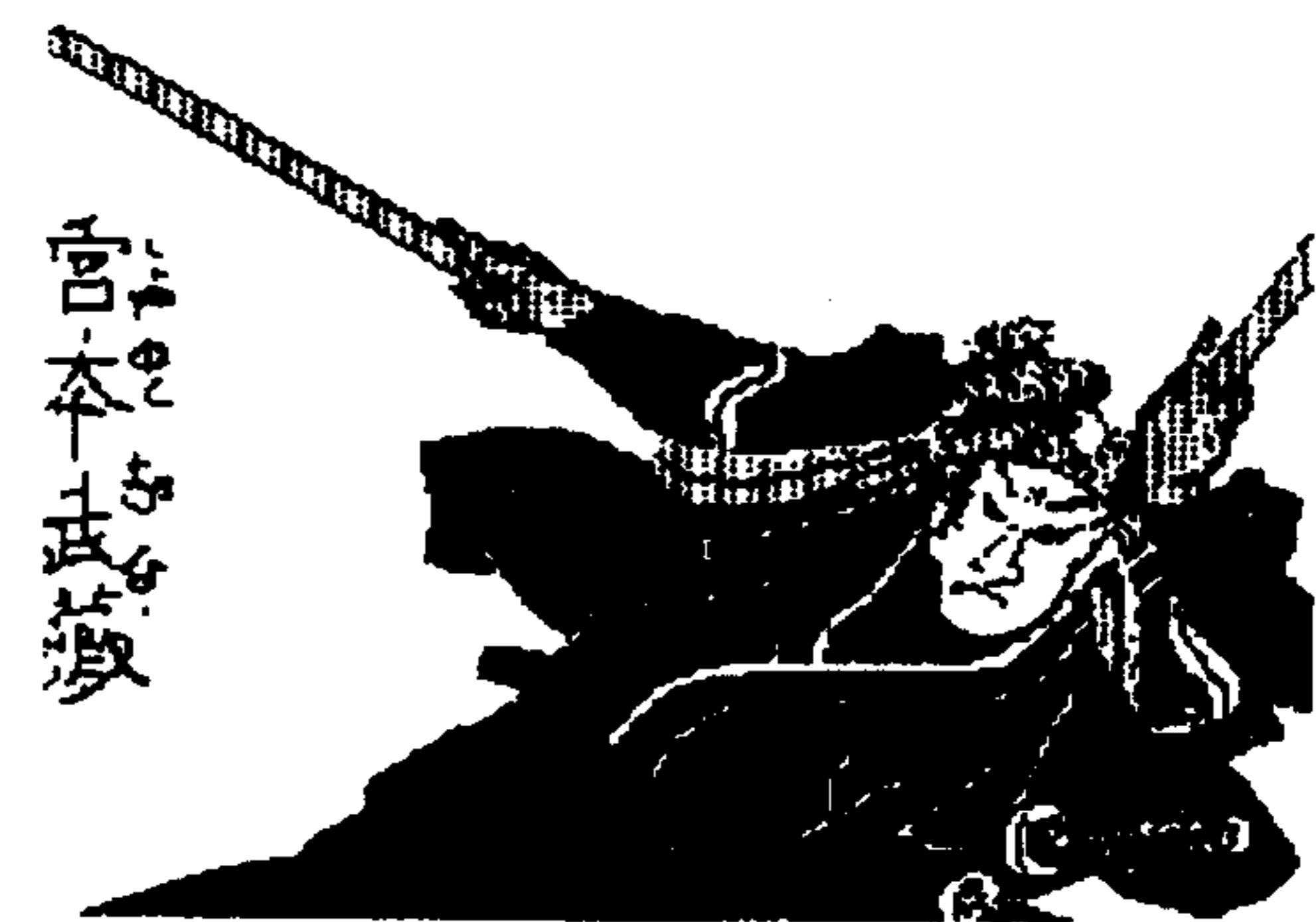
In addition, the manufacture says, **GIF Mania** can also convert GIF images into standard TI Artist Plus! pictures. With TI Artist Plus! (sold separately), the user can alter or print the pictures or use them to create movie sequences.

GIF (Graphics Interchange Format) is a universal graphics format originally developed by CompuServe Information Services so that computer users could exchange graphics files regardless of what computer platform they were using (IBM, Apple, Commodore, Atari or TI). The GIF format has become a worldwide graphics image standard. More than 100,000 GIF images exist, many of which are available free through on-line information services such as CompuServe, GENie, Delphi and local bulletin boards. In addition, many users group libraries contain GIF files.

"What we did with **GIF Mania** was thought to be impossible," Lamberti says. "After teaming up with Barry Boone, we knew

the impossible was within our reach."

GIF Mania is fully menu driven and includes complete drive cataloging facilities. It can accommodate files stored on floppy drives, RAM drives and hard drives.



GIF Mania is available from Texaments for \$14.95 (plus \$3 for domestic and Canadian first class shipping or \$8 for foreign air mail shipping). It requires a disk system, 32K memory expansion and either Extended BASIC, Mini-Memory or Editor/Assembler.

Although **GIF Mania** will operate on the Geneve in GPL mode, it will have the same color limitations as the TI99/4A; it does not utilize the advanced display modes of the Geneve. **GIF Mania** is compatible with Myarc's Hard and Floppy Disk Controller and all RAMdisks currently in use.

For information or to order, contact Texaments, 53 Center St., Patchogue, NY 11772; (516) 475-3480 (voice); or (516) 475-6473 (BBS).

EXTENDED BASIC

Squashed directories

By **JERRY STERN**

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Summer is over; there are no more excuses for not coming back indoors, settling down and getting organized. But I've had my TI disk drives since 1983, and the accumulation of disks is getting big. It helps to keep only related items on the same disks, as if they were file folders, and sorting the disks by topics, like data files, pictures, commercial programs, or games, but I still find it easiest to read file-names from a catalog of files.

There are a few catalog programs available commercially, but they are gluttons for work; they sort all the program names into one long listing, and hope that is helpful. That's overkill for most of us. If related files are kept together, then "CANON" on a music disk is obviously different from "CANON" on a disk of sprites and display screens. A simple disk directory of every disk in a collection, preferably listed in storage order, would be perfectly satisfactory, if it doesn't outmass the telephone book. That reduction in size requires packing as much information as possible onto a page.

Using condensed print, or 17 character per inch pitch, will allow at least 132 characters per line on most printers. Using superscripts would squeeze the text even tighter, but not all printers can print superscript; the original TI 99/4A printer cannot print super- or subscripts unless modified with the Epson Grafrax kit. (The Grafrax Plus Bit-Plot Graphics Retrofit Kit was a rare upgrade kit for the Epson MX-80 and TI 99/4 Impact Printers. The TI printer was actually a disguised MX-80, plus a non-standard serial board, plus international character sets, plus a two K print buffer. For about \$90, the kit included three chips and a new manual. The MX-80 had three empty sockets on its main board for these chips, but the TI Impact Printer had these sockets filled with chips for the international character sets. Installing the new chips meant losing the international characters, but gaining solid underlining, italics, superscripts, and subscripts. Sadly, this chip set is now extinct. Only a few survive in hidden locations

around the world, and no one at Epson could locate any survivors when I last checked, some five years ago.) Those extra-tiny superscript and subscript sizes print in two passes, so they are too slow for a long printout. 132 characters per inch will have to be sufficient.

More squeezing can be done by printing eight lines per inch instead of the usual six. The combination of eight lines and 17 characters is the tightest legible print size. In that space, I'd like to fit the disk name, sectors used and available, and every file name, size, type, record length, and protection status for six files on each line. The file information fits in 28 columns on screen, so six times 28 is 168 columns.

To speed up the process of reading all the disks, the catalog lister should do all the file reading at once, and then do all the printing while you are changing the disks. And using all the installed disk drives in any order would be useful, too.

This will take some careful data packing.

To speed up the process of reading all the disks, the catalog lister should do all the file reading at once, and then do all the printing while you are changing the disks. And using all the installed disk drives in any order would be useful, too.

CATALOG-6 can perform those functions, and also alerts you when it is safe to swap disks by changing the screen color to green. A blue screen indicates that a file is being read, and green is for printing, or waiting for the user to press a number key for the next disk drive to read.

Reading directories was described in this column in the explanation of the DIR program in June. Briefly, here it is one more time. Directory files can be read as the unnamed file on each disk. The file is

opened as Input, Relative, Internal, and each file includes the disk name, available and used sectors, and a listing of files by name, protection status, file size and type, and the record length. There can be up to 127 files on a disk.

CATALOG-6 begins with titles and initiation of variables in the lines up to 280. The main loop that is executed for each disk begins on line 290. There are two smaller loops in this area, on lines 380 to 410, reading the file names and types, and on lines 440 to 500, printing out that information. It is this second loop that allows all that data to fit in 132 columns.

On line 220, the program will prompt you for the current date. You may enter anything you like here, whether it is the date, or a title for a disk collection, or a blank line. Whatever you enter here will simply be printed as the first line of the listing. If you would like more than one title line printed, end each title before the last with a question mark. CATALOG-6 will print each line, and ask for the next. The question mark will not be printed. If you really DO want a title line to end with a question mark on the printout, follow the question mark with a space, and the punctuation will print normally.

If you are keeping your programs and disks sorted by category, run CATALOG-6 separately for each category of disks. Give each group of disks its own listing with its own heading starting on a new page. Then when the time comes to update the listing, just the groups with new disks can be reprinted.

After the header is printed, CATALOG-6 will begin its main loop; the screen will turn green and the message "Ready for next disk." will appear. When the disk is in place, press the number matching the disk drive number. It is not necessary to press Enter. The screen will turn blue while the program reads the directory. The name of the current disk will be displayed, along with the amount of space used and available on that disk. When the

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EXTENDED BASIC—

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screen turns green, you may insert the next disk while the printer is printing the listing. When the program is ready for the next disk, it will beep and once again display "Ready for next disk." You may use all the system's disk drives in any order; just enter the drive number when prompted.

Each file in the listing will have an abbreviated file type, of DF, DV, IF, IV, or PR, consecutively standing for Display/Fixed, Display/Variable, Internal/Variable, Internal/Fixed, or Program. A reference list is printed at the top of each listing.

The program does not print out the file name and all the other descriptors as individual items, because TI Extended BASIC would force extra spaces before and after each variable. To fit six sets of file information into 132 columns, the file sizes must be printed immediately next to the protection asterisks, and the file types must be next to the record sizes. Even the use of the IMAGE statement will not allow

this. If less space is allowed than three characters for any number, even a single digit, the PRINT statement will just produce a string of garbage. To pack these numbers tightly together, lines 460 to 490 convert the numbers to strings and combine the strings to print all the file information as one string. The four fields shown in the IMAGE statement in line 430 are enough for two files. When PRINT runs out of IMAGE during printing, it reuses the IMAGE from the beginning, so the four fields are sufficient.

When you've read the last disk, and are ready to end the program, press BACK, or function 9, and CATALOG-6 will end.

CATALOG-6 uses a few of the special printer codes for condensed print, tight line spacing, and skipping the page perforation. It should run on any Epson-compatible printer, including the original TI printer, with only changes to line 90 — change the name of your default printer. CATALOG-6 will add "CRLF" to whatever name you specify. That option

allows the program to control the carriage returns separately from the line feeds, so that the column headings line may be underlined all the way across.

Before making any other changes, try the program; most printers use the Epson codes, and will not need changes. For some other printers, line 210 will have to be changed. Replace the codes that follow with the codes that your printer requires to perform the equivalent functions. CHR\$(27); CHR\$(48) starts the eight lines per inch option. CHR\$(15) turns on compressed print. CHR\$(27); CHR\$(78); CHR\$(4) sets the perforation skip size to four lines. Well, I've got a printout of my disks; all I need now is more space to store them in, and more time to run the programs. Those problems need more than a computer program; they need a whole new approach to desks and offices, preferably with storage space and clocks that can open windows into hyperspace.

CATALOG-6

```

90 PR$="RS232.DA=8.BA=4800"
! PRINTER NAME DEFAULT !168
100 ! CATALOG_6 !051
110 ! VERSION 3.0 !122
120 ! SIX COLUMN CATALOG LISTER; JLS 9/90 !200
130 DIM A$(127),J(127),K(127),B(127)!039
140 ON WARNING NEXT :: TYPE$(1)="DF" !055
150 TYPE$(2)="DV" !239
160 TYPE$(3)="IF" !229
170 TYPE$(4)="IV" !246
180 TYPE$(5)="PR" !250
190 CALL CLEAR :: CALL BLUE :: CALL TITLE !082
200 DISPLAY AT(9,1):"Printer Name?":PR$ :: ACCEPT AT(10,1)VALIDATE(UALPHA,DIGIT,"=.")SIZE(-20):PR$ !106
210 OPEN #1:PR$&".CRLF",OUTPUT,DISPLAY ,VARIABLE 132 :: PRINT #1:CHR$(27);CHR$(48);CHR$(15);CHR$(27);CHR$(78);CHR$(4)!210
220 W$="" :: DISPLAY AT(12,1):"Today's Date?" :: ACCEPT AT(13,1):P$ !227
230 IF SEG$(P$,LEN(P$),1)=""? " THEN P$=SEG$(P$,1,LEN(P$)-1):: W$="1" !057
240 PRINT #1:CHR$(10);CHR$(13);P$ !003
250 IF W$="1" THEN 220 !011
260 PRINT #1:CHR$(10);CHR$(13);" DF=DISPLAY/FIXED ... DV=DISPLAY/VARIABLE ... IF=INTERNAL/FIXED ... IV=INTERNAL/VARIABLE ... PR=PROGRAM" !187
270 DISPLAY AT(23,1):"Press Drive # for next disk.": " Press BACK when done." !243
280 CALL HCHAR(15,1,95,32):: CALL HCHAR(17,1,95,32):: CALL SCREEN(13)!154
290 DISPLAY AT(20,5)BEEP:"Ready for next Disk!" !097
300 CALL KEY(0,X,Y):: IF Y<1 THEN 300 ELSE IF X=15 THEN 530 !100
310 IF X<49 OR X>53 THEN 300 !124
320 DISPLAY AT(20,1):" " :: CALL SCREEN(5)!141
330 OPEN #5:"DSK"&STR$(X-48)&".",INPUT ,RELATIVE,INTERNAL !141
340 INPUT #5:A$(0),J(0),K(0),K(0)!055
350 PRINT #1:CHR$(10);CHR$(13):"DISKNAME=",A$(0);" AVAILABLE=";K(0);"USED=";J(0)-K(0);CHR$(10);CHR$(13)!126
360 DISPLAY AT(16,1):A$(0);TAB(11);"avail";K(0);TAB(21);"used";J(0)-K(0)!233
370 PRINT #1:RPT$("FILENAME SIZE P TYPE ",6);CHR$(13);RPT$("_",130)!051
380 FOR LOOP=1 TO 127 !148
390 INPUT #5:A$(LOOP),B(LOOP),J(LOOP),K(LOOP)!051
400 IF LEN(A$(LOOP))=0 THEN 420 !167
410 NEXT LOOP !208
420 CLOSE #5 :: CALL SCREEN(13):: DISPLAY AT(20,5):"You may swap disks now." !051
430 IMAGE ##### !071
440 FOR LOOP=1 TO LOOP-1 !03
(See Page 15)

```

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```

450 T=32*(LOOP-INT((LOOP-1)/
6)*6-1)+1 :: IF T=1 THEN PRI
NT #1:CHR$(10);CHR$(13)!165
460 D$=" "&STR$(K(LOOP)):: I
F ABS(B(LOOP))<>5 THEN D$=SE
G$(D$,LEN(D$)-2,3)ELSE D$="
" !193
470 IF B(LOOP)>0 THEN Y$=" "
ELSE Y$="*" !167
480 Q$=STR$(J(LOOP)):: Q$=SE
G$(" "&Q$,LEN(Q$),3)!181
490 PRINT #1,USING 430:A$(LO

```

```

OP),Q$&Y$&TYPE$(ABS(B(LOOP))
)&D$ !149
500 NEXT LOOP !208
510 PRINT #1:CHR$(10)!182
520 GOTO 290 !114
530 PRINT #1:CHR$(10);CHR$(1
3):: CLOSE #1 :: STOP !014
29505 SUB BLUE !149
29510 ! SWITCHES DISPLAY TO
WHITE ON BLUE; JLS 7/88 !230
29515 CALL SCREEN(5):: FOR L
=0 TO 14 :: CALL COLOR(L,16,
1):: NEXT L :: SUBEND !202
31530 SUB TITLE !240

```

```

31535 ! SHORT TITLE SCREEN !
181
31540 DISPLAY AT(2,10)ERASE
ALL:"CATALOG-6" :: CALL CHAR
(95,"00FF"):: CALL HCHAR(3,1
2,95,9)!233
31545 DISPLAY AT(6,3):"6 COL
UMN CATLOG PRINTER" :: CALL
HCHAR(7,5,95,23)!191
31550 DISPLAY AT(4,1):"Jerry
Stern : September 1990" !14
1
31560 SUBEND !168

```

TRIALS OF A C99 BEGINNER

It really isn't just the heat

By CHARLES E. KIRKWOOD JR.

Yesterday the temperature was 100 degrees.

Today it is 5 degrees cooler, 95 degrees, but it feels hotter.

It could be the humidity!

A temperature of 100 degrees and a relative humidity of 20 percent feels like 99 degrees, while a 95 degree temperature and a relative humidity of 80 percent feels like 136 degrees.

Recently there was an article with a table in the newspaper showing the relationship between the air temperature, the relative humidity, and the apparent temperature. This gave me the idea for this article — to write a program in which the input is the air temperature and the relative humidity and the output is the apparent temperature. Apparent temperatures are stored in a matrix with the air temperature as one axis and the relative humidity as the other. The units for air temperature are every five degrees from 70 to 120 degrees Fahrenheit and the units for relative humidity are every 10 percent. A linear interpolation function is written to interpolate for intermediate values.

Let us develop a formula for linear interpolation, given x , find r :

(largest value)	b	d
(given)	x	r (to find)
(smallest value)	a	c

$$\begin{aligned}
 \frac{x-a}{b-a} &= \frac{r-c}{d-c} \\
 r-c &= \frac{(x-a)(d-c)}{b-a} \\
 r &= \frac{(x-a)(d-c)}{b-a} + c
 \end{aligned}$$

$$\begin{aligned}
 r &= \frac{dx-cx-ad+ac+bc-ac}{b-a} \\
 r &= \frac{dx-cx-ad+bc}{b-a} \\
 r &= \frac{d(x-a)-c(x-b)}{b-a}
 \end{aligned}$$

Two functions are written, one for integer interpolation and the other for floating-point interpolation. These functions can be added to your Mathematical Functions Library.

```

/*INTEGER*/
/*INTERPOLATION*/
inter(a,b,c,d,x)
int a,b,c,d,x;
{
    int e,f,r;
    e=d*(x-a)-c*(x-b);
    f=b-a;
    r=divrnd(e,f);
    return(r);
}

/*FLOATING-POINT*/
/*INTERPOLATION*/
finter(a,b,c,d,x,r)
float a[],b[],c[];
float d[],x[],r[];
{
    float e[8],f[8];
    dexp(x,"-",a,e);
    dexp(x,"-",b,f);
    dexp(d,"*",e,e);
    dexp(c,"*",f,f);
    dexp(e,"-",f,e);
    dexp(b,"-",a,f);
    dexp(e,"/",f,r);
    return(r);
}

```

For example, suppose we wish to find the apparent temperature when the air temperature is 98 degrees F. and the relative humidity is 42 percent.

It is necessary to use linear interpolation three times to obtain

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TRIALS OF A c99 BEGINNER

(Continued from Page 15)

the result. The table at this point looks like this:

50%	107	U	120
H	AT		
40%	101	V	110
	95	T	100

First, interpolate between 107 and 120 to find U, then interpo-

late between 101 and 110 to find V, and finally interpolate between U and V to find AT. The apparent temperature, AT, is 108 degrees F.

This problem is an integer problem, so only integer interpolation is needed. The function `divrnd` divides two integers and rounds the result. I stored this function in the file `DIVRND`. This function is discussed in the July 1989 c99 article.

Heat and Humidity

```

/*HEAT AND HUMIDITY*/
/*Source: National Weather Service*/

#include DSK1.DIVRND
extern atoi(),printf();
main()
{
    int at[12][12];
    int rh,t,r,a,b,c,d;
    int x1,x2,y1,y2,r1,r2;
    char s[10],fc;
    at[0][0]=64;
    at[0][1]=69;
    at[0][2]=73;
    at[0][3]=78;
    at[0][4]=83;
    at[0][5]=87;
    at[0][6]=91;
    at[0][7]=95;
    at[0][8]=99;
    at[0][9]=103;
    at[0][10]=107;
    at[1][0]=65;
    at[1][1]=70;
    at[1][2]=75;
    at[1][3]=80;
    at[1][4]=85;
    at[1][5]=90;
    at[1][6]=95;
    at[1][7]=100;
    at[1][8]=105;
    at[1][9]=111;
    at[1][10]=116;
    at[2][0]=66;
    at[2][1]=72;
    at[2][2]=77;
    at[2][3]=82;
    at[2][4]=87;
    at[2][5]=93;
    at[2][6]=99;
    at[2][7]=105;
    at[2][8]=112;
    at[2][9]=120;
    at[2][10]=130;
    at[3][0]=67;
    at[3][1]=73;
    at[3][2]=78;
    at[3][3]=84;
    at[3][4]=90;
    at[3][5]=96;
    at[3][6]=104;
    at[3][7]=113;
    at[3][8]=123;
    at[3][9]=135;
    at[3][10]=148;
    at[4][0]=68;
    at[4][1]=74;
    at[4][2]=79;
    at[4][3]=86;
    at[4][4]=93;
    at[4][5]=101;
    at[4][6]=110;
    at[4][7]=123;
    at[4][8]=137;
    at[4][9]=151;
    at[5][0]=69;
    at[5][1]=75;
    at[5][2]=81;
    at[5][3]=88;
    at[5][4]=96;
    at[5][5]=107;
    at[5][6]=120;
    at[5][7]=135;
    at[5][8]=150;
    at[6][0]=70;
    at[6][1]=76;
    at[6][2]=82;
    at[6][3]=90;
    at[6][4]=100;
    at[6][5]=114;
    at[6][6]=132;
    at[6][7]=149;
    at[7][0]=70;
    at[7][1]=77;
    at[7][2]=85;
    at[7][3]=93;
    at[7][4]=106;
    at[7][5]=124;
    at[7][6]=144;
    at[8][0]=71;
    at[8][1]=78;
    at[8][2]=86;
    at[8][3]=97;
    at[8][4]=113;
    at[8][5]=136;
    at[9][0]=71;
    at[9][1]=79;
    at[9][2]=88;
    at[9][3]=102;
    at[9][4]=122;
    at[10][0]=72;
    at[10][1]=80;
    at[10][2]=91;
    at[10][3]=108;
    puts("\nInput Air Temperature ");
    t=atoi(gets(s));
    puts("\nFahrenheit or Centegrade? (F/C)");
    fc=getchar();
    if(fc=='C')
    {
        b=9*t+160;
        c=5;
        t=divrnd(b,c);
    }
    puts("\n\nInput Relative Humidity ");
    rh=atoi(gets(s));
    x1=(t-70)/5;
    x2=x1+1;
    y1=rh/10;
    y2=y1+1;
    c=at[y1][x1];
    d=at[y1][x2];
    a=x1*5+70;
    b=x2*5+70;
    r1=inter(a,b,c,d,t);
    c=at[y2][x1];
    d=at[y2][x2];
    r2=inter(a,b,c,d,t);
    a=y1*10;
    b=y2*10;
    r=inter(a,b,r1,r2,rh);

```

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BASIC Assembly

Hiding Assembly in an XB Program

By BARRY A. TRAVER

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To my mind, one of the most exciting programming developments for Extended BASIC is the ability to "embed" assembly routines within an XB program. As a result, assembly code is loaded much more quickly than could be the case with the old CALL INIT :: CALL LOAD(DSKn.filename) approach. In addition, fewer files are usually needed, since what earlier had to be put in a DIS/FIX 80 file can now often be "hidden" in the XB program itself.

The result is what seems to be an ordinary XB program, except that when it is run it shows the speed and/or power of the assembly routines contained in the program. That is, what seems to be an ordinary XB program shows itself to be no ordinary XB program at all!

How is this accomplished? Well, there are a number of utilities that can accomplish this goal, including Barry Boone's helpful program SYSTEX. For a number of reasons, however, my own personal favorite is Todd Kaplan's program ALSAVE. First, ALSAVE is public domain so that it can be freely used without any restrictions. Second, source code for ALSAVE has been made available so that the program can be easily modified if so desired (e.g., Tom Freeman has modified it so that it can work with AORG'd code rather than merely with the more usual relocatable code). Third, ALSAVE has been extensively tested and refined (particularly throughout various issues of the Genial TRAVeLER) so that it has proven

itself extensively to be an adaptable, dependable, easy-to-use technique.

Important: you don't really have to understand how ALSAVE works in order to benefit from it. All you have to do is follow a few simple steps. But for those who may be interested, let me see if I can give a layman's explanation of what is happening with ALSAVE.

Accessing assembly language routines from Extended BASIC requires that you have a 32K memory expansion (or some equivalent) in your system. This 32K is divided into two parts: 24K of "high mem" (which is essentially where your XB program is stored) and 8K or "low mem" (which is where your assembly language routines are placed). This is the normal arrangement for things.

When you load in an XB program, the ordinary way is to load in a program image file with OLD DSKn.program, a process which doesn't take very much time. The XB program then sits in "high mem." The traditional way, however, to load in assembly routines is to use CALL INIT :: CALL LOAD("DSKn.filename), a procedure which can often be very time-consuming. When the process is complete, the assembly routines sit in "low mem."

ALSAVE works, in a sense, by "tricking" the computer, by "kicking" the assembly routines temporarily "upstairs" so that the computer thinks that the assembly routines are part of an XB program. This is accomplished with a CALL LINK("SAVE"). Then — when the XB program is saved to disk in the usual way with a SAVE DSKn.program — the

assembly routines are saved right along with the XB program. Since the assembly routines were "upstairs," the computer thinks that the assembly routines are part of the XB program.

What is thus saved is a combination of XB program and assembly routines, but the computer doesn't realize that. When you load the combination back into memory with an OLD DSKn.program, it loads in quickly, unlike what happens when you do a CALL INIT :: CALL LOAD("DSKn.filename) to load in DIS/FIX 80 assembly code. So far so good: the XB program and the assembly routines can be loaded in together, and the procedure takes place very quickly.

There's one remaining problem, however: the assembly routines are now "upstairs" (in normal XB program space in "high mem") and they belong "downstairs" (in normal assembly storage space in "low mem"). Well, just as CALL LINK("SAVE") earlier put the assembly routines "upstairs," we now use a CALL LINK("ALSAVE") to put them back "downstairs" where they belong in order to work normally. It takes only a second or so for this CALL LINK("ALSAVE") to be implemented (even if 8K of assembly routines need to be moved!).

Whether you're able to follow the explanation of the procedure or not, it does work (and it's nice to know that it works, whether you understand it or not!). To prepare your basic "hybrid" code, just enter the series of commands described in Fig. 1 (or a reasonable variation thereof):

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```

if(fc=='C')
{
    b=5*(r-32);
    c=9;
    r=divrnd(b,c);
}
printf("\nApparent Temperature %d\n",r);
}

```

```

inter(a,b,c,d,x)
int a,b,c,d,x;
{
    int e,f,r;
    e=d*(x-a)-c*(x-b);
    f=b-a;
    r=divrnd(e,f);
    return(r);
}

```

BASIC ASSEMBLY—

(Continued from Page 17)

These seven simple steps are all that are required. The purpose of the file DSK1.ALLOADM (a single XB program line) is simply to permit your XB program to access a routine to put the assembly routines back "downstairs" where they belong.

The assembly language base in XB form that you have created can in most ways be modified as any normal XB program. You can add lines, delete lines, and edit lines without harming the embedded assembly routines. There is one thing that you need to avoid, however. You must not RESequence the program, since that may have deleterious effects (not always, but often enough to stay away from that command!). Now, you can proceed to just "expand" your ALBASE by adding program lines until you have a complete "hybrid" program (which you would thereupon save to disk under whatever name you like when you're done), but I prefer a different approach.

Here's how to create a complete "hybrid" program in what I consider to be a better way. With your assembly routines loaded into memory, write from scratch (and then perfect) your XB program, and save your XB program to disk in MERGE format, e.g., by entering SAVE DSKn.XBSTUFF, MERGE. Then load into memory DSK1.ALBASE the way you would normally load an XB program, i.e., with OLD DSK1.ALBASE, combine everything by entering MERGE DSKn.XBSTUFF, and save the whole thing to disk with SAVE DSKn.WHOLETHING (or whatever you want to call it). Note that in this procedure, you have to load your ALBASE file into memory first and then MERGE in the XB program part: you can't do it the other way around.

The program ALSAVE/MKR is an XB program that will create the 6-sector DIS/FIX 80 file ALSAVE for you (be

sure that you type in ALSAVE/MKR very carefully!), and you will also need the 2-

Figure 1

- (1) CALL INIT
- (2) CALL LOAD("DSK1.READ/O")
CALL LOAD("DSK1.WRITE/O")
(or whatever assembly routines you want to include)
- (3) CALL LOAD("DSK1.ALSAVE")
- (4) CALL LINK("SAVE")
- (5) 100 REM
(probably not necessary, but it doesn't hurt to have!)
- (6) MERGE DSK1.ALLOADM
- (7) SAVE DSK1.ALBASE
(or whatever you want to call your assembly base in XB form)

sector ALLOADM MERGE file included with this article. After you type in ALLOADM, then save it to disk in MERGE format by entering the command SAVE DSK1.ALLOADM, MERGE.

I've used this approach in many of the programs I've written - including the games JUMPAPEG, SHUTOUT, and NIMROW, among others - and it works

Figure 2

- Create ALBASE:
- (1) CALL INIT
 - (2) CALL LOAD("DSK1.WINDOW/O")
 - (3) CALL LOAD("DSK1.ALSAVE")
 - (4) CALL LINK("SAVE")
 - (5) 100 REM
 - (6) MERGE DSK1.ALLOADM
 - (7) SAVE DSK1.ALBASE
- Create XBSTUFF:
- (8) OLD DSK1.WINDOWDEMO
 - (9) 110
130
140
(thus deleting lines 110, 130, and 140)
 - (10) SAVE DSK1.XBSTUFF, MERGE
- Combine to create new WINDOWDEMO:
- (11) OLD DSK1.ALBASE
 - (12) MERGE DSK1.XBSTUFF
 - (13) SAVE DSK1.WINDOWDEMO

like a champ. As you build up a library of useful assembly language routines, I would suspect that you will be writing more and more hybrid programs yourself,

i.e., programs that combine the ease of XB programming with the power and speed of assembly routines.

To increase your assembly repertoire, I'll be providing some additional string routines in my next column. I had originally planned to do so in this article, but decided that it might distract from your becoming thoroughly familiar with ALSAVE, which I consider crucial to learning how to coming XB and assembly in an efficient way. Instead of giving you source code for additional assembly routines at this point, I'd like to use my remaining space this month showing how to apply ALSAVE to routines previously published in this series.

First, let's embed the WINDOW assembly routine in the XB WINDOWDEMO program. (See page 27 of the June 1990 issue of MICROpendium.) See Fig. 2 for the commands you need to enter.

That's all there is to it!

My previous article included a routine to change lower case letters in a string into caps. Included with this article is a program called CAPS/DEMO, which makes

use of that routine to process a DIS/VAR 80 file to make a new file that is all capitals. Using the previous series of steps as a guide, See if you can embed the CAPS assembly routine in the XB CAPS/DEMO program! (You would, of course, omit step 9, since it is not applicable in this case.) When you have succeeded at that, then try to figure out how to do the same thing with the CLEAN assembly routine also included in the article before this one.

The important thing here is to go beyond merely reading these articles to actually trying out the programs and techniques (and then modifying them as you see fit). As in learning how to drive a car, here too reading is not enough (and, for that matter, often when you try something out, what you've read begins making a lot more sense than it may have earlier). If you run into trouble, you can phone me at

(See Page 19)

BASIC-ASSEMBLY—

(Continued from Page 18)

215/483-1379 (as long as you don't call me collect!). (Warning: I'm not very good at answering questions by written correspondence, so a phone call is normally better.) In the meantime, keep on compuTIn'!

P.S. In the June 1990 issue of MICROpendium, page 27, middle column, SRA R9.8 should be changed to SRL R9.8. Since the number in R9 is positive, it'll work either way, but my using SRA instead of SRL was an unconscious "typo" on my part.

TECHNICAL(?) NOTES

When typing in ALSAVE/MKR, you must include the correct number of blank spaces (i.e., eight spaces) near the beginning of line 120 for it to create an ALSAVE that will work. Since the line numbers at the end of each line of a DIS/FIX 80 uncompressed assembly file ("0001", "0002", etc.) do not seem to be required for such a file to work, you could safely delete I\$=STR\$(I) as well as TAB(77);RPT\$("0",4-LEN(I\$))&I\$ from line 110 in ALSAVE/MKR. Similarly, nothing more than a ":" on the last line of a DIS/FIX 80 file seems needed, so the blank spaces and the "99/4 AS" in the last DATA statement in line 220 of ALSAVE/MKR can be removed so that the last DATA item is simply ":". By the way, if you've never loaded a DIS/FIX 80

file into TI-Writer to look at, try it with ALSAVE after you create the file. You may find it interesting!

ALSAVE/MKR

```
100 ! ALSAVE/MKR (C) COPYRIG
HT 1990 by Barry A. Traver
110 OPEN #1:"DSK1.ALSAVE",FI
XED :: FOR I=1 TO 13 :: I$=S
TR$(I):: READ M$ :: PRINT #1
:M$;TAB(77);RPT$("0",4-LEN(I
$))&I$ :: NEXT I :: CLOSE #1
120 DATA "00000          9FF30
B0300B0000B04E0B83C4BC80BBA0
30B02E0BA010B02007F2F5F"
130 DATA "9FF42BFF88B0201B20
00B0202B0004B06A0BFF80BC020B
FF92BC060B20047F289F"
140 DATA "9FF58BC0A0BFF90B06
A0BFF80BC020BFF96B0201B24F4B
COA0BFF94B06A07F1F6F"
150 DATA "9FF6EBFF80B7820B83
7CB837CB02E0B83E0BC2E0BA030B
045BBCC70B06027F21FF"
160 DATA "9FF84B16FDB045B9FF
889FF8A9FF8C9FF8EBAA559FF909
FF929FF947F295F"
170 DATA "9FF969A0109A0309A0
32B0300B0000BC80BBA030B02E0B
A010B0200B20007F2EDF"
180 DATA "9A042B0201BFF88B02
02B0003B06A0BFF80B0202B4000B
C020B2004B60807F2E1F"
190 DATA "9A058B0201BFF30B60
```

```
42BC801BFF92B0912BC802BFF90B
06A0BFF80B02007F260F"
200 DATA "9A06EB24F4BC0A0B20
02B6080BC060BFF92B6042BC801B
FF96B0912BC8027F25CF"
210 DATA "9A084BFF94B06A0BFF
80BC020BFF96B0220BFFF0BC800B
8330BC800B83327F22FF"
220 DATA "9A09AB0600BC800B83
86B0460BFF707F924F", "6A032SA
VE 7FD4EF", ":"          99/4 AS
"
```

ALLOADM

```
10 CALL INIT :: CALL LOAD(81
96,63,248):: CALL LOAD(16376
,65,76,83,65,86,69,255,48)::
CALL LINK("ALSAVE")
```

CAPS/DEMO

```
100 ! CAPS/DEMO (C) COPYRIGH
T 1990 by Barry A. Traver
110 INPUT "INPUT FILE? ":I$
120 OPEN #1:I$,INPUT
130 INPUT "OUTPUT FILE? ":O$
140 OPEN #2:O$,OUTPUT
150 IF EOF(1)THEN 200
160 LINPUT #1:A$
170 CALL LINK("CAPS",A$,B$)
180 PRINT #2:B$
190 GOTO 150
200 CLOSE #1
210 CLOSE #2
```

T and J Software releases Hardback

T and J Software has released **Hardback** for both the 99/4A and the Geneve 9640.

According to Tom Freeman of the company, Hardback will back up all or any portion of a hard drive running under the Myarc Hard and Floppy Disk Controller card to another hard drive (or to a free section of the same drive). The entire tree structure is preserved, as are time/date stamps, Freeman says.

The operation is done in one pass. As the program uses direct file copies, more than one drive can be backed up to different sub-directories on a larger capacity drive, Freeman says.

Cost of the program is \$15, which includes shipping and handling. California residents add 6.75 percent sales tax.

Other programs available from T and J Software are DISKASSEMBLER Ver. 2 (reviewed August 1990 MICROpendium) for \$22.96 and The Bugger, an advanced debugging tool which requires a terminal or a second computer acting as a terminal, for \$18.50.

For information or to order, write T and J Software, 515 Alma Real Dr., Pacific Palisades, CA 90272.

Exhibitors invited to Chicago Faire

Booths for vendors at the Chicago 99/4A Faire Nov. 3 are available at \$75 per booth space. A limited number of systems are available on a "first-come, first-serve" rental basis for \$15 each for each basic TI99/4A system provided. Any vendor needing a piece of equipment that cannot be transported, needs to notify Hal Shanafield, TI-Faire Manager, 2515 Marcy, Evanston, IL 60201-1111, (708) 864-8644 (2-10 p.m.).

The Faire will be held at the Holiday Inn, 3505 Algonquin Rd., Rolling Meadow, Illinois. Admission is \$4. It will be followed by the Milwaukee TI-Faire Nov. 4 at the Quality Inn, 5311 S. Howell Ave., Milwaukee, Wisconsin. For information on the Milwaukee TI-Faire, contact Gene Hitz, 4122 N. Glenway, Wauwatosa, WI 53222, (414) 535-0133.



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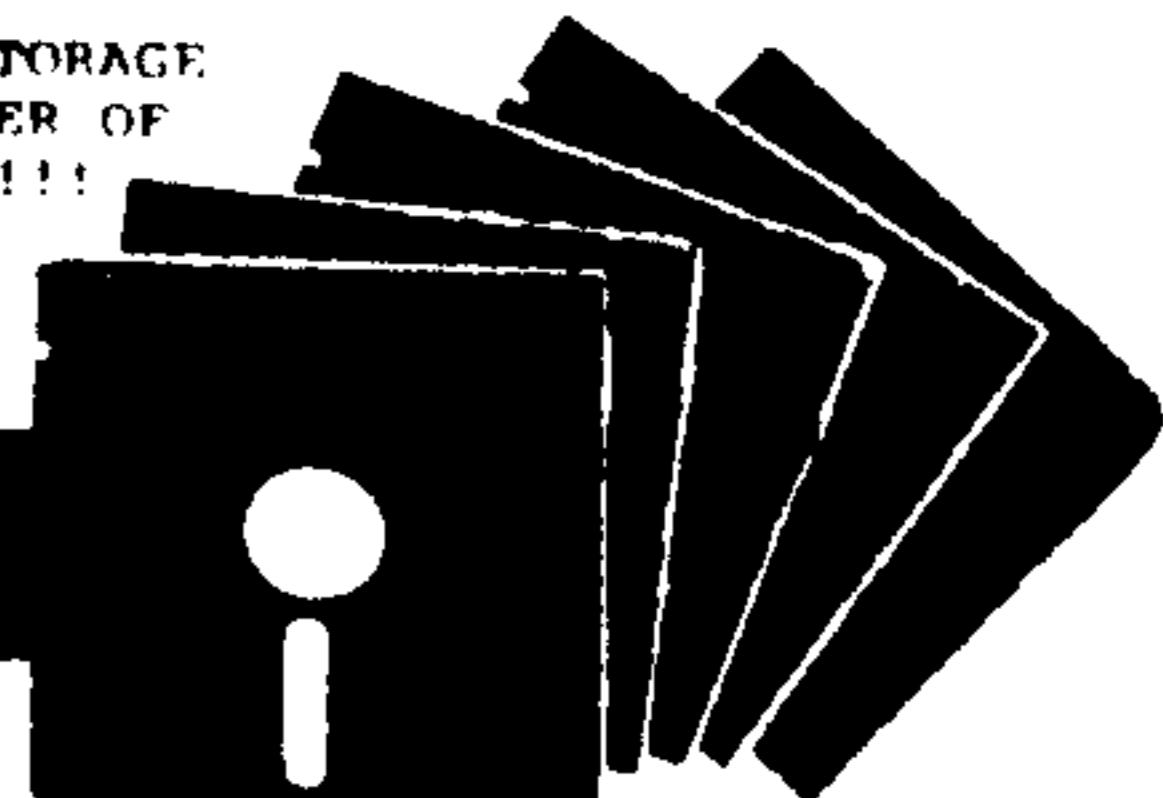
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**#5 ORIGINAL TI SALES DEMO DISK
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This disk is packed full of assorted files of all types. Graphics, speech etc. Contains complete TI-TREK game for Speech Editor or TE-II module.

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#6. EXBASIC MUSIC

A two disk side collection of music & graphics that we consider some of the best.

#7. SPACE SHUTTLE MUSIC/GRAPHICS

One of the real outstanding examples of programming. This disk has it all. Great graphics, music, and continuity. A real salute to the space program. It is almost like watching a movie!

#8. LOTTO PICKER

This program randomly generates numbers for use in the various state lotto games and even runs a simulated lotto game. Easy to modify for pick 6 etc. games. A great learning and fun disk.

#9. MONA LISA PRINT OUT

This disk prints out a near photo quality picture of that lady with the classic smile. We understand it was made by digitizing the original with a super powerful computer and converting the output to run on the TI-99/4A. Impresses everyone who sees it! Requires Epson printer compatibility.

#10. GOTHIC PRINT

This disk lets you type out a phrase on the screen and then print it out in gothic (Old English) style. Looks like hand-lettered calligraphy. Use for invitations, announcements and business cards.

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This disk was actually originally sent to TEX-COMP as a greeting from master programmer Ray Kazmer. It was just too good not to share! One of the best examples of computer animation and graphics you will see on any computer!

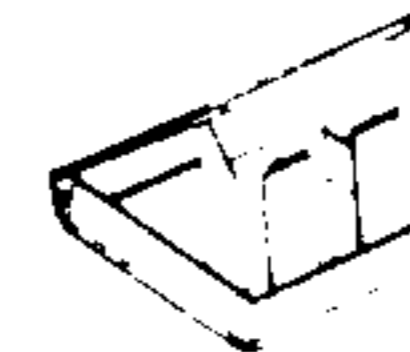
#12. TI-99 OLOPY

This great piece of programming actually simulates and plays the famous board game. For legal reasons we cannot name the game but "do not pass Go! but go directly to Jail!"

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#16. SIDEWAYS PRINTOUT

This program allows you to print out the material from your printer sideways. Great for spreadsheets, banners and large graphics. Second side contains some new enhancements for Multiplan not available on the TI upgrade.

#17. TI FORTH DEMO

This demo disk was released by TI to show the power of Forth. Fantastic music and graphics. Ed/Assem and 32K required!

#18. TI DIAGNOSTIC

This program loads into the Mini-Memory module and checks out your entire system. Much better than disk based diagnostics that cannot be used if a problem in the disk system is at fault. Complete documentation on second side.

#19. TI WRITER/MULTIPLAN UPGRADE

This disk released by TI adds real lower case to your TI Writer, speed to Multiplan and other enhancements. Easy to use., just substitute new files for old! Instructions included.

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This self contained prize winning program loads and runs in Exbasic and has all the features found in a professional accounting system. Complete with documentation and a second disk side with report generating programs.

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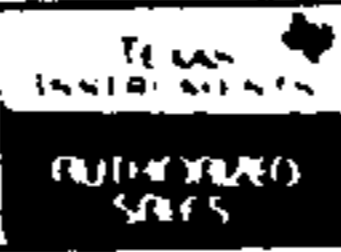
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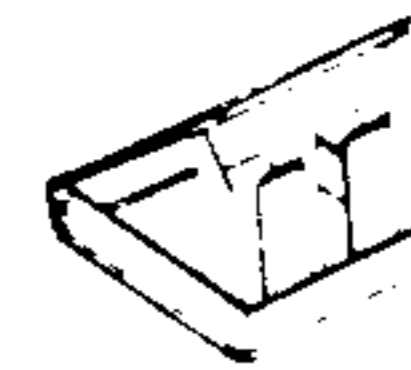
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Enter your answers to a group of computer asked questions and this program then writes you a last will and testament. Now you can leave your TI-99/4A to your favorite nephew. Works with any printer. Appears legal in all states but better check that out!

#24. ENGINEERING CALCULATIONS

A two sided computer handbook of dozens of the most often used engineering and technical formulas. A real time saver. Does conversions, calculations and even designs electrical circuits. A must for anyone whose profession or hobby involves scientific calculations. Even has medical and communications applications.

#25. MEDICAL ALERT

This disk contains many menu accessible files covering most everyday medical emergencies. A good "what to do until the doctor or paramedic comes" guide. Well written and organized. Could very easily save a life!

#26. R RATED GAME

It was bound to happen. A talented (but demented) programmer in Germany wrote an Invaders type game but with most unusual guns and targets. Definitely not what you would find at your neighborhood arcade. Not only a great party game but some great programming. You must be over 13 to order this one!!

#27. KIDS LEARNING

An educator in Georgia put this two sided disk collection of educational programs together. Contains great material. Math, geography, reading improvement, and even IQ testing. All high quality programs for kids of all ages.

#28. LOADERS AND CATALOGERS

We put together a collection of the best programs that catalog and load a group of programs on a disk. Just try them, pick the one you like and transfer it to another disk with the file name LOAD and you are in business.

#29. LABEL MAKER I

Two great programs for making custom labels for disks, addresses video tapes or any other application. Even contains a graphic display of the TI-99/4A console. Now you can create custom labels of any number by just typing in the lines as you want them. Uses standard tractor labels.

#30. HOUSEHOLD BUDGET PRINTOUT

With this disk you print out the data you have stored with the TI HBM Module. HBM is a great module that can be used for many home and small business applications but TI forgot to include a printout function. This program comes with full instructions and we are sure that your HBM Module will now start being used. Fantastic programming job.

#31. MORSE CODE TRAINER DISK

This disk has everything you need to learn and practice Morse Code for the various FCC license exams. It also is great for scout groups and school "ham" clubs for group training and merit badge qualification. Professional quality.

#32. EXBASIC XMAS MUSIC

Two disk sides full of high quality xmas music that can be played throughout the holiday season and then used as a learning tool since it contains wonderful arrangements and graphics. Autoloading and menu driven.

#33. CHECKERS & BACKGAMMON

A collection of great checkers and backgammon games for the TI-99/4A. These are professional in quality and will keep you busy for hours.

#34. SOLITAIRE & SCRABBLE

Another collection of classic games for the TI-99/4A. Exbasic & 32K req.

#35. PROGRAMMING AIDS & UTILITIES I

A collection of some unusual programs of interest to programmers. One program shows a group of opening title displays, another is a cross reference program as good as any of the commercial ones, plus a great disk management utility.

#36. STRICTLY BUSINESS

A collection of various programs for evaluating loans, calculating interest, and other financial items such as return on investment and security performance. Two disk sides filled with financial and business related programs.

#37. LAPD COOKBOOK

This unofficial police cookbook was put together by one of our boys in blue who is also a gourmet chef. (Yes, it contains jailhouse chili) Over 50 great recipes from soup to nuts on two disk sides and each separate side can be called up on screen or printer in exbasic from a menu. As good as any of the new PC computer cookbooks we have seen.

#38. GREAT 99/4A GAMES VOL. I

A collection of professional games in assembly and exbasic that all load from a menu in exbasic. Includes a great ski game where you dodge the trees in a fast downhill run. We have included only the best.

#39. GREAT 99/4A GAMES VOL. II

Still more of the great ones from all over the world. The quality, graphics and speed of many of these games will make you wonder why they were never released commercially.

#40. ARTIFICIAL INTELLIGENCE

This disk contains the famous computer program "Eliza" where you type in a question or a problem you are having and "Eliza" helps you find the solution. Also contains one of the better bio-rhythm programs so you can analyze all your emotional problems at one sitting.

#41. VIDEO GRAPHS MODULE BACKUP DISK

This disk is a backup of the discontinued Video Graphs Module from II. For legal reasons, it can only be purchased for backup use by owners of the original module. Do not order UNLESS you have the original module and intend to use this disk only for backup purposes. Exbasic autoloading.

#42. FUNNELWEB FARM UTILITY

You heard about this one, now direct from Australia is the latest version of this fantastic utility that puts everything at your command. From one program you can access word processing, editor assembler, telecommunications and just about everything else. A freeware program complete with documentation on a second disk side.

#43. BEST OF BRITAIN, VOL I

Now for the first time, a collection of the best 99/4A games Britain has to offer including the famous "Billy Ball" series of arcade games. Great graphics, action and excitement.

#44. LABEL MAKER I GRAPHICS

A disk filled with graphics for the Label Maker I disk (#29). Dozens of great graphics for custom labels!

#45. BEST OF BRITAIN, VOL II

This disk contains an outstanding 3-D graphics adventure game for the TI-99/4A. Carfax Abbey lets you actually move through a four story mansion complete with bats and vampires. You actually are placed in each room and go up and down stairs and through secret panels. Legend of Zelda...look out!

#46. SUPER TRIVIA 99

A great trivia game for 1 to 4 players with great questions and capability to add your own and print out the files. This one is a real challenge.

#47. INFOCOM RAPID LOADER

If you have Infocom games this is for you. Loads all TI Infocom games in only 28 seconds and permits new screen colors and improved text display. Comes with all documentation on disk.

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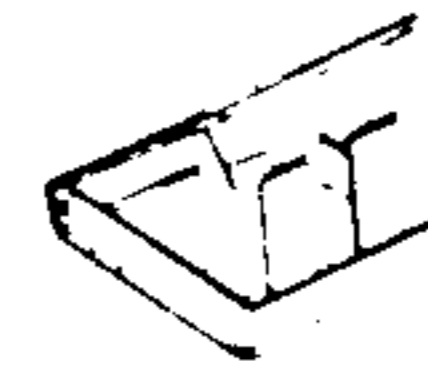
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#48. GHOSTMAN (from England)

This Pacman/Munchman type game starts at a slow pace and slowly speeds up to a break-neck pace. A totally new experience.

#49. DEMON DESTROYER (from France)

This great assembly game starts where Invaders leaves off. Add features like descending aliens and closing walls. Hours of great arcade action.

#50. OH MUMMY (from Germany)

Move through the chambers of a Pyramid in search of hidden treasure. Fantastic graphics and great entertainment.

#51. BERLIN WALL (from Canada)

This game requires a mine field to be crossed before escaping from E. Berlin. Good graphics and a real challenge.

#52. ANIMATION 99 (from Germany)

THIS IS THE ONE!!! A demo disk filled with computer animation routines like you have never seen before on any computer. See famous cartoon figures move with more realism than on Sat. morning TV. This disk received a standing ovation when previewed at a local users group. We have even included instructions how to do it yourself on the second disk side. This one is a show stopper!!!

#53. HACKER/CRACKER

A collection of disk copying programs that copy TI disks by tracks. If one of these can't copy a protected disk nothing will. We included a collection of the very best ones including both TI and CorComp compatible. These programs require 2 disk drives and 32K of memory.

#54. ASTRONOMY

This program from Australia plots the heavens and teaches you about the solar system. A great learning and reference tool. Exbasic and 32K required. Don't confuse this one with our Astrology demo. They are not the same...ask Nancy!

#55. SCREEN DUMP

This program allows you to dump disk and even module programs to a Star/Epson compatible printer. Comes with easy to follow plans to build a load interrupt switch which is needed to dump module programs. This dump program by Danny Michael is considered the best of the bunch! Complete with documentation.

#56. SPREAD SHEET

OK, it's not Multiplan but it works great and handles many spread sheet applications. A great way to learn to use spread sheet software. Comes with full instructions and documentation.

#57. TELCO

Considered one of the best data communications programs for the TI-99/4A. Complete with documentation.

#58. PR BASE

The alltime most popular and widely used data base program for the TI-99/4A. A freeware program that is widely supported and updated.

#59. GRAPH MAKER

A collection of the best programs for producing graphs and charts from your data. Exbasic and printer.

#60. FREDDY

A fantastic game where you guide the hero through underground passages filled with danger. Nintendo quality, great graphics and fast action. One of the best we have ever seen!!!

#61. THE MINE

A fast action game from F.R.G. that will keep you going for hours. Many screens and skills required.

#62. DISK MANAGER II MODULE BACKUP

The complete TI Disk Manager II on Disk. For legal reasons it is only available to owners of the original module for backup use.

#63. ASTROBLITZ/MAZOC

A pair of great games that continue where Parsec and Munchman leave off. Imagine Parsec with enemy space craft coming from in front and in back of your ship!!!

#64. MAJOR TOM/SPACE STATION PHETA

A pair of great space games. These two are going to keep you in front of the 99/4A for hours. Great!

#65. PERFECT PUSH

An all new space game where you assemble and launch a rocket ship in outer space while avoiding a space monster. This one is professional in every way...graphics, speed and action!!!

#66. HEBREW TYPEWRITER

This program converts your TI-99/4A keyboard into a typewriter that displays Hebrew letters on the screen. Can also be printed when used in conjunction with screen dump program (included). Great for religious training or making your copy of the dead sea scrolls or ten commandments!

#67. GENEALOGY

Now you can set up your family tree and store or print out the records. Great for keeping track of family relationships and records.

#68. CHESS

The original computer chess game Sargon has been reprogrammed for the TI-99/4A. Now play chess with your computer. Documentation included. Exbasic autoloader.

#69. COMPUTER PLAYER PIANO/KEYBOARD CHORD ANALYSIS

A unique music program which displays a piano on the screen and actually plays your selections.

#70. TI RUNNER II

The very latest (and best) "runner" game based on TI Runner and Star Runner. Great action, graphics and entertainment.

#71. KIDS LEARNING II

Two more disk sides loaded with the best in educational programs. Kids improve their math, spelling and comprehension skills while having fun.

#72. CERBERUS

Fantastic space game from Germany. Pilot your ship through narrow and crooked channels in space without colliding. Great graphics and music.

#73. CRYPTO (gram)

One of the best word games we have seen for any computer. Set up like a TV game show with great screen displays.

#74. LABEL MAKER II

Make labels for holidays and special events. You compose the text and select the resident graphics for the occasion.

#75. DISK CATALOGER

Now you can organize your disk files with this great utility. Files, sorts, and prints your records. Easy to use.

#76. PROGRAMMING AIDS AND UTILITIES II

A collection of very useful material. Includes a program to convert basic to exbasic so your old basic programs will load & run in exbasic, even with graphics. Also includes two on screen diagnostic programs to test your keyboard and processor. A great merge utility is also on this disk.

#77. MICROdex 99

A database program by Bill Gaskill which files and retrieves data such as magazine articles. A sample database is included.

#78. ARTCON+ BY RAY KAZMER

ATTENTION GRAPHX AND TI ARTIST USERS!!! This program lets you convert Exbasic graphics to TI Artist and Graphx pictures. Also contains a new MAC-RLE (2) for converting from Artist to Graphx.

#79. DM1000 V3.5

One of the most popular disk managers for the TI-99/4A. Originally a rip-off of the CorComp manager, it has been improved and refined by talented users all over the world. This version is deemed the most reliable to date and is far advanced over the TI Disk Manager II. Distributed by permission from CorComp.

#80. BIRDWELL DISK UTILITY

A must if you are into programming and software development. Besides being a great disk manager, it has provision for copying sectors, comparing files and is menu driven. Complete with documentation.

#81. HOME ACCOUNTING SYSTEM

A complete family & small business accounting system including a checkbook manager, budget analysis, mailing list and an inventory program. Complete with documentation. Easy to modify for specific needs.

#82. CROSSWORD PUZZLES

This program from Australia creates a different puzzle each time you run it. Self contained with definitions and vocabulary taken from a leading crossword dictionary. Great crossword fun.

#83. HOME APPLICATION PROGRAMS

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#84. GALACTIC BATTLE/SPY ADVENTURE

A pair of great commercial quality games from EB Software of TI Runner fame. Galactic Battle is a space "trek" type strategy game for one or more players. Spy Adventure is an adventure game that will keep you guessing for hours.

#85. AUTOBOOT UTILITY

This utility which can be installed on a disk loads and runs or displays most files. Now you can have a disk with exbasic programs, Editor Assembler programs and TI Writer files and run or display them all from exbasic.

#86. COLUMN TEXT III V3.2

A very useful utility for printing TI Writer and 99 Writer II files in separate spaced columns. Saves hours in producing a newsletter. Complete with documentation.

#87. ARCHIVER III

This utility allows you to "pack" or combine several files into one for space utilization. A number of boards are sending files packed to save transmission costs. This utility will let you pack and/or unpack these files.

#88. AUSSIE GAMES VOL 1

A collection of games from our friends down under. Includes a great card game and board game. Hours of fun and entertainment. Includes Matchmaker & TILLO.

#89. PROCALC

This is an on screen calculator for decimal/hexidecimal conversions and much more. A must for the serious programmer.

#90. JET CHECKBOOK MANAGER

This checkbook manager is considered the ultimate with every feature you can think of for keeping track of your checking account and keeping records of your spending for budget and tax purposes. Complete with documentation.

#91. "THE MAZE OF GROG"(St. Valentine)

Ray Kazmer has created a great maze game with fantastic graphics and the characters from his now legendary "Woodstock" disk. Fun for all!!!

#92. HOUSEHOLD INVENTORY

Written by 99/4 programming great Charles Ehninger, this prize winner originally sold for \$59.95. Keeps track of household, business or personal items by category and provides automatic updating for inflation etc. A must for tax and insurance records!

#93. THE 1990 KBGB GIRLIE CALENDAR

This latest offering from programming master Ken Gilliland prints out a jumbo 12 month calendar with a knock-out centerfold pinup for each month. If you like our #14 Figure Study disk, you will flip over this one. For Adults Only!! Exbasic & d/m printer.

#94. GREAT 99/4A GAMES VOL. 111

If you have seen vols. 1 & 2 of this series you know we only provide the very best. This latest volume is also filled with a collection of great ones!

#95. WEATHER FORECASTER

The weather predictions are amazingly reliable and accurate! A great game "Lawnmower" and a mini database are also included to make this disk a fantastic value.

#96. STATISTICS & SORTING

Two great assembly utilities by John Clulow. STAT is a set of statistic routines for use in exbasic. SORT allows sorting by two separate fields and a choice of two types of sorts.

#97. MEMORY MANIPULATOR

This powerful utility lets you explore the entire memory in your 99/4A system and take apart what you find. User friendly!

#98. DAYS OF EDEN & DOORS OF EDEN

Two bible games (non-fiction) that work with the TI Adventure Module.

#99. GREAT 99/4A GAMES VOL. IV

This disk features the works of J. Peter Hoddie. All of these games are of commercial quality and well worth the donation requested!

#100. ASSULT THE CITY (T. of DOOM)

An exciting game for use with the Tunnels of Doom module. Several Exbasic bonus games are included.

#101. ENCHANCED DISPLAY PACKAGE

This screen enhancement utility lets you do 40 columns, windowing, reverse scrolling, clock/alarm, and a whole host of other great tricks in exbasic. Fully documented.

#102. COLOSSAL CAVES ADVENTURE

This classic adventure now available for the 99/4A is what led to the Zork series. Hours of text adventuring.

#103. SORGAN, THE 99/4A ORGAN

This program which is currently selling for big bucks on module turns your 99/4A into an electronic organ. Sound effects, different instruments and voices, chord forms, color graphics with complete control of all.

#104. C99 COMPILER AND LIBRARY

This two-sided (flippy) disk gets you into C programming with your 99/4A. Comes with a great collection of utilities such as text & graphics. (E/A)

#105. KING'S CASTLE+

A great arcade style assembly game formerly offered on module. Also includes an EB "Trek" game and a collection of sprite & graphics from Tigercub's Jim Peterson.

#106. QUEST (Dungeons & Dragons)

One of the best D&D games around! You must destroy the Dark Lord to free your homeland! Complete with documentation on disk.

#107. STAR TREK MUSIC ALBUM

Ken Gilliland's music and graphics version of the TV theme and the three motion pictures. (Exbasic)

#108. FUNLPLUS BY JACK SUGHRUE

Fantastic disk packed with Funnelweb (#42) templates, utilities and prog. to augment and configure Funnelweb. Unbelievable collection of fantastic aids to make the best even better!

#109. TI-WRITER MINI MANUAL

This disk prints out a five page TI Writer manual with everything you need to know to use TI Writer or the many clones such as 99Writer II. Additional aids for using this powerful word processor are included.

#110. DISK + AID

A powerful disk sector editor formerly sold for \$20. Menu Driven and easy to use.

#111. POP MUSIC & GRAPHICS

This exciting disk from Germany features music/graphics written in 100% assembly and what comes from the TI sound chip is sure to astound you.

#112. INVOICE PACK

An excellent invoice preparation and printing program with instructions on how to modify it for your own business.

#113. LABEL MAKER 3

A collection of label programs to create mailing and disk envelopes, disk labels and much more!

#114. PANORAMA

A drawing and illustration program that compliments Graphx and TI Artist. A must for the serious 99/4A artist!

#115. GRAPHICS DESIGN SYSTEM

A complete system for creating graphic screens in full color for your programs by J. Peter Hoddie. Fully documented.

#116. FOURTH TUTORIAL

A lesson in FORTH programming on how to create graphics.

#117. UNIVERSAL DISASSEMBLER

This powerful utility written in Forth allows disassembly of programs off disk in any format, in memory, and even off of P-Box cards. Very complete with some very unique features.

#118. FAST TERM

One of the most popular and recommended of the 99/4A terminal emulator programs. Supports TE-II, ASCII, and X-Modem transfers, print spooling and more. Loads from Exbasic or E/A.

#119. RAG LINKER

A utility for converting DIS/FIX 80 assembly object code files to PROGRAM image. This allows files to load faster and take up less space on disk. Full Doc

#120. BITMAC

The original BITMAC is now available at \$4.95 with all original documentation. A powerful graphics program for the 4A which lets you print where you want...even over pre-existing text. Create great graphics in 16 colors, print text sideways, mirror image, upside down etc. etc. A must for anyone into 99/4A graphics. Comes with second bonus disk with utilities such as sign & banner makers. Even can computer generate your own signature!

#121. SUPER YAHTZEE & WHEEL II

If you like Yahtzee this disk is for you. A great version written in high speed assembly. Also included is another version of Wheel of Fortune which also lets you create your own puzzles with a puzzle edit program included.

#122. ADULT ADVENTURE

A truly adult adventure for use with the TI Adventure Module. Also included is a bonus adventure (not adult) "LOST GOLD" which is one of the better ones we have seen recently.

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Customizing Funnelwriter

Give new meaning to those hard to read control characters

By GENE BOHOT

When I first started using my TI99/4A computer I was slow getting into a word processor because of the complicated directions, but now I use Funnelwriter more than any other program. With all the utilities available in fairware and the inexpensive commercial programs, it can be used for much more than just writing letters. I use it for labels, desktop publishing, columnar newsletters, forms design, and a lot more. If we all send the McGovern's half of what Funnelwriter is worth to us, they would be rich.

Since I have a RAMdisk and BOOT, I don't use the rest of Funnelweb so most of this article would probably apply to other TI-Writer clones as well. The advantage of having Funnelwriter on disk instead of a cartridge is the ability to get into the program and customize it for your own use.

About four years ago, I discovered John Birdwell's Disk Utilities and finally had an easy-to-use sector editor with which I started modifying a lot of disks, including Funnelwriter. I also bought a versatile printer and found a lot more uses for a word processor.

With the help of articles in MICROpendium and a variety of user group newsletters, I modified my character set (CHARA1 file) to show lower-case descenders, changed the Formatter to print out the ampersand (&) and "at" (@) symbols, and speeded up the cursor. These were simple changes and have been outlined in many articles. I even modified the character set for the control characters and helped develop Form Shop, to design and print business forms. The control characters are those funny-looking symbols that TI-Writer uses to indicate the aSCII codes from 0 to 30.

Then, in 1988, I found an article in Genial TRAVELER about a program from Wayne Stith called Kwik-Font. With this program you can design your own character set and with KF->CHARA1 it can be saved as a new character set (the CHARA1 file) for word processing. The only shortcoming of Kwik-Font was the inability to change the appearance of those symbols in the CTRL-U mode. I wrote to Wayne, who

immediately designed an assembly language program to change any character from 0 to 255. Within a couple of months he sent me a disk called CHARA1FIX which does just that; it will fix any character in the CHARA1 file to display just as you want it on the screen in Funnelwriter. (CHARA1FIX was published in the June 1989 MICROpendium.—Ed)

The advantage of this is that I was able to customize the on-screen control characters to be more meaningful than the standard TI-Writer symbols. For example, since the formatter will now print out the ampersand, I changed the symbol for start underline to the "reverse apostrophe" (Grave accent) which now appears on the screen

I modified my character set to show lower-case descenders, changed the Formatter to print out the ampersand and "at" symbols, and speeded up the cursor. These were simple changes ... I even modified the character set for the control characters and helped develop Form Shop, to design and print business forms.

as a bold, underlined "U." The control character for condensed printing on most printers is CTRL-U, Shift-O (ASCII 15), which originally displayed as a lowercase "f" with a dot over it. I have changed it to a bold "C" and condensed-off is an inverse "C."

Similarly, I changed the symbol for Escape to an up-arrow, instead of the dotted lowercase "b." I also changed the rest of the characters displayed with the CTRL-U function to show up better and be easier to recognize.

The same procedure can be used to design custom characters, display them on the screen while typing, and then use the Transliterate command (.TL) to switch the printer to graphics mode and print them.

You end up with a WYSIWYG display in Funnelwriter (What You See Is What You Get). As a matter of fact, this is how Form Shop was originally done, so that you could see what a form or map would look like on the screen before printing it out.

By this time, I had a number of CHARA1 files to be used for various tasks, so I needed a way to tell which one I had loaded at the time. I noticed that the cursor that comes up when each character set is loaded is different from the cursors defined by Funnelwriter. Actually, this is the cursor defined by character 30 of the CHARA1 file. So I loaded up CHARA1FIX and modified character 30 to be an inverse bold "G" for my custom character set and a

small "grid" for my Form Shop character set. It's easy to design a different cursor for each CHARA1 file that will only appear when the Editor is first loaded, then change to the Funnelweb running cursor when you switch from word-wrap to fixed mode.

Now that I had custom character sets and a specific start-up cursor for each one, I wanted to change the running cursors. So I pulled out my trusty sector editor and found that on the first sector of the ED (or EDITA1) file, all three

cursors are defined near the end of the sector:

Word-wrap mode is:

08 7070 7070 7070 7070 (a solid block)

Fixed mode is:

08 3C24 2424 2424 243C (an open box)

Control-U mode is:

08 0000 0000 0000 007C (an underline)

I think the 08 signals the start of a character definition of eight bytes. It was now easy to change the word-wrap and fixed-mode cursors to smaller ones, and I changed the CTRL-U cursor to a diamond shape. This stands out better for me than that little flashing line, but you could change any of the cursors to suit your taste.

(See Page 26)

CUSTOMIZING FUNNELWRITER—

(Continued from Page 25)

Just use the regular character definition codes (Appendix III-5 in the User's Reference Guide) but remember that you will be in 40-column mode so the last two columns of the character do not show.

One last change that I had been trying to make for years was recently solved by Tom Freeman of the LA 99ers User Group. A few years ago I bought a Rave 105 keyboard with 24 dedicated function and control keys. It's so nice to press one key instead of two for all those commands in Funnelwriter. Instead of CTRL and O, for example, I just press the Function 20 key to change from word-wrap to fixed-mode and back again. But there is no single key for CTRL and U, the control-code mode. I had a single key for CTRL and V (return to start of line), but that was seldom used so I asked Tom for a fix to swap the key-returns for these two func-

tions. He gave me instructions in assembly language — which he speaks like a native — but which left me in a fog. So he translated it into simple language that even I could understand. Just load up the sector editor and in the ED file find the string 2560 283E, which are the codes for CTRL-U and CTRL-V and swap, so it reads 283E 2560. I suppose similar changes could be made to change any of the control codes, even for a TI keyboard, if you wanted to change to a key that is easier to remember or easier to reach.

Of course, if you decide to make any of these changes, be sure it is only on a back-up of Funnelwriter, but I found out that I don't have to be afraid of using a sector editor. The worst you can do is lock up the computer, in which case, just erase the disk and re-copy from the original program disk.

Here are sources for programs men-

tioned in this article:

Funnelweb V4.12 (including Funnelwriter): Will McGovern, 215 Grinsell St., Kotara, NSW 2289, Australia. (Copies should be obtainable through most user groups.—Ed)

Menu V7.1 (Boot V4.0): John Johnson, c/o Miami TI User Group, 19301 NE 19 Ave., North Miami Beach, FL 33179.

Disk Utilities V4.1: John Birdwell, 7052 Springhill Cir., Eden Prairie, MN 55344 (send \$15 and disk).

GENIAL TRAVELER Vol. 1 No. 5: Genial Computerware, c/o Barry Traver, 835 Green Valley Dr., Philadelphia, PA 19128 (\$36/year).

Kwik-Font, KF->CHARA1, CHARA1FIX: Wayne Stith, 715 Timken Dr., Richmond, VA 23229. (Send disk and stamped return mailer).

Bohot is a member of the Pomona Valley (California) Users Group.

MY-BASIC

A graphics viewer

BY JIM UZZELL
DDI SOFTWARE

The first part of this month's article is for programmers and hackers.

The following list of memory addresses and their contents were extracted from MY-BASIC 2.99A with default memory allocation.

ADDRESS	CONTENTS
>2002	>24F4
>2004	>DF68
>DF60	OBJ CODE NAME & ENTRY ADDRESS
>DF68	SCAN >236C
>DF70	#IPAD >8300
>DF78	GPLWS >83E0
>DF80	SOUND >F120
>DF88	VDPRD >F100
>DF90	VDPSTA >F102
>DF98	VDPWD >F100
>DFA0	VDPWA >F102
>DFA8	XMLLNK >2018
>DFB0	KSCAN >201C
>DFB8	VSBW >2020
>DFC0	VMBW >2024

>DFC8	VSBR >2028
>DFD0	VMBR >202C
>DFD8	VWTR >2030
>DFE0	NUMASG >2008
>DFE8	NUMREF >200C
>DFF0	STRASG >2010
>DFF8	STRREF >2014

This is for those of you who use a file lister program — of which many have been published in MICROpendium, including Textpro, Filelister and MY-MENU — and get garbage on the screen when it displays characters above ASCII 127. The following program defines those characters in a 6x8 grid (graphics compatible) of their hex designation. The font created is not very good, but there is not much you can do with a 6x8 pixel grid. It could also be used with sector editors. Adding a contrasting color to these characters may make them display better.

```
100 REM REDEFINE ASCII 127 T
O 255
110 CALL GRAPHICS(2,2)
120 DIM Y$(16),Z$(255)
```

```
130 FOR X=1 TO 9 :: READ X$(
X) :: NEXT X
140 FOR Y=1 TO 16 :: READ Y$(
Y) :: NEXT Y
150 REM DEFINE ASCII 127
160 V$=SEG$(X$(1),1,10)&SEG$(
Y$(16),11,16) :: CALL CHAR(
127,V$)
170 PRINT CHR$(127)
180 REM DEFINE 128-212
190 M=128
200 FOR X=2 TO 9
210 FOR Y=1 TO 16
220 Z$(M)=SEG$(X$(X),1,10)&S
EG$(Y$(Y),11,16)
230 M=M+1 :: NEXT Y :: NEXT
X
240 FOR M=128 TO 212
250 CALL CHAR(M,Z$(M))
260 PRINT CHR$(M);
270 NEXT M
280 REM DO NOT DEFINE ASCII
213
290 REM PATTERN=5A1B0406061B
```

(See Page 27)

MY-BASIC—

(Continued from Page 26)

```

0006
300 REM DEFINE 214-255
310 FOR M=214 TO 255
320 CALL CHAR(M,Z$(M))
330 PRINT CHR$(M);
340 NEXT M
350 END
360 DATA "0024140C00000000",
"0028542800000000","00081478
08000000"
370 DATA "007C147C00000000",
"007C542800000000","00384428
00000000"
380 DATA "007C443800000000",
"007C544400000000","007C1404
00000000"
390 DATA "0000000000182418",
"0000000000487C40","00000000
00645448"
400 DATA "0000000000445428",
"00000000001C1078","00000000
001C5420"
410 DATA "00000000003C5020",
"000000000024140C","00000000
00285428"
420 DATA "0000000000081478",
"00000000007C147C","00000000
007C5428"
430 DATA "0000000000384444",
"00000000007C4438","00000000
007C5444"
440 DATA "00000000007C1404"

```

Checksums: 2009 1312 1145 2333 2384
 1512 3353 1105 1285 479 924 971 2354
 1727 1114 1271 1087 613 1964 1932 1282
 1115 1269 1085 611 431 3182 3227 3220
 3195 3184 3179 3222 3208 1369 TOTAL
 63653

The following program, TIPSEE, is a TIPS graphic viewer. Thanks to Ron Wolcott's fine graphic package we have about 2,000 clip-art pictures that have been ported over from the PC world. Just think of the time he spent! That is what I call dedication.

To use this program there are a few rules to follow. First, filenames must follow the TXT,XXX format. Second, the first two characters of the filename must be GR.

This program is designed to find the picture regardless which file it is in.

To put it another way, fill a disk full of TXT,XXX sets, pick any name and it will

find it. Hard drive users can change the pathname in the program, and the sky is your limit.

The program gives you the option to view the picture names or produce a hard-copy for reference.

This program is what I call a "platform program" — something to build on. Just think, you could add a zoom feature, TI-Artist and Page Pro converter, mail label routine, or even an editor.

```

100 CALL GRAPHICS(4)
110 CALL SCREEN(5)
120 FOR X=1 TO 12 :: CALL CO
LOR(X,16,5) :: NEXT X
130 ! TIPSEE
140 ! DDI SOFTWARE COPYRIGHT
1990
150 DIM FT$(20,2),HN$(20),IU
$(12),LN$(20),SZ(20),UI$(12)
,LNN$(200)
160 PRINT : "TIPSEE " : : "This
program was written to disp
lay RON WOLCOTT'S TIPS
graphic pictures."
170 PRINT :: INPUT "PUT DATA
DISK IN DRIVE ONE, THEN PRE
SS ENTER.":YNS$
180 PD=0 :: PN=0 :: OPEN #1:
"DSK1.",INPUT ,RELATIVE,INTE
RNAL
190 INPUT #1:A$,V,V,V :: FOR
X=1 TO 127 :: INPUT #1:A$,V
,J,V
200 IF LEN(A$)=0 THEN X=127
:: GOTO 240
210 IF LEN(A$)<>7 THEN 240 E
LSE IF SEG$(A$,1,2)<>"GR" TH
EN 240
220 IF SEG$(A$,5,3)="TXT" TH
EN PD=PD+1 :: FT$(PD,2)=A$ :
: SZ(PD)=INT((J*4)/11)
230 IF SEG$(A$,5,3)="XXX" TH
EN PN=PN+1 :: FT$(PN,1)=A$
240 NEXT X :: CLOSE #1
250 IF PD=0 THEN PRINT "FILE
NOT FOUND" :: END
260 IF PN<>PD THEN PRINT "FI
LE MISMATCH" :: END
270 PRINT :: FOR X=1 TO PN :
: FOR Y=1 TO PN
280 IF SEG$(FT$(Y,1),1,4)=SE
G$(FT$(X,2),1,4) THEN 300
290 NEXT Y :: PRINT "FILE MI
SMATCH " :: END

```

```

300 NEXT X
310 FOR X=1 TO PD :: OPEN #1
:"DSK1."&FT$(X,1),INPUT ,REL
ATIVE,INTERNAL,FIXED 16
320 INPUT #1,REC 0:LN$(X) ::
INPUT #1,REC SZ(X)-1:HN$(X)
:: CLOSE #1
330 PRINT FT$(X,2);" FROM "
;LN$(X);" TO ";HN$(X) : :
:: NEXT X
335 GOSUB 820
340 PRINT :: INPUT "PICTURE?
":IMNAM$ ::
350 LIN=LEN(IMNAM$)
360 IF LIN>15 THEN LIN=15
370 IMNAM$=IMNAM$&"
" :: IMNAM$=SEG$(IMNA
M$,1,14)&" "
380 IS$="" :: FOR X=1 TO 15 :
: Y=ASC(SEG$(IMNAM$,X,1)) ::
IF Y>=97 AND Y<=122 THEN Y=
Y-32
390 IS$=IS$&CHR$(Y) :: NEXT X
400 X=1
410 IF SEG$(IS$,1,LIN)<=SEG$(
HN$(X),1,LIN) THEN 430
420 X=X+1 :: IF X<=PD THEN 4
10 ELSE 340
430 IMNAM$=IS$
440 IF X>PD OR X<1 THEN 340
450 X=1
460 OPEN #1:"DSK1."&FT$(X,1)
,INPUT ,RELATIVE,INTERNAL,FI
XED 16
470 LOW=0 :: HIGH=SZ(X)-1
480 MID=INT((LOW+HIGH)/2)
490 INPUT #1,REC MID:MTCH$
500 IF MTCH$<IS$ THEN LOW=MID
+1 :: GOTO 530
510 IF MTCH$>IS$ THEN HIGH=MI
D-1 :: GOTO 530
520 IF MTCH$=IS$ THEN 540
530 IF HIGH>=LOW THEN 480
540 CLOSE #1
550 IF MTCH$<>IMNAM$ THEN X=
X+1 :: IF X>PD THEN 960 ELSE
460
560 CALL CLEAR :: FOR M=1 TO
50 :: NEXT M :: DISPLAY AT(
10,36):"WORKING"
570 OPEN #1:"DSK1."&FT$(X,2)
,RELATIVE,INTERNAL,FIXED 53
580 MNO=(MID)*11 :: FOR Q=1
TO 11 :: INPUT #1,REC MNO+Q-

```

(See Page 28)

MY-BASIC—

(Continued from Page 27)

```

1:IS :: IUS(Q)=IS :: NEXT Q
:: CLOSE #1
590 Y=1
600 FOR Q=1 TO 11 :: FOR X=1
TO 52 :: UIS(Q)=UIS(Q)&SEG$
(HEX$(ASC(SEG$(IUS(Q),X,1))
),3,2) :: NEXT X :: NEXT Q
610 FOR Z=1 TO 6 :: FOR X=1
TO 11 :: UIIS(Z)=UIIS(Z)&SEG
$(UIS(X),Y,16) :: NEXT X ::
Y=Y+16 :: NEXT Z
620 FOR X=1 TO 11 :: UIIS(7)
=UIIS(7)&SEG$(UIS(X),97,8) :
: NEXT X
630 CALL CLEAR
640 CALL GRAPHICS(1,1)
650 FOR X=13 TO 22 :: CALL C
OLOR(X,7,16) :: NEXT X
660 Y=1 :: FOR X=129 TO 139
:: CALL CHAR(X,SEG$(UIIS(1),
Y,16))
670 DISPLAY AT(10,X-120)SIZE
(16):CHR$(X); :: Y=Y+16 :: N
EXT X
680 Y=1 :: FOR X=140 TO 150
:: CALL CHAR(X,SEG$(UIIS(2),
Y,16))
690 DISPLAY AT(11,X-131):CHR
$(X); :: Y=Y+16 :: NEXT X
700 Y=1 :: FOR X=151 TO 161
:: CALL CHAR(X,SEG$(UIIS(3),
Y,16))
710 DISPLAY AT(12,X-142):CHR
$(X); :: Y=Y+16 :: NEXT X
720 Y=1 :: FOR X=162 TO 172
:: CALL CHAR(X,SEG$(UIIS(4),
Y,16))
730 DISPLAY AT(13,X-153):CHR
$(X); :: Y=Y+16 :: NEXT X
740 Y=1 :: FOR X=173 TO 183
:: CALL CHAR(X,SEG$(UIIS(5),
Y,16))
750 DISPLAY AT(14,X-164):CHR
$(X); :: Y=Y+16 :: NEXT X
760 Y=1 :: FOR X=184 TO 194
:: CALL CHAR(X,SEG$(UIIS(6),
Y,16))
770 DISPLAY AT(15,X-175):CHR
$(X); :: Y=Y+16 :: NEXT X
780 Y=1 :: FOR X=195 TO 205
:: CALL CHAR(X,SEG$(UIIS(7),
Y,8))
790 DISPLAY AT(16,X-186):CHR
$(X); :: Y=Y+8 :: NEXT X
800 DISPLAY AT(22,1):"HARDCO
PY ALL NAMES N" :: ACCEPT AT
(22,20)SIZE(-1):YNS$
810 IF YNS$="Y" THEN 970 ELSE
STOP
820 DISPLAY AT(24,1):"DO YOU
WANT A LIST OF NAMES Y" ::
ACCEPT AT(24,30)SIZE(-1):YE
SS$
830 IF YES$="Y" THEN 850
840 RETURN
850 X=1
900 OPEN #2:"DSK1."&FT$(X,1)
,INPUT ,RELATIVE,INTERNAL,FI
XED 16
910 FOR M=1 TO SZ(X) :: INPU
T #2,REC M-1:LNN$(M) :: PRIN
T LNN$(M);
915 IF M=110 THEN PRINT
916 IF M=110 THEN DISPLAY AT
(24,1):"ANY KEY TO CONTINUE"
:: CALL KEY(0,K,S) :: IF S=
0 THEN 916
917 NEXT M :: CLOSE #2 :: PR
INT :: PRINT
920 DISPLAY AT(24,1):"IS THI
S THE LIST YOU WANT? Y" ::
ACCEPT AT(24,29)SIZE(-1):YE
S$
930 IF YES$="Y" THEN RETURN
935 CALL CLEAR
940 X=X+1 :: IF X>PD THEN 95
0 ELSE 900
950 DISPLAY AT(24,1):"NO MOR
E FILES" :: STOP
960 DISPLAY AT(24,10):IMNAM$
;" NOT ON THIS DISK" :: STOP
970 X=1
980 OPEN #2:"PIO",VARIABLE 1
32
990 OPEN #3:"DSK1."&FT$(X,1)
,INPUT ,RELATIVE,INTERNAL,FI
XED 16
1000 PRINT #2:CHR$(14);FT$(X
,1) :: PRINT #2:CHR$(15)
1010 FOR M=1 TO SZ(X) :: INP
UT #3,REC M-1:LNN$(M) :: PRI
NT #2:LNN$(M);
1020 NEXT M :: PRINT #2:CHR$(
27);"@ " :: PRINT #2 :: CLOS
E ALL
1030 X=X+1 :: IF X>PD THEN 9
50 ELSE 980
Checksums: 1219 1076 2877 863 2270
3488 6232 1725 4535 3743 3506 2212
3477 4397 3082 1291 2879 2996 2635
2900 2681 618 4875 3965 3644 757 2539
1182 1508 3446 4562 495 1551 378 2867
2251 759 1597 383 3865 1503 1534 1611
2518 2569 1384 1535 675 3615 4321 3393
4612 867 389 4601 1677 4674 1186 3657
860 1318 2939 3543 3632 3532 3138 3530
3134 3537 3139 3544 3144 3551 3149
3502 3107 4531 2027 4832 376 1381 700
387 3865 3945 1446 4829 821 2478 4873
335 1737 868 2210 2744 3496 390 1782
3875 2939 4129 3570 2257 TOTAL
266769

```

TV program features Southwest 99ers

The Southwest 99ers in Tucson, Arizona, appeared Sept. 7 in the "By the Side of the Road" segment on KUAT-TV's television program, "Arizona Illustrated."

The station is the PBS station at the University of Arizona.

Tom Wills, Southwest 99ers vice president, says the host, Kim Lamb, interviewed him and users' group president BJ Mathis. Members — ranging from children to charter members more

than 70 years old — were filmed at various consoles, including the basic system (console, program recorder and TV), an expanded system (console, PE Box with 32K, speech, disks drives, RS232 and a Horizon RAMdisk) and a Geneve with 40 megabyte hard drive and four floppy drives.

Lamb referred to the TI99/4A as a "classic" comparable to a Duesenburg in the automobile world, Wills says.

The Missing Link

A new operating environment for Extended BASIC users

By BILL GASKILL

The Missing Link (TML), which was written by EZ-KEYS author Harry Wilhelm, is an assembly language program that gives Extended BASIC users and programmers access to the 99/4A's bit-mapped graphics display mode. Programmers with the ability to work in assembly gained access to this mode when TI brought out Editor/Assembler, but it has never been directly accessible to Extended BASIC programmers. TML has changed all that. You can now write programs in Extended BASIC that display the same kind of stunning detail and graphics that appear in programs like Parsec or Munch-Man. Even if you are not a programmer, you can still benefit from TML through applications that are written in the TML environment.

THE PRODUCT

The \$24.95 (plus \$2.50 S/H) package comes with a SS/SD diskette and a laser-printed, 30+ page manual. There is no specific loader provided, just RUN "DSK#.TML" is all that's required. You must have a 32K memory expansion, and either TI's Extended BASIC VII0 or the MG Super Extended BASIC module. At least one SS/SD disk drive is required.

SUPPORT

The Missing Link is warranted for a 90-day period from date of purchase, with a \$5 replacement fee required after the 90-day warranty has expired. No upgrade policy on the program has been announced to my knowledge. The usual Texaments upgrade policy offers upgrades at 40 percent of the original purchase price with the return of the original diskette. Free support after the sale is offered by Texaments via queries that are addressed to the author, through Texaments.

OVERVIEW

The Missing Link is a programming environment that supports the creation of peripheral applications in much the same way that TI-Base does through its command file programming language. The "platform," in this case TML, provides

Review

Report Card

Performance.....A
Ease of Use.....A-
Documentation.....C+
Value.....A+
Final Grade.....A+

Cost: \$24.95 + \$2.50 S&H

Manufacturer: Texaments, 53 Center St., Patchogue, NY 11772; 516-475-3480

Requirements: TI99/4A, memory expansion, disk system, Extended BASIC or Super Extended BASIC

the appropriate commands to access that environment, then you provide the custom code by writing your programs using TML-supported statements. With the introduction of TML the Extended BASIC programmer has a powerful new tool for professional application development with high-res graphics, and the Extended BASIC user has the ability to access those applications from nothing more than the Extended BASIC module (and 32K memory, of course).

A program called PaperSaver, that comes on the TML disk, will give you a superb idea of what I mean when I use the term "professional application development." PaperSaver is a multi-window, multi-font program that displays a "preview page" of a formatted TI-Writer document. Along with the display of the page, which shows exactly how the document will look when printed, two other windows on the same screen allow you to edit the contents of the page or just read it if you like. Of course you can print it too. This is all done with an Extended BASIC program. If you buy the \$3 demo of The Missing Link you get to see PaperSaver in action too, though it is not the full-bore program.

FEATURES

TML is feature-laden, but not intimidating. It supports windows, multiple colors, multiple fonts, varying text formats, Cartesian graphics (lines, circles, boxes etc.), TI LOGO-like turtle graphics, sprite graphics, it both loads and saves TI-Artist pictures and it even has a single-density screen dump feature that you can see in use in the Mutual Fund Performance program that accompanies this article. While you will have to learn how to "tweak" The Missing Link to make your XB programs fit its environment, you don't have to learn a new programming language to take advantage of all of the powerful features that it offers. The list below gives you an idea of the command structure required.

CALL LINK("CLS") — clears the screen.

CALL LINK("COLOR",16,5) — makes the screen blue with white text.

CALL LINK("PE") — sets the status of the pen (that you draw with) to pen erase.

CALL LINK("WINDOW",r1,c1,r2,c2) — defines the upper left then lower right corners of a window.

CALL LINK("PRINT",row,column,string, number or string variable) — displays text or numbers on the screen.

CALL LINK("INPUT",row,column,string,number, variable,length,prompt string) — accepts input from the screen, with input parameters for length and suggested responses)

As you can see, there is not a lot of mystery to the commands. Except where features unique to The Missing Link are called, like CALL LINK("PIXEL",row,column,FG color,BG color), the CALLS are much like most of the 40-column display packages available for the 99/4A. Creating the commands with that kind of familiar structure is a credit to Harry Wilhelm's foresight, and it makes the package that much friendlier to the first-time or novice user.

PROGRAM OPERATION

You don't have to be a wizard to figure
(See Page 30)

THE MISSING LINK—

(Continued from Page 29)

out how to use The Missing Link, or even how to set it up if you want to change some of the default parameters. That which isn't clearly explained, or already obvious on the screen displays, is covered well in the manual when it comes to the mechanics of getting the program up to speed. After typing in OLD "DSKI.TML" and RUN or just RUN "DSKI.TML" you are prompted to choose between Myarc or TI controller cards (because it makes a difference on how many files you can have open at the same time) and then whether you want to use the 16-color mode or the two-color mode. That's about it. If you want to change default fonts or other parameters the screen displays are again functional and the manual answered any questions that I came up with.

PERFORMANCE

The Missing Link proved to be a flawless performer, with no crashes or lockups or any other unwanted surprises. Speed is on par with what an Extended BASIC program without TML can produce. I saw no indication that beeps, honks or any CALL SOUNDS are supported by The Missing Link.

One of the things that you are advised of right up front with TML is how much of the VDP RAM (Stack) is taken up in gaining access to that Bit-Mapped Graphics mode through Extended BASIC. It's a lot. Enough so, that you will have to watch your use of string variables in program design. There just isn't a whole lot of room left for large arrays and such. So sloppy or indiscriminate use of string variables won't cut it.

EASE OF USE

With the exception of a couple of programming things that I couldn't find in the manual, I found TML pretty painless to use. One of the biggest reasons for that is the fact that I already program in Extended BASIC, so I am not really learning a new language. I am simply taking advantage of the enhancements to Extended BASIC that The Missing Link has given me. TML scores high in ease of use because Harry Wilhelm has opted to make virtually all of the power of the program available through the familiar CALL LINKs and CALL LOADs that I grew up with.

DOCUMENTATION

Despite that fact that The Missing Link comes with 31 pages of detailed instructions, there were still some questions that I couldn't find the answers to. The biggest one was how to convert the row and column positioning that I am used to using in the XB Graphics mode, to the dot-row/dot-column designations required for TML screen display and input. Wilhelm provided the answer to this by explaining that I needed to multiply the graphics row or column number times 8 and then subtract 7 to come up with the equivalent bit-map position. In other words, the formula is the same as that used in determining sprite positions. This applies only to the default 8x8 font, though. The other fonts require some experimentation on your part.

I also found experimentation necessary when designing and then using windows. I discovered that a window must be called before it can be used, and it is called by redrawing it. So I discovered that routines to draw and use windows are best placed as CALL SUBs at the end of your XB program or at least as subroutines that are accessed with a GOSUB and RETURN, because they are accessed often. Other experimentation revealed at least a workable way to do inverse video. I couldn't find instructions on that in the manual either, though the manual does make reference to the fact that it can be done.

Overall, the manual covers a lot of ground, but it skims over some of the material too quickly. It ignores some areas all together and proved to be a frustration to me at first. From an appearance aspect, the manual is on par with some of the best produced in the TI community. From a content point of view I rate the documentation as average for the most part and inadequate in a few areas. The manual is not TML's strong point.

CONCLUSION

The Missing Link is a VERY impressive programming environment, that cries out for some innovative applications along the line of the PaperSaver program that comes with the package. Though TML sports a self-professed limitation in the amount of stack space available for string use, the author shows us how that limita-

tion can largely be overcome through the judicious use of DATA statements and recurring use of variables. With nothing more than familiar Extended BASIC-like programming statements, anyone can create superb graphics or convert existing XB programs to the TML environment. I took the Mutual Fund Performance program that appeared in the December 1988 MICROpendium and converted it to the TML environment in less than an hour, and that was while I was still learning the ins and outs of TML.

While I can't honestly say that The Missing Link has the same impact on the TI community as the introduction of the Editor/Assembler package did back in 1981, I think it comes close. The Missing Link has a much broader audience. I would guess that most every 99/4A still in use has the Extended BASIC module plugged in most of the time. If this statement fits in your case, then The Missing Link is for you. It is an excellent application that is sure to find a place in your software library.

```

1 !MutualFund Performance !6
26
2 !Bill Gaskill !237
3 !Grand Junction, Co. !005
4 !Requires TML programming
!163
5 !environment to use. !214
100 CALL LINK("CLEAR"):: CAL
L SCREEN(5):: CALL LINK("COL
OR",16,5)!181
110 CALL LINK("WINDOW",153,8
,177,224,1):: CALL LINK("WIN
DOW",1,1,185,232,1)!183
120 ON WARNING NEXT :: GOSUB
390 !048
130 GOSUB 370 :: CALL LINK("
PRINT",4,2,"Enter a minimum
of 2 months and a maximum of
24 months. Zero=Exit
.")!095
140 GOSUB 380 :: CALL LINK("
PRINT",25,8,"ANALYSIS LENGTH
IN MONTHS:"):: CALL LINK("I
NPUT",25,168,AL,2):: IF AL>2
4 THEN 140 ELSE IF AL=0 THEN
CALL LINK("CLEAR"):: END !1
58
150 GOSUB 370 :: CALL LINK("
(See Page 33)

```

Windows 9640

A step in the right direction

By DOUG PHELPS

Windows 9640 is a program for the Myarc 9640 written by Beery W. Miller, which permits multi-tasking of several programs, and the choosing of a wide array of disk maintenance commands through selection by either a mouse or through the simulation of a mouse through the keyboard.

When you receive Windows, you get a manual and a SSSD disk with the Windows program (69 sectors), a mouse driver (13 sectors), and a batch file you can use to automatically install Windows and the mouse driver onto your hard drive. This would leave plenty of room on even a DSSD disk to place MDOS, Windows, the driver and your own AUTOEXEC, and perhaps even another program or two.

This is a small program in terms of disk space, but a big one in terms of potential.

Before you begin using the program you are faced with a choice. Selections from the program are made by moving a pointer to your selection and pressing the right mouse button or F10. You have three choices as to how you accomplish this. Three drivers are provided, each with its advantages and disadvantages. The default driver is a mouse driver included in the program. The second driver is for the keyboard. Using this driver permits one to use the arrow keys to move the pointer around on the screen, and F8, F9 and F10, respectively, to simulate the mouse left, middle and right buttons.

RECOMMENDED DRIVER

The third (recommended) driver is another mouse driver, but, with a twist. This is an external program, by Bruce Hellstrom, which runs independently of Windows. To use this interrupt driven program, you could include the program name "MOUSE" in your AUTOEXEC file and it would load automatically, or you could also just type "MOUSE" at the A> prompt before loading Windows. The 'vantage to this driver is twofold:

No. 1, any program which is written to utilize Windows' routines will use it. The major advantage is this: At times, a newly loaded program will change from Win-

Review

Report card

Performance.....	A
Ease of use.....	B
Documentation.....	B
Value.....	A
Final Grade.....	A

Cost: \$15 for subscribers to 9640 News, \$25 to non-subscribers

Manufacturer: Beery W. Miller/9640 News, P.O. Box 752465, Memphis, TN 38175-2465

Requirements: Geneve 9640

dows' default graphic mode. When this happens with the first two drivers, our friendly pointer (a sprite) can no longer be seen because sprites are not allowed in text modes, hence, you are left moving it "in the dark." You may still make selections with it, but you will just be guessing its position. With Hellstrom's driver, this problem is solved. When changed to a text mode, the pointer changes from a red triangle (sprite), to a rapidly blinking "+" character. Moving the mouse now moves the "+" character around as if it was a sprite. An elegant solution to a sticky problem. But, here lies the rub. Using this driver requires an additional 16K of memory. Not a whole lot, but it could prove critical if trying to run two large programs at once.

A solution to this problem might be to purchase the Memex memory expansion card from Bud Mills. (I have.) With the purchase of this card, starting at \$245 for 512K of RAM, many more programs can be run at the same time.

MENU OPTIONS

Upon booting the program you are shown a screen with a registration number identifying your copy of the program, and your name (beware pirates), plus the name of the program. You are required to press any key (regardless of the driver) to continue.

The screen will now present a menu (in a

window of course) of seven options:

- 1) Repartition screen
- 2) System information
- 3) File options
- 4) Disk options
- 5) Load task
- 6) MDOS WINDOW
- 7) Exit — DeInstall

By moving the pointer to the appropriate choice, and pressing the right mouse button (or equivalent), you choose your option. I have found the recommended driver to be a tad sensitive to placement, so it may take some practice before you can always make your desired choice.

Choosing options 3 or 4 will present menus with the expected choices on them. "File options" allows you to do a directory, unprotect and protect files, delete and rename files, and to view text files. "Disk options" allows you to clone, format and sweep a floppy, and create, remove, and rename a directory.

Option 2 displays program version information, and option 7 does what it suggests, as when this option is chosen, you quit the program. To go back to Windows you must reboot it.

NOT SO OBVIOUS OPTIONS

Now for the not so obvious options. Choosing No. 1 presents you with another menu. From this menu, you may change the display from the default 80-column graphic screen, to a text mode with either 80 or 40 columns. Another option is to park a hard drive. No need for a separate program now. Other options allow for a default reset in case a program modifies the screen tables, and the resizing of Windows on the screen for the various programs you may be multi-tasking. (Resizing only works for programs written specifically for Windows.) The last option is an option to "Toggle Tasks." This allows you to choose which programs (which you have previously loaded at initial menu option 5) you wish to multitask. Multiple choices may be made.

Option 5, "Load Task," is the heart of the program. At its prompt, you are asked to type in the actual program name (ex. EDI-

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WINDOWS 9640—

(Continued from Page 31)

TOR). You are then asked to "Define Task." At this point, you may give it any name you wish, such as "MDOS Text Editor." The purpose of this is not obvious until you consider that you may want to run more than one copy of the same program. After you have loaded all the programs you want (ideally without getting a "not enough free memory" message), you are presented with a menu with the names with which you "defined" each task.

Choosing option 6 is a real treat. Choosing this option drops you into a MDOS Window. Here, you may do anything you wish just as though Windows wasn't even loaded. You could type "DIR A:", or "COPY A:FILE1 B:", or any other MDOS command you wish.

This does Paul Charlton's "Picture Transfer" program one better by not having to precede the command with the word MDOS like this: "MDOS DIR A:". If you want to, you can even load programs here, but, of course, they won't be multi-tasking. Any program which demands a command line argument will have to be run from here as Windows can't run those programs. These include, for example, any program that requires you to type in the program name, then space, then a file name for it to operate on, such as Al Beard's "Transform" or Barry Boone's "EXEC" program. Don't expect to be able to run Telco and MY-Word at the same time. You can only load them through EXEC or the GPL interpreter, and both of these programs can only load in this MDOS Window. However, they do run flawlessly in the Window. After you are finished with the programs and wish to return to Windows 9640, press the left shift key and the Alt key at the same time, and you are immediately returned to the first menu screen as if you never left.

MULTI-TASKING LIMITATIONS

Can programs that have previously been written be run in a multi-tasking mode Windows? It depends. Multiple copies of Advanced BASIC may be run, but, the displays are erratic. A text editor provided in 9640 News by Peter Muys, is about (in Miller's words) 95 percent compatible. To use it, you must change the display to 80-column text mode. You do this by

choosing initial menu option one. Then there is only a minimal amount of garbage on the screen when it is run. Clint Pulley's "Quick and Dirty Editor" is not compatible as it turns off interrupts and Windows cannot multitask with interrupts off. The Printer's Apprentice and Windows do not get along at all. When TPA is booted, it trashes Windows and you must reboot Windows. It is caused by the way TPA searches for memory. I have run Hypercopy with varying degrees of success. If Hypercopy is the first program you load, it hogs all the remaining memory for disk copying.

At this time, information cannot be passed between multi-tasking programs. Of course, the information may be written to disk and then be read by another program. Likewise, saving screen images was not implemented due to memory constraints. The next major upgrade will make use of extra memory if the user has it.

It is advised that if you do not have memory expansion, TIMODE should not be activated, and the internal RAMdisk and print spooler should either not be used, or kept to a minimum in order to provide as much memory as possible. After some experimentation, you will be able to determine a good combination. If the programs you wish to use don't use all of memory, you will have no problem using any or all of these options. Windows will tell you if there is not enough free memory when you try to load a program.

DOCUMENTATION

The manual is well done as far as it goes, but because of the complicated nature of the program itself, some experimentation will be needed of the nature, "What happens when I do this?" The problem is that, at the time the manual was written, and still to a large degree, no specifically written programs existed to use as examples. Miller couldn't say, "Load program A, then load program B, and then this will happen." But it is the chicken before the egg problem. Programs needed to be written for it first, but, until it was released, he couldn't get a feel for what was wanted.

Provided in the back of the manual is programming information for use by programmers wishing to interface programs

with Windows. I'm sure additional programming information will be gladly given by Mr. Miller.

According to Miller, work is now being done to interface Windows and the "C" and "Fortran" languages. Al Beard, author of Fortran for the Geneve, has expressed some interest in producing some Windows-compatible utilities, a hard drive back-up utility for one. A demo program, with source code, was supposed to have been released in Volume 2 issue #1 of 9640 News. (By the time you read this, it should be out.) Miller also has a "real" application in the works, due out in Volume 2 issue #2. This will be a copy program compatible with the Myarc hard and floppy disk controller card. It will be able to utilize the Memex card and it will load up to a double-sided quad-density diskette into memory and permit it to be written out to any floppy device(s) repeatedly. It won't be as fast as Hypercopy, but will be faster than MDOS or any other copier available for the Geneve. By the way, this program is a good reason to subscribe to 9640 News. All Miller's future applications programming will be Windows compatible, and any other Windows compatible programs will definitely be discussed there first. Write Miller for details on this diskazine.

This program is a foundation, meant to be built upon. While the foundation is pretty useful, for disk utilities etc., other programs need to be written to take advantage of this program's special opcodes. How about some "Sidekick" type programs? It has always irked me when I am writing a letter and I need to add a few numbers, to have to go on a scavenger hunt for my \$5 calculator. A calculator, notepad and date book would be nice. Or how about while you are generously uploading that diskful of programs (with a Windows-based terminal emulator), drop over to your Windows-based word processor and write a letter to your mom, or maybe a letter of thanks to Beery Miller for writing this program. Our computer desperately needs programs written for it to at least survive, and maybe thrive. A program like this can do it. It is a valuable step towards the life extension of the Geneve market.

More TI Bulletin Board Listings

MICROpendium published several pages of TI bulletin board listings earlier this year. Why publish another? The following list, by Mike McGaughey of the Midland 99ers User Group of South Carolina is completely updated, as of Sept. 1, 1990. The previous listings contained numerous entries that were outdated. We will publish this listing starting this month and continuing until it is completed.

CITY	STATE	PHONE	NAME	BAUD	SL#s	PCP	SYSOP
W. Memphis	TN%	501-735-9980	The Midnight Hour	24	1551		Mike Dorman
Tucson	AZ%	602-290-6277	Cactus Patch BBS	24	4751		Tom Wills
Phoenix	AZ%	602-433-2767	V.A.S.T. BBS	24	4751		Leo Baker
Carson	CA*%	213-324-3185	Geneve BBS	12	3173	CALAN	John Bohlier
Los Angeles	CA*%	213-755-7239	TI World 99BBS	24	3173	CALAN	Danny Nelson
Los Angeles	CA*%	213-864-2488	TI-Club BBS	12	3173	CALAN	Steve Chalcraft
Whittier	CA*%	213-947-7777	99 BBS	24	3173	CALAN	Roger Davis
Campbell	CA*%	408-258-3679	South Bay Techie	12	6450	CASJO	Keith Felix
Hayward	CA*%	415-782-9030	Aquarian TIBBS	12	9181	CASFA	Gary Anderson
San Diego	CA*%	619-278-8155	S.C.C.G.-99BBS	24	9183	CASAD	Lutz Winkler
Costa Mesa	CA*%	714-751-4332	U.G.O.C. 99 BBS	24	6294	CASAN	Ben Hatheway
Sacramento	CA*%	916-338-1571	River City TIBBS	12	9179	CASAC	John Riley
Sacramento	CA*%	916-927-3012	Sac-Tibbs	12	9179	CASAC	Woody Large
Sacramento	CA*%	916-929-0692	Knight's Castle/TISIG	12	9179	CASAC	David Knight
Colorado Spgs	CO	719-574-2567	Villa-TI/TISIG	24			Joe Nuvolini
Newark	DE	302-322-3999	Delaware Valley UG	12			James Gentry
Miami	FL*%	305-386-8295	Miami User Group	24	6582	FLMIA	Wolfgang Riestere
Lake Worth	FL	407-533-5167	The Big Experiment	12			Lee Stillwell
Orlando	FL%	407-894-9641	Lone Wolf	96	7096		William Byrd
Greenacres	FL	407-969-3134	Mid-Evil BBS	24			Stanley Krajewski
Clearwater	FL%	813-449-2202	The Alligator BBS	24	4637		Frank Barlow
Tampa	FL*%	813-988-7676	TI-Heaven	24	5518		Paul Wiese
Tampa	FL	813-654-8484	TI-Heaven	24	5518	FLTAM	Gary Sweers
Safety Harbor	FL%	813-725-4568	Cy's Swap Shop	24	4637		Cy Leonard
Jacksonville	FL	904-453-4201	After Hours	12	5797		Thomas Renfroe
Atlanta	GA*%	404-363-1640	Ham Radio TIBBS	12	8795	GAATL	Larry Lord
Atlanta	GA*%	404-250-0044	Night Owl PBBS	24	8795		George Gorman
Forest Park	GA*%	404-366-1914	Atlanta TI U.G.	12	8795	GAATL	Charles Dupree
Tucker	GA*%	404-381-0226	Crackerbox	12	8795	GAATL	-NA-
Stone Mountain	GA*%	404-425-5329	Computer Tec	24	8795	GAATL	Joe Deleko
College Park	GA*%	404-991-6250	Atlanta U.G. #2	12	8795	GAATL	Jimmy Fairchild
Savannah	GA	912-236-3349	The Matrix PBBS	24			Bob Williams
Pekin	IL	309-353-9161	Pekin Techie	12	8257		Mike Christianson
Melrose Park	IL*%	312-345-4127	TI-West	24	8257	ILCHI	Nick Iacovelli
Franklin Park	IL*%	312-455-3256	Westdale	12	8257	ILCHI	Alan Izzo
Chicago	IL*%	312-651-7252	TI-South PBBS	12	8257	ILCHI	James Brooks
Chicago	IL*%	312-725-0652	Captain Video	12	8257	ILCHI	Ed Lee
Sauk Village	IL*%	312-757-3135	The Board	12	8257	ILCHI	Bob Lee
Morton Grove	IL*%	312-966-2342	The City Limits/TISIG	24		ILCHI	John Behnke
Niles	IL*%	312-966-2342	The City Limits	24	8257	ILCHI	Butch Goldstein
Chicago	IL*%	708-453-7831	Chicago Connection	12	8257	ILCHI	Hank Ellerman
Calumet City	IL*%	708-862-0182	TI User Group BBS	24	8257		Mike Maksimik
Donovan	IL%	815-429-3533	Alternative U./TISIG	24	8257		Wayne Burgess
Romeoville	IL*%	815-741-2135	The Clinic Techie	12	8257		Doug Redmond
Wichita	KS%	316-681-3167	MMPB TIBBS	12	8013		Jerry McClusky
Olathe	KS*%	913-764-6451	Manhattan Project	12	8615	MOKAN	Jesse Slicer
Louisville	KY	502-893-0622	KyInda User Group	12			Bill Fielden
Ashland	KY	606-329-1881	TISIG	12			Mike Pugh
Marrero	LA	504-340-5603	TI Net #4	24			Paul Arnold
Waterville	MA	203-465-9065	Northeaster BBS	12			Eunice Spooner
Sanford	MA	207-490-2870	Tree Top BBS	24			Michael Lescord
Portland	MA	207-797-5690	Down East Connection	12			Mark Rideout
Springfield	MA%	413-736-0667	Mass. Gold Mine	12	3948		Edward Goldberg
Worcester	MA	508-892-9756	Jeff's 40megs	24			Jeff Artz
Malden	MA*%	617-321-8214	National 99ers	12	8796	MABOS	Russ Medeiros
Weymouth	MA*%	617-331-4181	B.C.S. #1	12	8796	MABOS	Tom Ward

Legend: *=accessible via PC-Pursuit; %=accessible via Starlink;SL#=Starlink number;BAUD 3=300; 12=300/1200; 24=300/1200/2400; 96=300/1200/2400/9600.

MISSING LINK—

(Continued from Page 30)

```
PRINT",4,2,"Enter the number
of shares that you original
ly purchased.
```

```
.)!016
```

```
160 GOSUB 380 :: CALL LINK("
PRINT",33,8,"STARTING NUMBER
OF SHARES:"):: CALL LINK("I
NPUT",33,168,BS,9)!224
```

```
170 GOSUB 370 :: CALL LINK("
PRINT",4,2,"Enter the dollar
amount that you paid for a
single share.
```

```
.)!096
```

```
180 GOSUB 380 :: CALL LINK("
PRINT",41,8,"ORIGINAL COST P
ER SHARE $"):: CALL LINK("I
NPUT",41,168,SP,9):: BI=BS*S
P !052
```

```
190 GOSUB 370 :: CALL LINK("
PRINT",4,2,"Enter the number
of shares that you own now.
```

```
.)!095
```

```
200 GOSUB 380 :: CALL LINK("
PRINT",57,8,"CURRENT NUMBER
OF SHARES:"):: CALL LINK("I
NPUT",57,168,ES,9)!198
```

```
210 GOSUB 370 :: CALL LINK("
PRINT",4,2,"Enter the curren
t value of a single share.
```

```
.)!208
```

```
220 GOSUB 380 :: CALL LINK("
PRINT",65,8,"SHARE PRICE NOW
$"):: CALL LINK("I
NPUT",65,168,SPN,9):: CI=ES*
SPN !178
```

```
230 GOSUB 370 :: CALL LINK("
PRINT",4,2,"Enter the dollar
amount of any cash dividend
s not reinvested.
```

```
.)!215
```

```
240 GOSUB 380 :: CALL LINK("
PRINT",81,8,"CASH DIVIDENDS
RECEIVED $"):: CALL LINK("I
NPUT",81,168,CD,9)!082
```

```
250 GOSUB 370 :: CALL LINK("
PRINT",4,2,"Enter amount of
any new capital placed in th
e fund since purchase.
```

```
.)!152
```

```
260 GOSUB 380 :: CALL LINK("
PRINT",89,8,"NEW INVESTMENTS
(See Page 34)
```

THE MISSING LINK—

(Continued from Page 33)

```
IN FUND $"):: CALL LINK("I
NPUT",89,168,II,9)!155
270 GOSUB 370 :: CALL LINK("
PRINT",4,2,"Enter amount of
any money taken out of the f
und since purchase.
```

```
."!)!248
```

```
280 GOSUB 380 :: CALL LINK("
PRINT",97,8,"REDEMPTIONS OUT
$"):: CALL LINK("I
NPUT",97,168,RO,9):: RI=II-R
O :: RI=RI*.50 !003
```

```
290 GOSUB 370 :: CALL LINK("
PRINT",4,2,"One moment. Calc
ulating rate of return on yo
ur investment...
```

```
."!)!067
```

```
300 SA=BI+RI :: SB=(CI+CD)-R
I :: SC=SB/SA :: SD=(SC-1)*1
00 !036
```

```
310 SE=12/AL :: SF=(SE*SD)*1
00 !043
```

```
320 GOSUB 380 :: CALL LINK("
PRINT",113,8,"YOUR RATE OF R
```

```
ETURN IS %")!152
330 CALL LINK("FORMAT",2,3,2
):: CALL LINK("PRINT",113,16
8,SP/100)!032
```

```
340 GOSUB 370 :: CALL LINK("
PRINT",4,2,"Press A to do an
other one, P to print screen
or Q to quit program.")!189
```

```
350 CALL KEY(3,K,S):: IF S=0
THEN 350 ELSE IF K=80 THEN
360 ELSE IF K=81 THEN END EL
SE IF K=65 THEN 130 ELSE 350
!043
```

```
360 CALL LINK("DUMP"):: GOTO
```

```
340 !043
370 CALL LINK("WINDOW",153,o
,177,224):: RETURN !177
```

```
380 CALL LINK("WINDOW",1,1,1
85,232):: RETURN !062
```

```
390 CALL LINK("PENHUE",5,16)
:: CAEL LINK("PD"):: CALL LI
NK("PRINT",9,40,"MUTUAL FUND
PERFORMANCE")!139
```

```
400 CALL LINK("PRINT",137,8,
"copyright (C) 1990 by Bill
Gaskill"):: CALL LINK("PENH
UE",16,5):: CALL LINK("PU"):
: RETURN !151
```

Grand Rapids officer F. Jay Buckley dies

F. Jay Buckley, 74, vice president and librarian of the GR 99er Computer Group in Grand Rapids, Michigan, died Aug. 13.

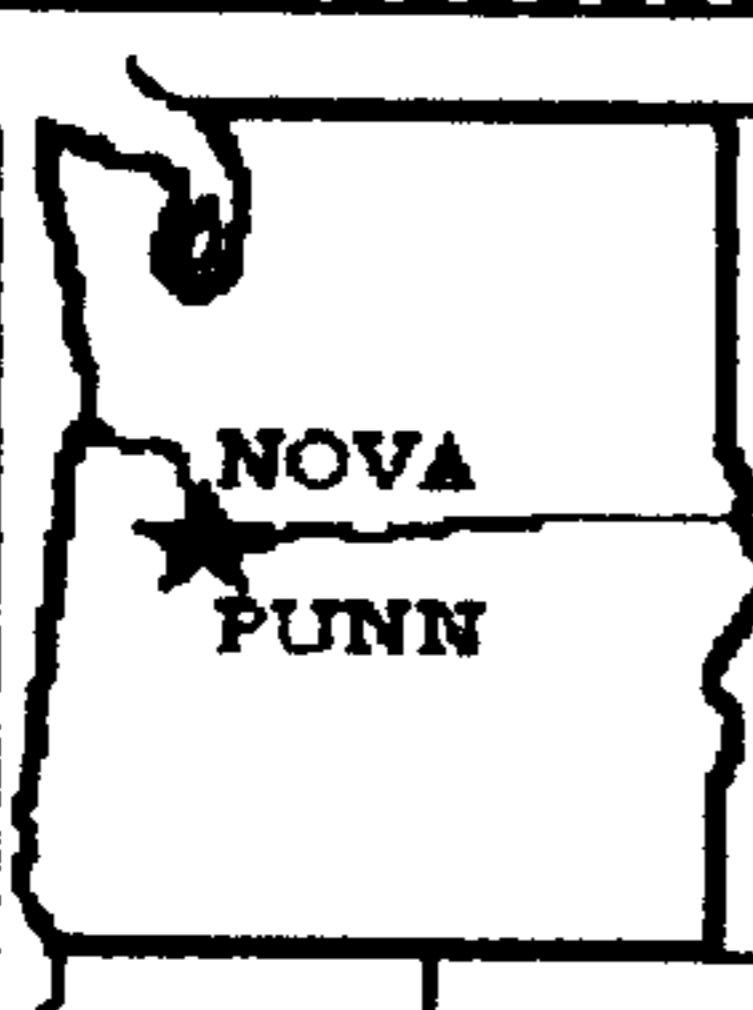
Buckley had been a charter member of the users' group, according to Bert Vanderstom, its newsletter editor. Buckley had recently organized and cataloged the group's disk library.

Funeral services were at Zaagman

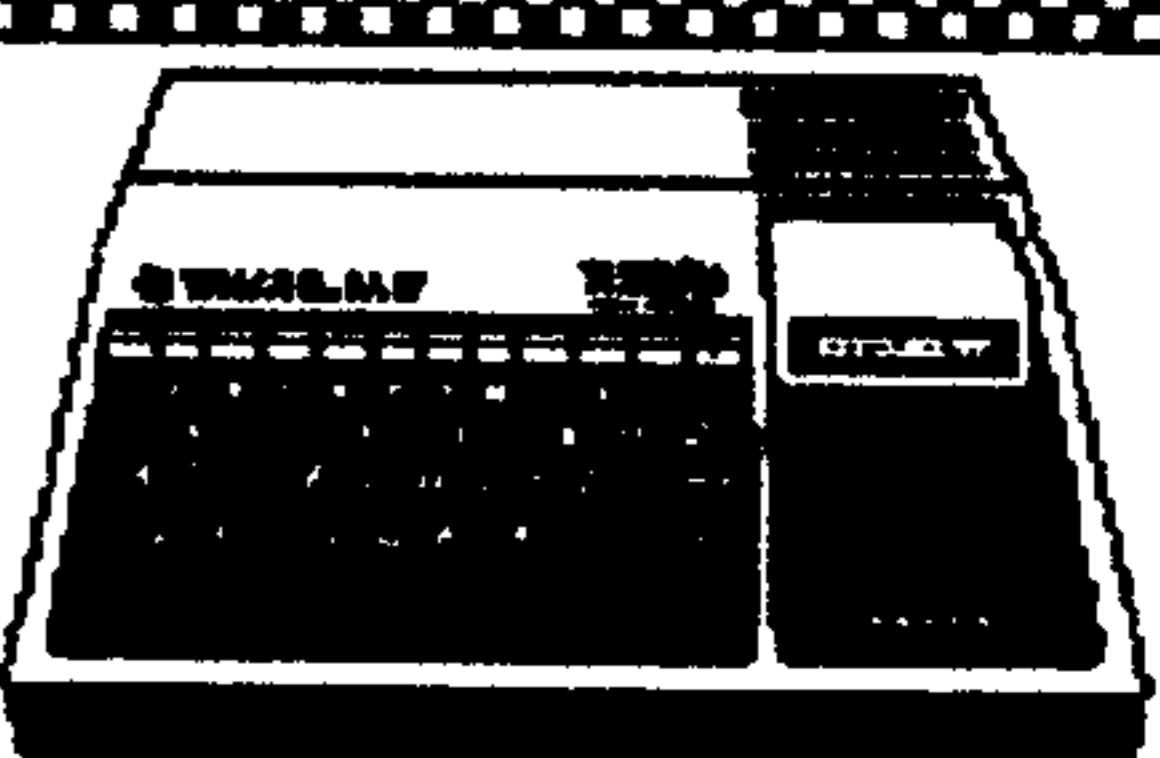
Memorial Chapel in Grand Rapids Aug. 16, with the Rev. Anders Goodwin officiating. Burial was in Oak Grove Cemetery.

Buckley is survived by his wife, Hilda; children Jan and Ron Carney, Tom and Kathy Buckley and Curt and Terri Buckley; eight grand children; a sister and brother-in-law, Kay and Richard Larson; and several nieces and nephews.

1990



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Newsbytes

Harrison program analyzes golf scores

Harrison Software is now producing Golf Score Analyzer, designed to keep track of golf activity and analyze a golfer's progress in the game. It has also updated its Word Processor.

Golf Score Analyzer, an assembly language program, operates under Extended BASIC, Editor/Assembler or TI-Writer and requires 32K memory and at least one SS/SD drive. It will autoloading from XB, and includes an installation program to use it from RAMdisk or floppies. The program is not compatible with the Geneve 9640. According to the manufacturer, it has room for about 360 rounds of golf in memory, using 91 sectors of disk space.

According to Bruce Harrison of the company, the program calculates all the statistics on a user's golf game "in the blink of an eye, including your current handicap, average scores by dates or courses, and even will show the best scores you've made hole-by-hole on any course."

The program comes complete one one SS/SD disk, with a printed manual and Harrison's phone number for customer support. Price is \$17 including S&H.

The updated Word Processor is described as providing for simple and easy installation of the program on RAMdisk, correcting a couple of minor bugs and making it easier to run the program from floppy drives other than Drive No. 1.

The update provides boot tracking so that the program always knows which drive it

was loaded from, whether DSK1 through DSK 9 or DSKA through DSKZ, and will go to that drive for any and all files needed from the program disk, according to the manufacturer. A one-page instruction sheet on how to install on RAMdisk is included with the update. Harrison is working on a version installable on a hard drive, but says it is "far from ready." Current owners may obtain the update for \$3.

Write Harrison Software, 5705 40th Place, Hyattsville, MD 20781.

Quality 99 sets sale

Quality 99 Software is offering the chance for customers to buy one disk and get another of the company's disks of equal or lesser value free.

The sale is by cash, check or money order only, no credit cards or COD, and extends to Dec. 31, 1990. Prices are as specified in Quality 99's pink catalog, No. 27.

To obtain a free catalog, send a stamped, self-addressed envelope to Quality 99 Software, 611 26th St. S., Arlington, VA 22202.

GENie announces flat monthly rate

The GENie online information service has announced the introduction, effective Oct. 1, of a flat subscription rate of \$4.95 (U.S.) per month including unlimited non-prime time access to more than 100

products and services.

The rate for U.S. access to the GENie products and services not covered under the flat monthly rate — such as personal computing bulletin boards, software libraries, financial services, value added services, chat lines and Real Time Conferences, Computer Assisted Learning Center and multi-player games — is \$6 per hour during non-prime time for 300, 1200 and 2400 baud, a \$4 per hour reduction in the current 2400 baud non-prime time rate, according to Bill Loudon, GENie general manager. The prime time rate remains at \$18 per hour for all three access speeds.

More than 60 percent of the 209,000 subscribers on GENie have 2400 baud modems, according to Loudon.

To access GENie Star Services in Canada, the monthly subscription rate is \$5.95 (Canadian), with a non-prime time rate of \$8 (Canadian) per hour for all three access speeds. Prime time rate is \$25 (Canadian) for all three access speeds.

The \$29.95 sign-up fee for the GENie service has also been eliminated for all new subscribers effective immediately, Loudon says.

After the first month, if a subscriber does not like it, he can cancel membership and the GENie service will refund the \$4.95 subscription fee. (This offer applies only to first time new subscribers to the GENie service, once per household.)

For further information in the U.S. and Canada on the GENie service, offered by GE Information Services, call 1-800-638-9636.

READER TO READER

Olden Warren, 4016 Weber Way, is working on an assembly language program in which he is attempting to send and receive asynchronous data through the RS232 interface of his CorComp 9900 Micro-Expansion system. He is attempting to poll the RS232 to determine when data has been received from the remote system but has not been successful. He would like to hear from anyone who could tell him how to poll the interface for incoming data. He notes that he has tried polling the External Interrupt (INT1) on the 9901 by testing its associated CRU bit (Address 0002) as well as testing some of the input CRU bits of the module itself (Base Address 1300) but has had no success.

Quinton Digs writes:

I would appreciate help on two problems. My knowledge of programming is limited. Both problems need a solution in TI BASIC.

1. There is an interesting sequence of numbers called the Fibonacci

numbers. The set begins with 0 and 1. Then each succeeding number in the sequence is the sum of the two previous ones. Thus, the Fibonacci sequence is 0,1,1,2,3,5,8 ... and so on. Write a BASIC program to compute and print out the first 20 numbers in the Fibonacci sequence.

2. A set of integers (whole numbers) is chosen at random from the set 1,2,3 and 4, and put in a Data statement. The end of the set is marked with the flag 9999. Write a BASIC program that will compute and print out the number of 1s, 2s, 3s and 4s in the set. Test your program on the following Data statement:

```
DATA 3,1,2,1,4,4,1,2,2,2,3,9999
```

Write Digs at Route 1, Box 34, Xenia, IL 62899.

Readers with specific problems or questions regarding the TI99/4A or Geneve may send them to MICROpendium, Reader to Reader, P.O. Box 1343, Round Rock, TX 768680 for publication in this column.

User Notes

Tips on DIR, auto-repeat

This comes from Jerry Stern, MICROpendium's Extended BASIC columnist. He writes:

In the August 1990 issues, Arthur Dubeau wrote about my program DIR, which was in the June issue. Arthur suggested changing the SEG\$ statement in line 470 from SEG\$(B\$,LEN(B\$)-2,3) to SEG\$(B\$,LEN(B\$)-1,3). Don't do it! Making that change will result in an incorrect number displayed for the record size. For example, a merge file would be shown as DIS/VAR63 instead of DIS/VAR163. I suspect that Arthur left out the blank space in the quotes in line 460, which would cause some of the problems he describes. The program as listed in the June issue runs correctly as it is.

If you like the auto-repeat function that Arthur has suggested, you might try this variation on his lines 530 and 540:

```
530 DISPLAY AT(2,1):"AGAIN? Y/N
N" :: ACCEPT AT(2,12)SIZE(-1)VALIDATE("yYnN"):A$
540 IF POS("nN",A$,1)=0 THEN 170
ELSE STOP
```

This repeat option allows small letters for "y" and "n" so the alpha lock does not need to be turned on, and the prompt is lined up with the letter "N" in the ACCEPT statement so that there is a default option of "No, not again" for the question. The negative size option of ACCEPT AT should be used for default values, rather than hiding a question mark under a blinking cursor. Line 170 is the correct restart point, which will not force the program to waste time setting up the variables that are already in memory.

Program calculates hourly rates

This following program was written by Larry Tippett of Model City, New York. The program is used to calculate the changing hourly rates in an automobile repair shop. Tippett notes, "It's crude ... however, it does work, and that's what is important."

```
60 !THIS PROGRAM WAS MADE UP
```

```
TO CALCULATE THE CHANGING
HOURLY RATES IN AN
AUTOMOBILE REPAIR SHOP !1
93
70 !IT PRINTS A CHART
CALCULATED IN TENTH OF AN
HOUR UP TO 10 HOURS. THIS
IS EXTREMELY HELPFUL IF
YOUR RATES CHANGE !207
80 !PERIODICALLY. MULTI-
PLIERS ARE INPUT STATE-
MENTS SO THIS CHART IS
FOR EVERYONE THAT WORKS
ON A TENTH OF AN HOUR
BASIS. !124
90 !SAVE DSK1.HOURLYRATE !03
4
100 HRLY$="HOURLY RATE=$" !1
33
110 CALL CLEAR !209
120 DISPLAY AT(12,3):"HOURLY
RATE CALCULATIONS" :: DISPL
AY AT(14,6):"PRESS ENTER TO
EXIT" !121
130 INPUT "WHO'S TIME SCHEDU
LE ":NAME$ !171
140 IF NAME$="" THEN 430 !11
8
150 INPUT "HOW MANY COPIES?
":COPY !223
160 INPUT "WHAT HOURLY RATE?
$":HR !226
170 FOR LOOP=1 TO COPY !106
180 T=.1 !059
190 OPEN #1:"PIO" !253
200 PRINT #1:TAB(40-(LEN(NAM
E$)/2));NAME$ !077
210 PRINT #1:TAB(40-(LEN(HRL
Y$)+5)/2);HRLY$;:: PRINT #1,
USING "###.##":HR;:: PRINT #1
:RPT$("_",80):: PRINT #1:RPT
$("_",80)!130
220 FOR I=1 TO 10 !105
230 PRINT #1:T;"=$";:: PRINT
#1,USING "###.##":T*HR;:: P
RINT #1:TAB(15);1+T;"=$";::
PRINT #1,USING "###.##":(1+T
)*HR;:: PRINT #1:TAB(30);!02
0
240 PRINT #1:2+T;"=$";:: PRI
NT #1,USING "###.##":(2+T)*H
R;:: PRINT #1:TAB(45);!166
250 PRINT #1:3+T;"=$";:: PRI
NT #1,USING "###.##":(3+T)*H
R;:: PRINT #1:TAB(60);4+T;"=
```

```
$";:: PRINT #1,USING "###.
":(4+T)*HR !057
260 T=T+.1 !080
270 NEXT I !223
280 PRINT #1:RPT$("_",80)!16
2
290 T=.0 !058
300 FOR I=1 TO 10 !105
310 PRINT #1:5+T;"=$";:: PRI
NT #1,USING "###.##":(5+T)*H
R;:: PRINT #1:TAB(15);6+T;"=
$";:: PRINT #1,USING "###.##
":(6+T)*HR;:: PRINT #1:TAB(3
0);!009
320 PRINT #1:7+T;"=$";:: PRI
NT #1,USING "###.##":(7+T)*H
R;:: PRINT #1:TAB(45);!176
330 PRINT #1:8+T;"=$";:: PRI
NT #1,USING "###.##":(8+T)*H
R;:: PRINT #1:TAB(60);9+T;"=
$";:: PRINT #1,USING "###.##
":(9+T)*HR !077
340 T=T+.1 !080
350 NEXT I !223
360 PRINT #1:RPT$("_",80)!16
2
370 FOR I=1 TO 6 !061
380 PRINT #1 !147
390 NEXT I !223
400 CLOSE #1 !151
410 NEXT LOOP !208
420 GOTO 110 !189
430 OPEN #1:"PIO" :: PRINT #
1:CHR$(12):: CLOSE #1 :: END
!093
```

Reminders for NotePad

This comes from Bill Gaskill, who writes a column about TI-Base that appears in MICROpendium. The Reminders system of program will be published over the next several months. Two of the programs — NPMENU and NPBROWSE — appear in this edition. He writes:

Reminders is a date tracking system designed to work with the NotePad screen editor that appeared in the February 1990 MICROpendium.

When NotePad is used to store date sensitive information, and the file name used to save that information to disk is written in MM/DD/YY format, the Reminders sys

(See Page 37)

User Notes

(Continued from Page 36)

tem can browse, print, read and search over 100 date files per disk. Each file can contain up to 57 lines of 40-column text.

Both the NotePad program and the programs that make up the Reminders system require the use of Brad Snyder's 40-Column XB Utilities.

SYSTEM OVERVIEW

The complete Reminders system consists of the following programs;

NPLOAD — Brad Snyder's program that creates the 40-Column screen display. It is a Fairware application and is available from him for \$7. Write to; Brad Snyder, 148 Ave. A, Palmerton, PA 18071.

NPMENU — the program that serves as the control center for the Reminders system.

NPBROWSE — a program to view all date files generated by the NotePad program, regardless of when they were written.

NPCALENDAR — a 28-column XB program to display or print a calendar for any year up to 1999.

NPCATALOG — a system utility for displaying or printing the contents of a disk, or for deleting user selected files from the disk.

NP — the previously published text editor that serves as the source for all reminder files that you generate.

NPSEARCH — a program to locate specific information between two dates or between two dates with a text string search parameter.

CREATING THE LOAD PROGRAM

Assuming that you have purchased the Brad Snyder Utilities, load the 40-XB file into memory, change the RUN "DSK1.DEMO" statement to read RUN "DSK.NP.NPMENU", and then save the program to the Reminders disk under the name **LOAD**.

FILE NAMING

Since Reminders is designed to track dates and store memos tied to dates, all file names attached to the memos you write for this purpose must be in date form. This means that the name of any memo you save must be a date. Up to 27 memos can be saved for a single day, using the file naming method explained below.

When in the NotePad program, after

pressing **S** to Save a memo, type in the date of the memo in MM/DD/YY format. For example, January 15, 1990 would be entered as 01/15/90. The slashes must be included in the file name, and only American date formats can be used, unless you want to alter the routines in the NPSEARCH program (to be published in a future issue of MICROpendium—Ed). If you have another memo that you need to record for the same day as one already recorded, add an A, B, C, D et cetera to the end of the date used for the second date file. In the above example, 01/15/90 was used as the name for the first memo of the day. The second memo would be named 01/15/90A. The third 01/15/90B et cetera. Using the alphabetical extension to a file name allows memos to be read sequentially in searches performed by the Browse and Search programs.

THE REMINDERS MENU

NPMENU is a point and shoot program that allows any of the programs on the system disk to be loaded, and it allows any text file to be read and displayed directly from the menu by pressing Fctn 7 (AID).

To select an option from the menu press **E** or **X** to move the arrow cursor (not Fctn **E** or Fctn **X**), and then press the Enter key to load the program being pointed to. Going past the last option on the menu, either while moving up or down, causes the arrow to "wrap" to the opposite end of the options list. So you can do anything wrong by holding the **E** or **X** key down too long.

To read a date or other file generated from NotePad press Fctn 7, and then type in the path and filename of the file to be read. Pressing Fctn 9 will abort the display at any point and return the menu.

BROWSE PROGRAM

Browse is the second option on the System Menu. To use it, simply enter the disk path to read date files from, and then press the Enter key. Verify that the path is correct by entering a **Y**, and then make sure that the data disk is in the correct drive.

When a memo appears on screen press **P** to print it, Enter to view the next one, **F6** to page through the memo on screen, or **F9** (BACK) to abort Browse. After all memos have been displayed, you are prompted to Insert the Program Disk and

press **F6** to exit.

Paging in both the Browse and the Search program provides 3 screens per memo just as the NotePad program does. The default screen is 1. Pressing Fctn 6 displays screen 2. Pressing Fctn 6 again displays screen 3. You may press the number 1 key at any time to go back to the top of the memo. Pressing Fctn 6 from screen 3 will cause the next memo to be searched for.

```
1 !NPMenu 07/29/90
   Bill Gaskill
   Grand Junction, Co. !251
2 !Requires Brad Snyder's
   40-Col Utilities !230
100 ON BREAK NEXT :: CALL KEY(3,K,S):: CALL LINK("CLS"):
: CALL LINK("TEXT",16,5):: CALL LINK("LOWCAS")!120
110 CALL CHAR(124,"0010F88484F81000",125,"000000000000FF00",126,"00FF")!131
120 CALL CHAR(129,"FF00FF0000000000404040404040404000000000FF00FF8080808080808080")!037
130 ON ERROR 360 :: CALL LINK("DISP",1,9,"NotePad Reminders v1.0"):: X=4 !019
140 CALL LINK("HORZ",3,3,126,36):: CALL LINK("DISP",4,2," - NotePad")!232
150 CALL LINK("DISP",5,2," - Browse reminders"):: CALL LINK("DISP",6,2," - Calendar display/print")!032
160 CALL LINK("DISP",7,2," - Catalog Contents of a disk"):: CALL LINK("DISP",8,2," - Search reminders")!234
170 CALL LINK("HORZ",10,1,126,40):: CALL LINK("HORZ",4,2,124,1)!073
180 CALL LINK("HORZ",22,1,126,40):: CALL LINK("HORZ",4,2,124,1)!076
190 CALL LINK("DISP",23,3,"Arrow keys to point, ENTER to load.")!028
200 CALL LINK("DISP",24,5,"Press Fctn 7 (AID) to read file")!249
210 CALL KEY(3,K,S):: IF S=0
```

(See Page 38)

User Notes

(Continued from Page 37)

```

THEN 210 ELSE IF K=1 THEN 3
90 ELSE IF K=15 THEN 490 !19
5
220 CALL KEY(3,A,B):: IF A=6
9 THEN X=X-1 !187
230 IF X<4 THEN X=8 :: CALL
LINK("HORZ",4,2,32,1)!224
240 CALL KEY(3,A,B):: IF A=8
8 THEN X=X+1 !187
250 IF X>8 THEN X=4 :: CALL
LINK("HORZ",8,2,32,1)!229
260 IF A=69 THEN CALL LINK("
HORZ",X+1,2,32,1)!129
270 IF A=88 THEN CALL LINK("
HORZ",X-1,2,32,1)!131
280 CALL LINK("HORZ",X,2,124
,1):: IF A=13 THEN 300 !102
290 GOTO 210 !033
300 ON X-3 GOTO 310,320,330,
340,350 !103
310 GOSUB 480 :: RUN "DSK.NP
.NP" !166
320 GOSUB 480 :: RUN "DSK.NP
.NPBROWSE" !126
330 GOSUB 480 :: RUN "DSK.NP
.NPCALENDAR" !232
340 GOSUB 480 :: RUN "DSK.NP
.NPCATALOG" !168
350 GOSUB 480 :: RUN "DSK.NP
.NPSEARCH" !098
360 RUN 370 !229
370 CALL LINK("DISP",23,1,"
Unable to access that progra
m. Press any key to retur
n to the menu. ")!126
380 CALL KEY(3,A,B):: IF B=0
THEN 380 ELSE RUN !194
390 CALL LINK("DISP",2,3,"Fi
lename:DSK1."): CALL LINK("
ACCEPT",2,12,-27,"",FN$)!158
400 IF FN$="" THEN 100 ELSE
OPEN #1:FN$,INPUT ,DISPLAY ,
VARIABLE !098
410 CALL LINK("HORZ",11,1,32
,440):: R=11 !084
420 LINPUT #1:B$ :: IF EOF(1
)THEN 440 :: CALL KEY(0,S,K)
:: IF S=15 THEN 440 !219430
CALL LINK("DISP",R,1,B$):: R
=R+1 :: IF R>21 THEN 450 ELS
E 420 !217
440 CLOSE #1 :: F=1 !023
450 CALL LINK("DISP",23,1,"
Press any key to continue..
.. "):: CALL LINK("HOR

```

```

Z",24,1,32,40):: CALL KEY(0,
K,S):: IF S=0 THEN 450 !220
460 IF F=1 THEN 100 ELSE IF
R>19 THEN 410 ELSE 420 !173
470 CALL LINK("HORZ",23,1,32
,80):: RETURN !114
480 CALL LINK("GSTRN",X,5,S$
,35):: CALL LINK("CAPS",S$):
: CALL LINK("DISP",X,5,S$)::
RETURN !060
490 STOP !152

```

```

1 !NPBrowse 07/29/90
Bill Gaskill
Grand Junction, Co. !152
2 !Requires Brad Snyder's
40-Col Utilities !230
100 ON BREAK NEXT :: CALL LI
NK("CLS"): CALL LINK("TEXT"
,16,5):: GOSUB 460 !187
110 ON WARNING NEXT :: DR$="
DSK.NP." :: CALL LINK("DISP"
,2,12,"Browse Reminders")!07
9
120 DIM A$(66):: ON ERROR 43
0 :: CALL KEY(3,K,S)!012
130 CALL LINK("DISP",22,3,"I
nsert memo disk, enter path.
"): CALL LINK("DISP",13,3,"
Path:"): CALL LINK("DISP",1
3,8,DR$)!115

```

```

140 CALL LINK("ACCEPT",13,
-22,"",DR$):: IF DR$="" THEN
CALL LINK("HORZ",22,3,32,35
):: GOTO 170 !121
150 CALL LINK("DISP",18,3,"C
orrect? (Y/N):"): CALL LINK
("ACCEPT",18,18,-1,"YN",YN$)
!142
160 CALL LINK("HORZ",22,3,32
,35):: IF YN$<>"Y" THEN 130
ELSE 180 !211
170 CALL LINK("DISP",23,3,"
Insert Program Disk,Press
F6"): CALL KEY(3,S,K):: IF
S=6 THEN 100 ELSE IF S<>12 T
HEN 170 :: ON ERROR 430 :: R
UN "DSK.NP.NPMENU" !184
180 CALL LINK("CLS")!176
190 OPEN #1:DR$,INPUT ,RELAT
IVE,INTERNAL :: INPUT #1:F$,
E,E,F !172
200 CALL LINK("DISP",2,3,"ME
MO DISK:"): CALL LINK("DISP
",2,13,F$)!192
210 FOR H=1 TO 127 :: INPUT
#1:G$,D,E,F :: H$=STR$(H)::
CALL LINK("DISP",24,38,H$)
92
220 IF LEN(G$)=0 THEN 340 EL
SE IF SEG$(G$,3,1)<>"/" THEN
(See Page 6)

```

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