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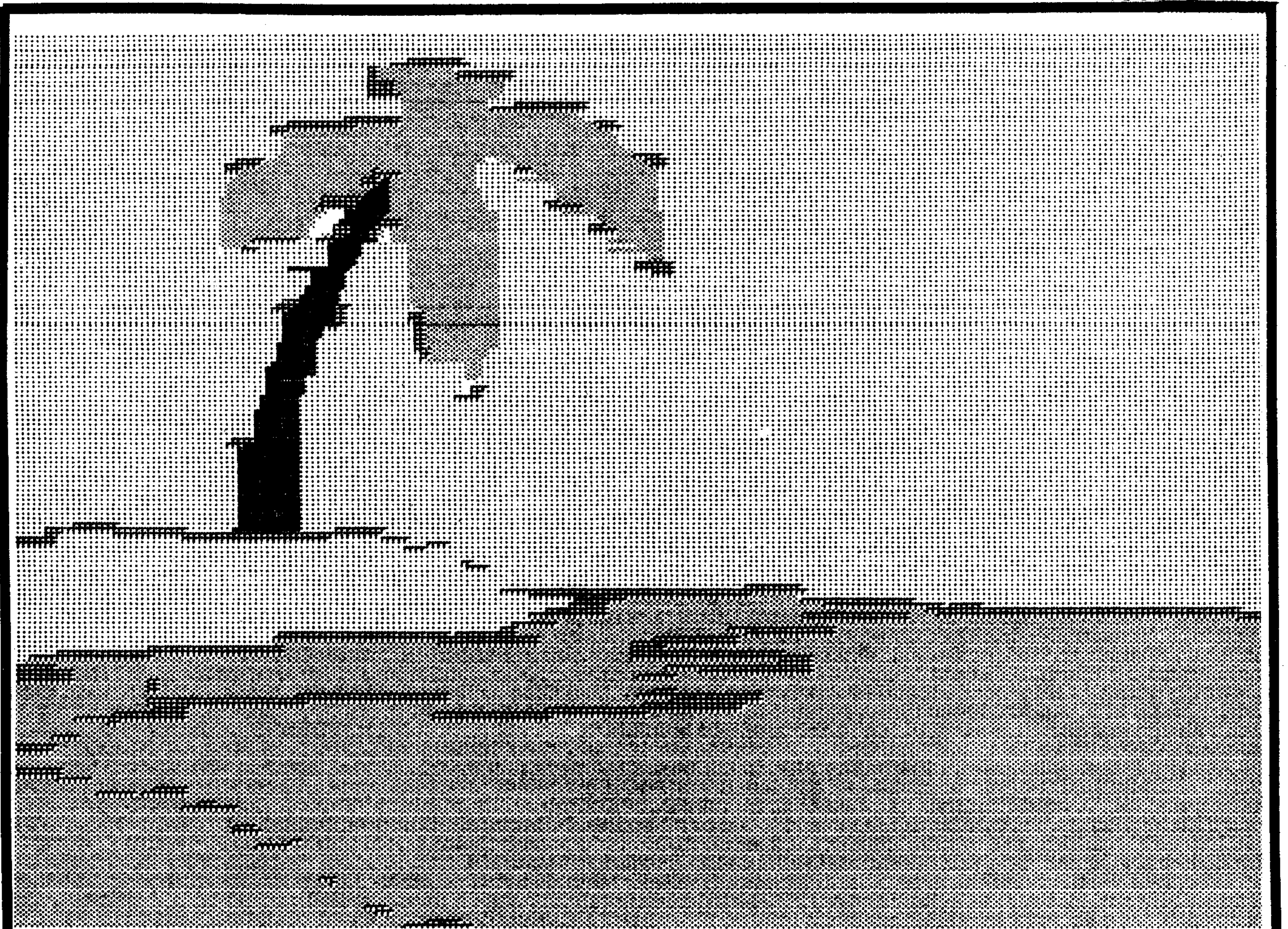
# MICROpendium

Covering The TI99/4A Home Computer And Compatibles

Volume 2 Number 2

March 1985

\$1.50



## A Mate for Super Sketch

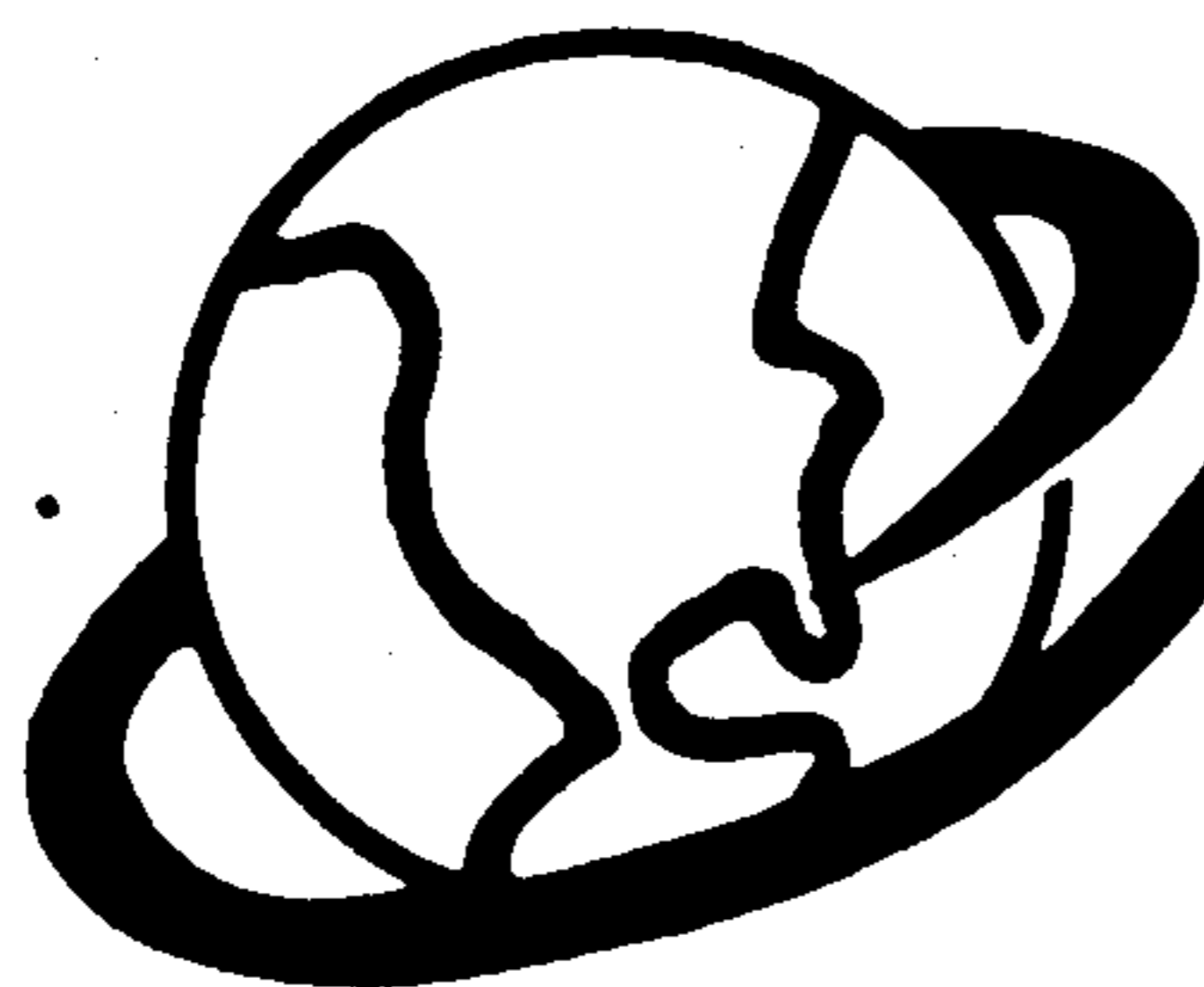


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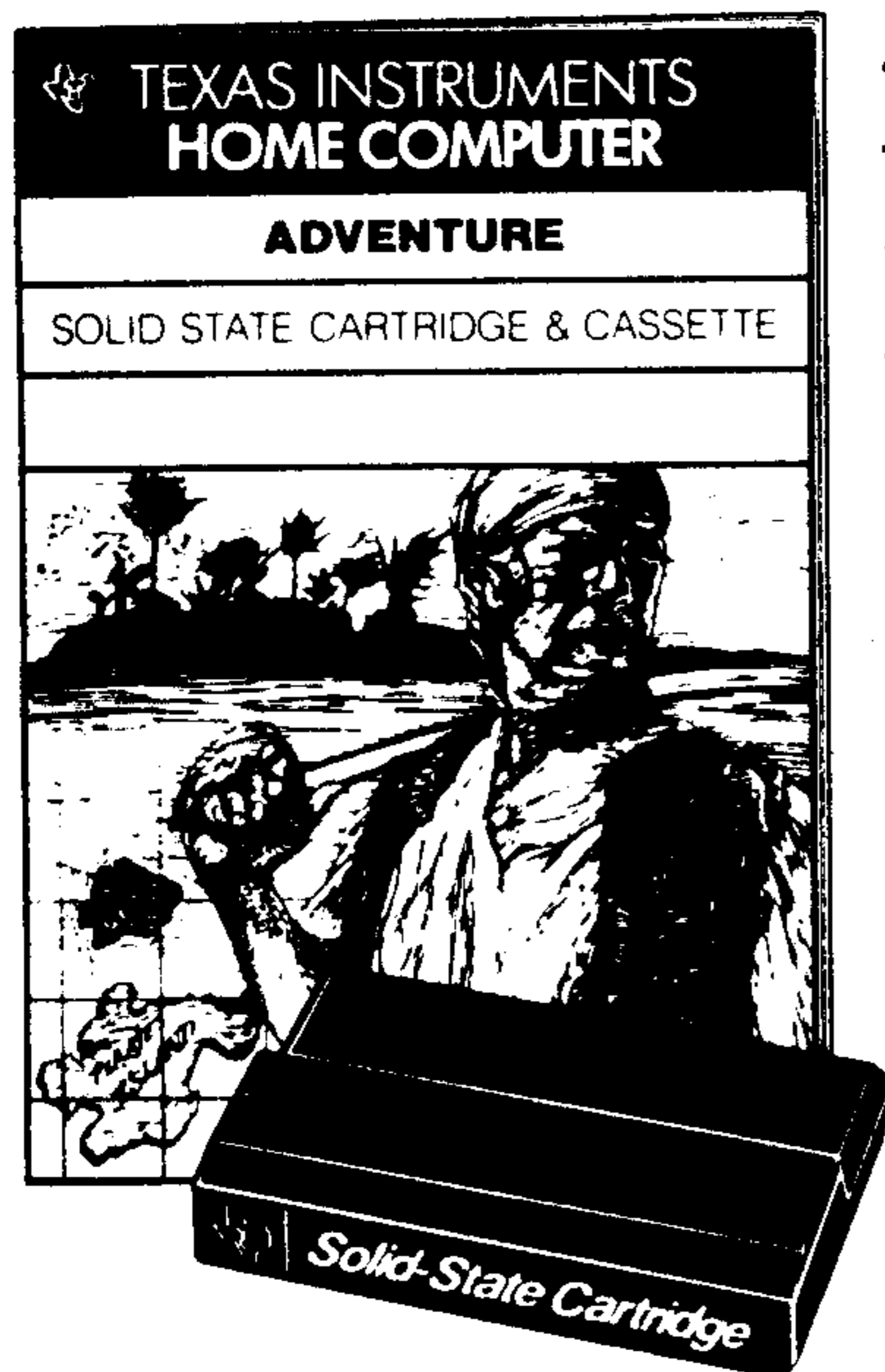
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# Contents

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John Koloen . . . . . Publisher  
Laura Burns . . . . . Editor

## Coming Next Month

- Graphics for beginners
- Review of Gemini printers
- Several very useful and amusing utilities

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# Table of Contents

## Touring the boards

A rundown on a variety of electronic bulletin board systems that operate on the TI .....Page 12

## The computer revolution

If the medium is the message, what is the electronic age telling us? Frankly, we can't tell yet. ....Page 19

## It's coming, it's coming!

At last, a TI-compatible computer has a scheduled date and place to make its debut. ....Page 21

## An Acorn from Oak Tree

The Acorn 99 database program is released .....Page 22

## A quiet little box

Cor-Comp's 9900 expansion system. ....Page 23

## Reviews

Morning Star Software CP/M Card.....Page 24

WDS/100 Winchester Disk Drive .....Page 28

Sketch Mate.....Page 30

BMC Color Monitor .....Page 31

## Freeware (or nearly so)

Our offers, and those of others. ....Page 33

## Newsbytes

A mail program out of TI-Forth, a program to help you beat the odds, and ways to keep up with your credit cards .....Page 34

## User Notes

Rewriting the dictionary, cooling down the console and a quick way to find out how much space is left on your disks .....Page 35

**Classifieds** .....Page 38





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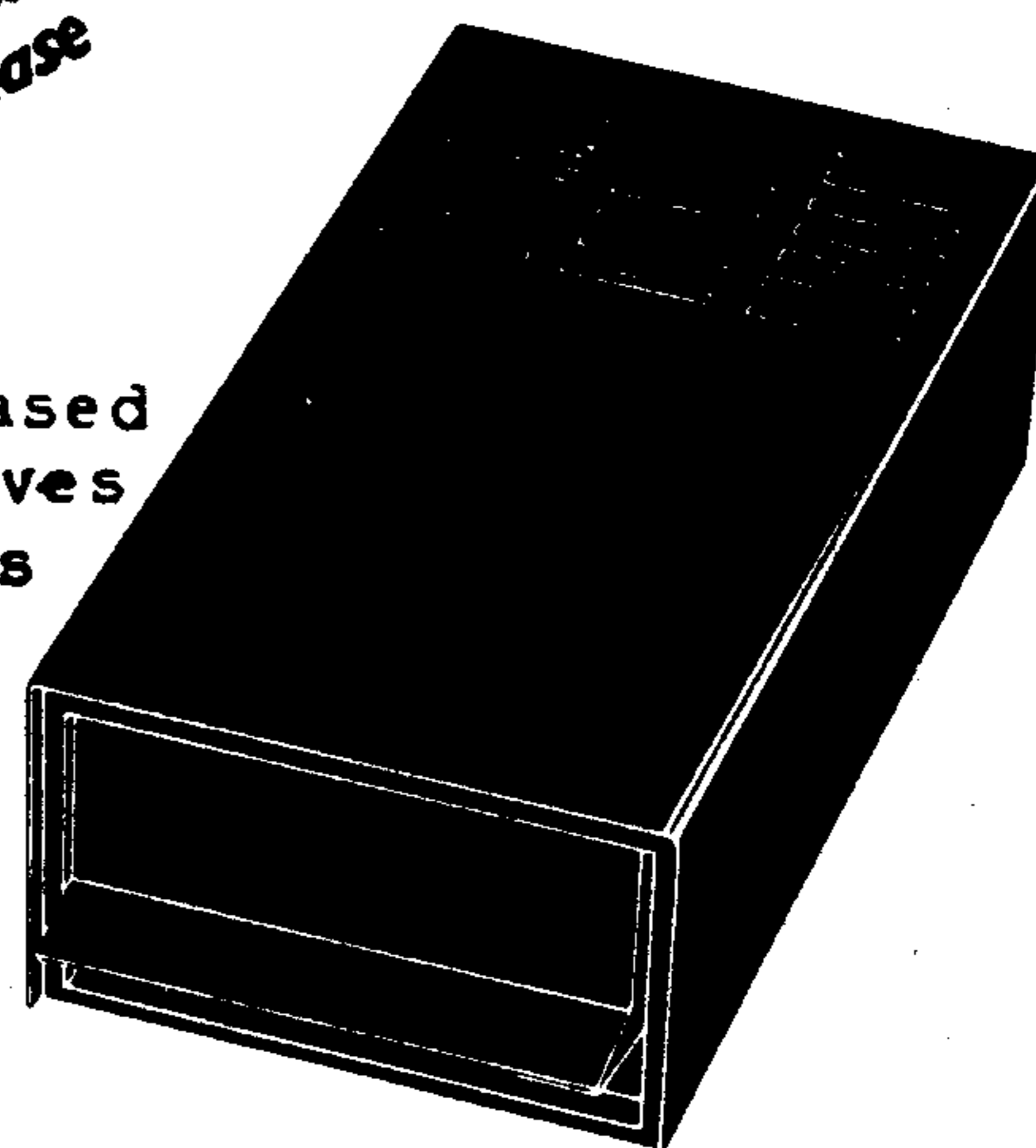
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# Comments

## Odds and ends

There appears to be a new TI99/4A compatible computer on the horizon. You'll find a story inside that provides an outline of what its features are expected to be, including 128K RAM and possible 80-column capability. One thing not mentioned in the article is the location of the GROM port for use with TI cartridges, a must for any TI compatible unit. As I understand it, there will be a GROM port but the manufacturer has yet to decide whether to build it into the console or to provide it as an attachment.

Meanwhile, what's happening with co-processors? According to Foundation Computing, a great deal. Orders for the company's Z80A/80-column cards have come in so heavily that Foundation has been sending out letters to purchasers notifying them of delivery delays. (This issue contains a review of the Morning Star Software CP/M co-processor card.)

Another note on Freeware: We've been receiving a number of diskettes for Freeware that were sent to us

without return postage or mailers. Anyone who has waited longer than a month to receive Freeware from MICROpendium should send us a stamped, self-addressed mailer. We recommend that each mailer include about 45 cents of postage for each disk that was sent to us, just to be on the safe side. Please, do not call us on this as we cannot afford to return long-distance calls concerning overdue Freeware.)

We have begun filling orders for the Extended BASIC Forth loader. The loader was perfected by Tom Freeman of the Los Angeles 99ers Computer Group. Included on the disk are four files: FORTH-SAVE, FORTHXB, LOAD AND DSRLNK. The original program was written on a double-sided disk and included the Forth system screens. However, these would not fit on a single-sided diskette. Instructions on loading the program and its use with TI-Forth are included with the loader.

That's all for now.

—JK

## Reviewed in MICROpendium

Listed below are the products that have been reviewed in MICROpendium and the issues in which the reviews appeared.

B-1 Nuclear Bomber	February
Tandon TM-100 Disk Drive	February
Void	February
Beanstalk Adventure	February
Microsurgeon	February
On Gaming	February
Database 500	February
Star Trek	March
Escape From Balthazar	March
Garkon's Getaway	March
Sky Diver	March
Mail-Call	March
Prowriter 8510 Printer	March
Monthly Budget\$ Master	April
Budget Master	April
Home Budget	April
Thief	April
Donkey Kong	April
Khe Sanh	April
Companion Word Processor	May
Q*Bert	May
Mad-Dog I&II	May
Programs for the TI Home Computer	May
Creative Expressions Accounts Receivable/Accounts Payable	June
CDC 9409 Disk Drive	June
Starship Concord	June
Lost Treasure of the Aztec	June
ASW Tactics II	June

Theon Raiders	July
Introduction to Assembly Language for the TI Home Computer	July
Game of Wit	July
Pole Position	July
TE-1200	August
Tower	August
Galactic Battle	August
Galaxy	August
Wycove Forth	September
99/4 Auto Spell-Check	September
QUICK-COPYer	September
Wizard's Dominion	September
Anchor Automation Mk XII Modem	September
Killer Caterpillar	October
ZORK I	October
Defender	October
9900 Disk Controller Card/Manager	November
Super Bugger	November
Transtar 120S Printer	November
Floppy-Copy	November
Data Base-X	November
Gravity Master	December
Data Base Manager System	December
Learning 99/4A Assembly Language Programming	December
Super Sketch	January
Foundation Computing 128K Card	January
PTERM-99	January
TI-Runner	January
Super Extended BASIC	February
Beginning Assembly Language for the TI	February
ZORK II	February



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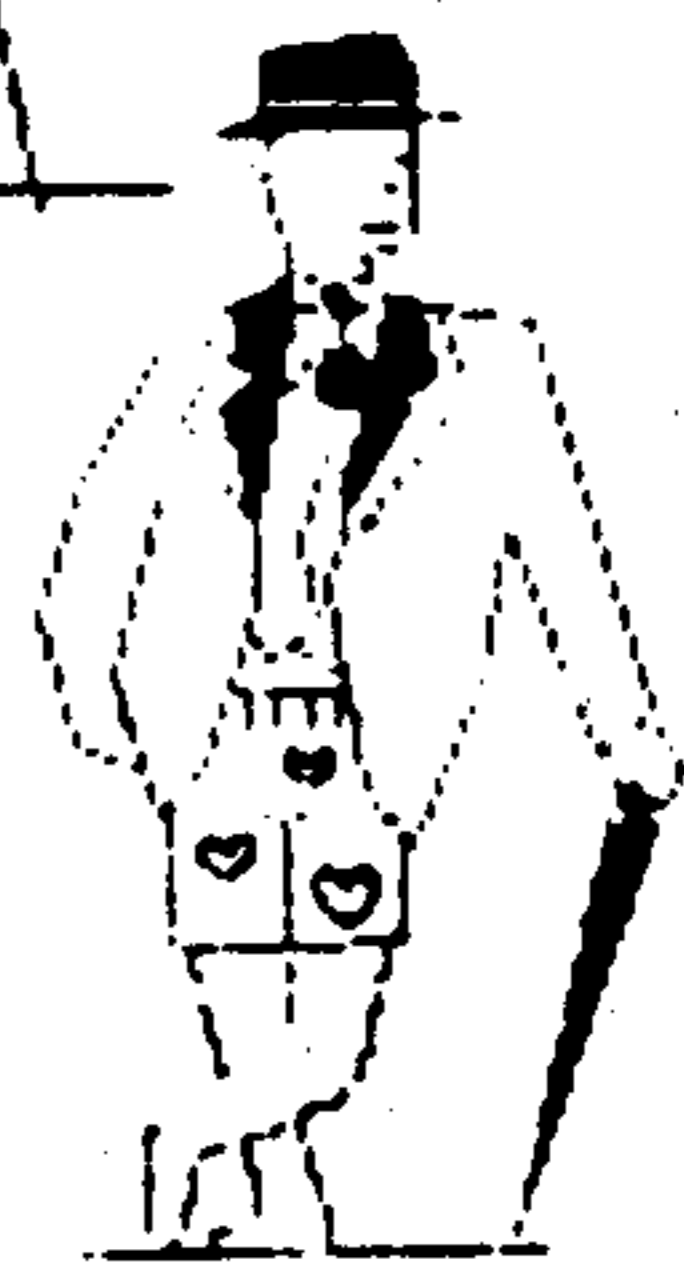
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# Feedback

## Forth comparisons

Having read Hector Santos' comparison of TI Forth with Wycove Forth, I think you might find my point of view interesting.

The amazing thing about the article is that Mr. Santos examines many of the differences between Wycove Forth and TI Forth, explains why the Wycove Forth implementation is superior (except in the case of the 64-column editor and the TI utility menu) and then decides that TI Forth is a better buy! How are we to compete with a company (Texas Instruments) that half develops a product, then releases it as public domain material? Wycove Forth is the most powerful language available for the 99/4A, and according to our customers is far superior to TI Forth. At \$50 it is priced very reasonably. Yet Mr. Santos is not prepared to suggest that 99/4A owners spend a few more dollars to get a complete implementation of Forth designed to support their whole machine.

Mr. Santos mentions that Wycove Forth as delivered does not support direct disk copying. We have developed this support code (as well as RS232 and PIO direct access) and supply it to our customers free on request. We use standard DOS calls to make such code optional. Because of this Wycove Forth works on any standard disk system—double sided, double density or both—without modification. The non-standard code is available for TI cards only—we can't be sure that it will work on cards by other manufacturers. This is exactly why it is not included.

Finally, I would like to say that Wycove Forth has opened up the 99/4A as a new machine. It is faster on several benchmarks than an IBM PC. The graphics are better than on an Apple. When I was programming in Basic, I found the machine too slow to enjoy. In Assembler, even the simplest programs take forever to write. But in Wycove Forth I've

had the power to write the programs I want to write.

Tim MacEachern  
Vice President, Wycove Systems  
Ltd.  
Dartmouth, Nova Scotia

## Phoenix to arise?

Your January edition still kept the hope alive that CorComp might still release the "Phoenix" super-computer for sale. I have written to them and would ask you and all who read this to do the same. The more interest they see expressed in their computer, the more inclined they will be to release it. Don't sit back thinking everyone else will write; they are probably doing the same thing. Everyone write and express your desire to see the "Phoenix" released for sale. I believe the TI99/4A base is strong and widespread and could easily support a computer like the "Phoenix."

Thomas W. Austin  
Valdosta, Georgia

## Cleaning program

I read several months ago that one manufacturer of disk head cleaning kits had a program that caused the disk head to stay in contact with the disk cleaning pad for 30 seconds, but, alas, I was not able to find one of the kits. Since then I have been trying to figure out a program that accomplished this and believe that the following program does just that.

```
10 ON ERROR 30
20 RUN "DSK1.LOAD"
30 ON ERROR 40
40 RETURN
```

Steve Lisonbee  
Orem, Utah

## DB and Multiplan

There appears to be a proliferation of data-base programs, many of which have been reviewed in these pages. I most certainly appreciate

the efforts of the developers concerned.

However, it seems to me that a very desirable feature of such software would be the transferability of files to/from Microsoft Multiplan. Since Multiplan files can be read by TI Writer, these three programs would form the core of an integrated information processing package a la Lotus 123.

The reviews I have seen so far make no mention of Multiplan accessibility. I have no doubts that there would be a large market for a DB program with such a feature. I for one would purchase it right now.

Go to it, fellas!

Tom Elgart  
New Jersey

## "Disk Labels" error

In the January issue, there is an error in "DISK LABELS" line 250. The last "Type", "Size" should be "Size", "Type".

Harry G. Bieker  
Burbank, California

## A parable

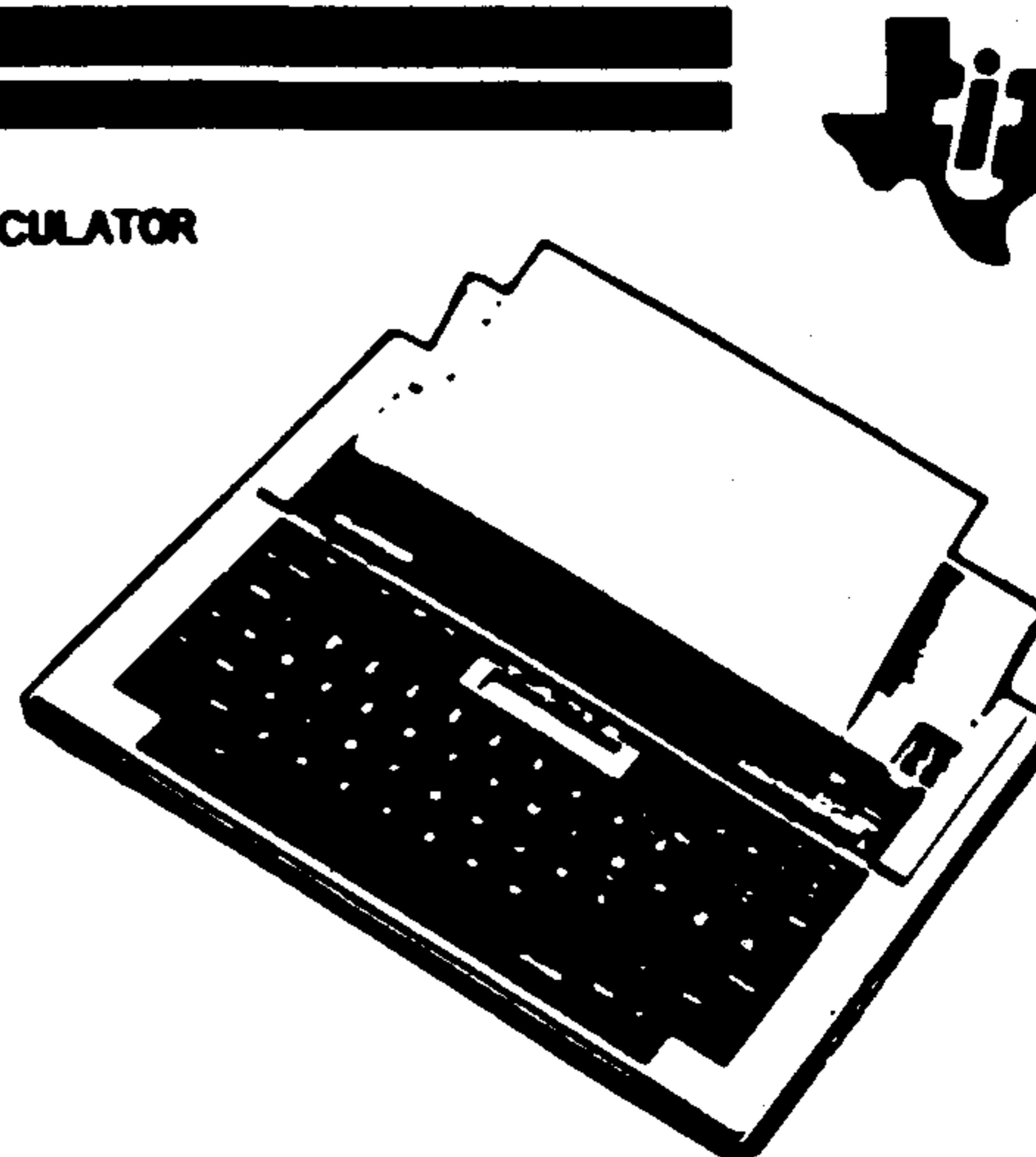
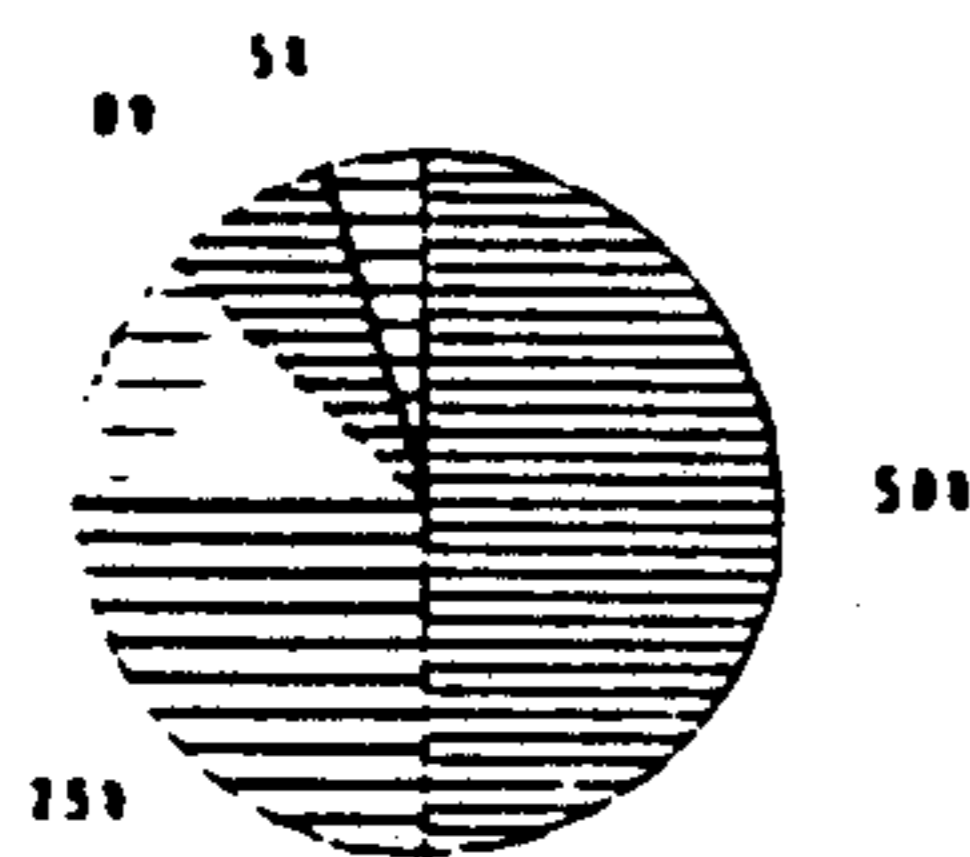
Long long ago in a far away country, there were two brothers who were made orphans due to cruel, unfeeling FATE. They were left a marvelous gift, however, which made their status a bit easier to accept. They were bequeathed a marvelous machine, a machine which, given the right supplies and raw materials, could do virtually anything! The orphans knew they could make the machine do some work on their own but would need to find a source of these other tools to keep themselves and their machines functioning. They looked around their valley and saw all of the things required to supply their machine.

Being newly orphaned, and both being equally naive, they began to gather all the tools and supplies they could. They took from every source they could find...the trees, the plains, the streams and lakes. The

(Please turn to Page 10)



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# Feedback

(Continued from Page 8)

machine did things it had never done before...wonderful things, marvelous things! The orphans were happy and content.

But one day one of the orphans (the wiser of the two) looked about the valley and saw that the land, the trees and the crops had begun to wither and begin to die off. He ran to the other orphan and said: "We have taken much from the land and it has supported our machine nicely. I fear, though, that, unless we give something back and nurture the land, replenish it, soon all will be gone!" The duller orphan laughed, "RIDICULOUS. The land will always produce for us and the machines and we orphans will always be fed!" He continued to take and rape the land for all it was worth. He took even things he had no need for! Wastefully, wantonly!

The wiser orphan knew something must be done! He went to the village and spent what little monies he had. He bought fertilizer, seeds and tools to refurbish and strengthen the land. He worked hard to encourage the growth of new crops. The duller orphan laughed: "Why are you spending your money? The land has always provided for us FREELY and always will!"

But the wiser orphan saw the land differently...he saw the once full fruit trees grow barren, the rich streams run dry. He knew that, despite his work and spending, it was too late. The continued stealing by his brother orphan was too much. He could not make a difference. He sadly realized it was too late. And it was. Despite his efforts the remaining foodstuffs and supplies for their marvelous machine finally were depleted. The machine, which gave them all, ground to a silent halt. The orphans no longer had supplies that were once so easily gathered from the land. All was lost and the end had arrived for the orphans and their marvelous machine.

**Lessons from the parable:**

1. Nothing is forever free (i.e. "there is no such thing as a free ride").

2. To keep the "land" productive, we HAVE to put something back into it.

3. The misdeeds of the "takers," if left unchallenged, destroy all.

Ronald G. Albright, M.D.  
Secretary, Valley 99ers Users Group  
Columbus, Georgia

## Long live TI!

I would like to state my opinion on TI's leaving the home computer market. I feel the main reason they left was poor advertising. If I hadn't seen what this machine could do by my friend's demonstration, I might have never bought one. But I am glad I did! The machine offers unlimited possibilities. I have had it for two years now, and I am still constantly discovering new tricks, even though I have mastered TI's BASIC already. In rebuttal to Earl Hall's claim that the TI "is a lousy machine" and "difficult to grasp," I must say that I am 16 years old, have had four years' experience on the Apple II and II+, and I could program the machine quite well within a matter of a few weeks! I'd pick the TI over the Apple II+ any day!

But Texas Instruments, instead of advertising this power, concentrated on educational games. SO WHAT??! More than 90 percent of the computer owners buy their machine TO PROGRAM WITH. They can always worry about the education later. TI tried to demonstrate the TI-99 in stores, but these demonstrators didn't know much more than how much memory the machine had! If TI had had the right advertising (and hadn't sold the machine for lower than production cost), they would still be here today.

However, the TI market is far from dead! Many third-party companies have moved in to give a better-than-ever software market for the TI-99. I hope my fellow 99ers

out there don't give up either. If the consumers give up, THEN the TI market will have problems. But I know people like me will never abandon their machines. I want those other 99ers who joined the TI bandwagon when Texas Instruments went out to know that there is support, both by the companies AND especially the veteran 99ers. DON'T GIVE UP!!! Here I agree with and quote Mark Keeler (Dec. '84): "LONG LIVE THE 99!"

Carlo Angelico  
Philadelphia, Pennsylvania

P.S. To those 99ers with an Editor/Assembler package: If you can't figure out assembly language (and even if you can), the Editor/Assembler makes a handy word processor! That's what I used to write this letter. Just type in your work like a program, then save it to disk. (Here you may want to examine the editing capabilities in the manual.) Press '4', then for FILE NAME type in the name you saved it under, and press enter. Now type in the RS232 port and baud rate, and press enter. There is your letter (etc.).

## Fooling XBASIC?

Do you or does anyone out there in readership land know how to "fool" the Extended BASIC into allowing more than 140 characters per line? I have a program that I purchased that exceeds this limit. I am curious to know how this is done.

Kenneth Devlin  
Orlando, Florida

The Feedback column is for readers. It is a forum to communicate with other readers. The editor will condense excessively lengthy submissions where necessary. We ask that writers restrict themselves to one subject for the sake of simplicity. Our only requirement is that items be of interest to persons who use the TI99/4A home computer. Mail Feedback items to: MICROpendium, P.O. Box 1343, Round Rock, TX 78680.



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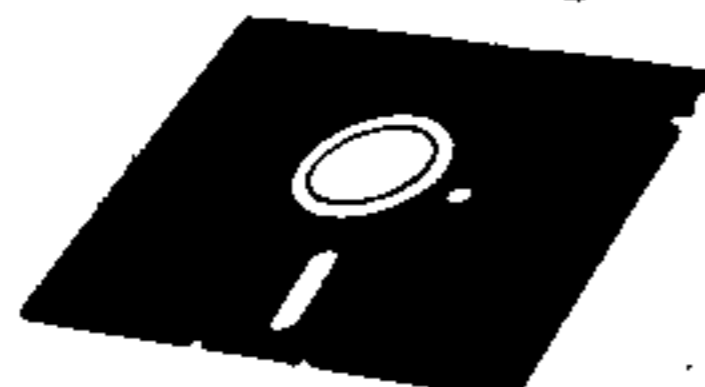
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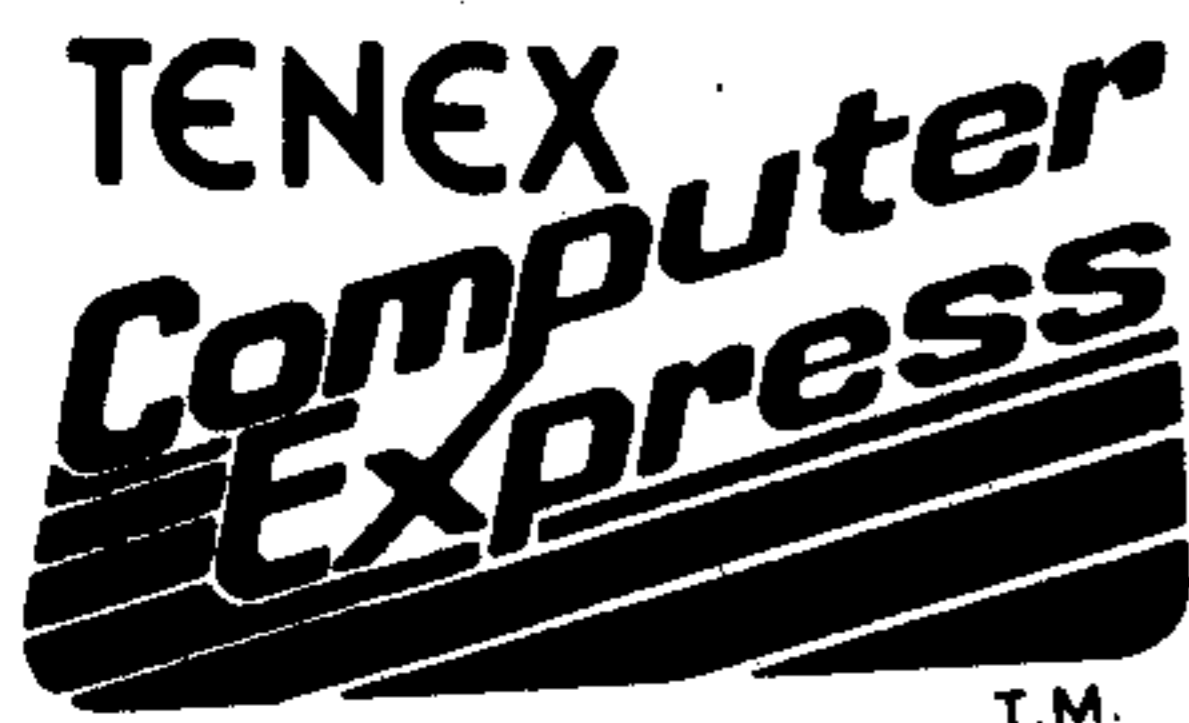
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# Touring the boards

By RON ALBRIGHT

One of the great joys of my life is to visit as often as I can with some very special friends. These nice people let me use their equipment, borrow their programs, use their files, and tie up their phone lines. Must really be lifelong friends, you must be thinking. Well friends they are but not lifelong. Further, I've never met a single one of these dear friends.

Well, if you haven't figured out what these ravings are leading to, I'll tell you: these friends are your friends, too. They are the Systems Operators ("Sysops," for short) of the various TI-related bulletin boards across the country. This article will hopefully entice more of you to visit with these "friends of the TI" and enjoy their handiwork. It is a brief guided tour of the various systems and a few tips on their use.

Believe it or not, I know of five completely different bulletin board systems that run on TI computers. They are as follows:

1. TIBBS (tm Ralph Fowler)
2. TI-BBS (written and sold through the Chicago Users Group)
3. CALTEX (copyrighted and sold by CALTEX SOFTWARE, San Jose, California)
4. TI-COMM (written, predominantly, by John Clulow, public-domain)
5. Various one-of-a-kind systems. I'm aware of two unique systems. One, written by Mark Hagedorn and run by Sysop Gary Blydenburgh called the 99BBS SYSTEM (617-664-5988) has a download section which requires the user to run a special download program from Extended BASIC to obtain programs (the program listing is free and online for downloading as a text file). Another entirely different system is run in Houston, Texas, by a Sysop named "Captain Kirk." The BBS is called (what else?) the USS Enterprise (713-466-0701). To say the least, an unusual system!

I would like to touch on each sys-

## Believe it or not, I know of five completely different bulletin board systems that run on TI computers.

tem briefly and perhaps give you an idea of some of the ins-and-outs of these systems.

First, and most prevalent, are the TIBBS systems. This system was written by Ralph Fowler of Kenesaw, Georgia. It is the most well-known of all the boards for the TI. It most recently has been released in a new version which now sports true TEII program transfers (portions of this written by Randy Jones of Raleigh, North Carolina). I have seen these transfers available on the Raleigh TIBBS (Sysop Amnon Nissan, 919-851-8460. Wichita TIBBS (Sysop Jerry McCluskey, 316-681-3167, and, of course, the TIBBS "flagship" station in Atlanta (Sysop Ralph Fowler, 404-425-5254. The transfers work fine but are just as slow as they were on The SOURCE—20 seconds per sector (i.e. 10 minutes for a 30-sector program). Also, I have a unique problem with the TEII downloads. I have a multiuser phone system. It seems that these transfers are very sensitive to being "errored out" by any clicks, beeps or rings on a phone line. I suspect that "call waiting" will do the same. Raleigh has the largest download selection and is regularly updated; Wichita has some Pascal programs among others; the Atlanta TIBBS seems to discourage hot program downloads...it has long been Fowler's opinion that TIBBS are for information exchange and if people spend all their time downloading

programs, the message base suffers.

TIBBS systems that, to the best of my knowledge, do not have TEII transfer protocols as yet but are outstanding boards in their own right are:

Philadelphia TIBBS (Sysop Tom Burke, 215-927-6432)—totally unique TIBBS, virtually completely modified by the sysop; unique features include: Joke section, TI Forum (an on-going file section for presentation of opinions on a wide range of topics); and original text-file programs. Also, the sysop has an access level scale: first-time callers will have to be upgraded to access certain areas of the board.

HUG TIBBS (Sysop Stephen Foster, 713-699-2073)—perhaps has the most technically oriented message abase of all the TIBBS. Some real hardware/software geniuses frequent this system. Recently adopted the Philly TIBBS format with multiple file areas, marvelous file areas which are frequently updated. Active dealer section.

SPIRIT of 99 TIBBS (Sysop Gale Ringley, 614-451-0880)—truly a marvelous TIBBS; outstanding file content and maintenance with file dealing with Forth, Assembly and Extended BASIC. Text file programs changed weekly. Features on-line TI store with catalog and ordering available from extensive stock of TI software and hardware.

(Please turn to Page 14)



## Foundation Computing 128K Memory Expansion Card

# Equipment to emulate

By JOHN KOLOEN

Foundation Computing's 128K memory expansion card is a product that has remained unique in the TI marketplace. The card has been out for more than a year, and still there are no imitators.

Since introducing the card, Foundation has made a significant improvement to it by marketing Disk File Emulator firmware that allows users to access the extra memory in a straight-forward manner. Prior to the availability of the Disk File Emulator several months ago, the card was of greatest use to those who used it in programming and could write programs to access the cards 128K of Random Access Memory. The Disk File Emulator chip option changed all that, making three 32K memory banks easily accessible to even casual users.

Purchasers may order the 128K card without the emulator firmware, but I do not know why anyone would want to. For an extra \$35 or so the company will ship the card with firmware implanted, and I recommend the firmware option to any would-be purchasers. It is the brains of the outfit, so to speak.

**Performance:** With the exception of the activity light in the front the card (which is green), once it is installed in the PEB a user is not likely to notice any difference between the Foundation card and the standard TI issue. The card itself is as sturdy as a TI card and fits the PEB like a glove.

The card actually consists of four memory banks. The lower one functions in the same manner as the standard 32K of RAM found in the TI card, and the other three banks have 32, 32 and 24 kilobytes of RAM, respectively. 8K of the last bank is used for the disk emulator software.

The upper three memory banks provide the user with potential not available in any 32K card. Although it is possible to address these banks

## Review

### Report Card

Performance: ..... A

Ease of Use: ..... A

through such cartridges as TI-Writer and Microsoft Multiplan.

Basically, the emulator allows the user to access the upper three memory banks in much the same way as one would access a disk drive. Only the names are changed. Instead of entering DSK1 to represent disk

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# BBOARDS—

(Continued from Page 12)

## TIBBS TIPS

You will be asked for your name (first name, then last name), location and verifiable voice telephone number when logging on. You will be assigned a user number and input a 3-6 character password for first-time use (this used to be optional for infrequent callers). It takes about 30-45 seconds to assign user number so be patient. Because of increasing system abuses ("phreaking" or plain foul language), on your first call, you may not be allowed to access all features of that particular BBS until verified.

For example, you may be allowed to read messages but not enter messages on your first call. This may be an inconvenience, but it is justifiable when one considers what Sysops must go through to "clean up" their systems each day. The TIBBS systems respond to single letter inputs (no need to press enter after menu choices), pressing "A" aborts a file, "P" pauses a file, "C" continues a file. The menus vary from system to system but, in general, look like this:

## TIBBS MENU

Press any key to abort

- (A)lter screen/text color (TEII only)
- (B)ulletin from SysOp
- (C)hat with DENIS
- (E)nter a message
- (F)ile Up/Download (TIs only)
- (G)oodbye (Disconnect from TIBBS)
- (H)ard/Software for sale
- (L)ocal For Sale
- (M)essage count/system status
- (N)ewsletter
- (O)ther TIBBS systems
- (P)assword change
- (S)earch/scan messages
- (T)ime and date information
- (X)pert user mode on/off
- (Y) Computer news
- (?) This list

(ABCEFGHLMNOPRSTXYZ or ?)

It is a wise move to jot down the files and inputs required for the  
(Please turn to Page 16)

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INFOSOFT has assembled top professional programmers to deliver the best possible software for your system. Most of the software we offer requires a fully expanded T199/4A system. If you see what our software can do you'll understand why INFOSOFT recognizes that a T199/4A with Extended BASIC, 48K and a Disk Drive is one of the most powerful and convenient systems ever offered on the home market. Unfortunately, most of that power was never tapped. We also recognize that there are many T199/4A users that need software to utilize the full power of their systems and perform many of the tasks their computers were designed to fulfill. With this in mind, we have concentrated our efforts on delivering useful applications that tap the full power of your system, power that you thus far probably haven't realized is packed inside the state-of-the-art processors that your system is based on. INFOSOFT will continue to design and offer software that justifies your investment by utilizing the entire system you've paid for.

Try our software and see what your system can do.

## Graphics Construction Kit

The "Graphics Construction Kit" is an integrated graphics package. It is also a program generator. It allows you to create your own customized characters, and using these characters, create any type of graphics display. The final product is a stand-alone program, complete with line numbers, character definition statements, and screen formatting statements that will reproduce the screen (or screens) you've created using the "Graphics Construction Kit." Yes, THIS IS A PROGRAM THAT WRITES ANOTHER PROGRAM! It's actually two separate programs in one.

First, there's a full-featured Character Generator that allows you to create, save and edit customized characters for later use in the Screen Generator. Features of the Character Generator are:

- \*ROTATE characters 90 degrees
- \*FLIP characters upside down or sideways
- \*MOVE characters a specified number of pixel locations
- \*see characters with any combination of FOREGROUND and BACKGROUND COLORS
- \*create characters in INVERSE VIDEO
- \*SAVE characters to disk
- \*LOAD characters from disk for editing at any time

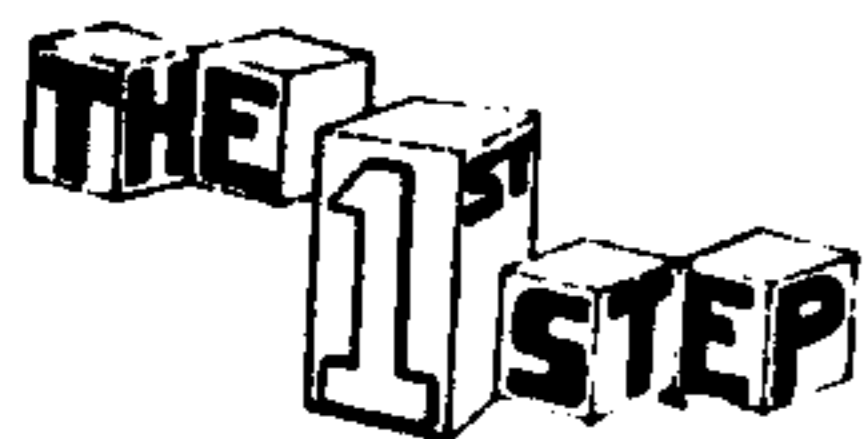
All of these tasks are performed with the ease and flexibility of your joystick.

The Screen Generator displays the characters you've created with the Character Generator and allows you to put them anywhere on the screen using your joystick. You simply position a cursor on the desired character, select it, then move the cursor to the desired screen position and place it there. This is a fast, efficient and organized way to build an entire graphics display. YOU CAN EVEN MIX TEXT WITH GRAPHICS USING THE KEYBOARD. Screens can then be saved to disk for later editing. When you are satisfied with what you see, the "Graphics Construction Kit" will create a program on your disk that will reproduce the screen display you've created. This program can then run "as is," or be MERGED into an existing program.

IF YOU PROGRAM AT ALL, the "Graphics Construction Kit" is one utility you won't want to be without. It will save you hours of valuable programming time by allowing you to create and modify graphics and text displays in minutes. It will give you the freedom to experiment with many ideas in a fast, efficient, organized manner, and when you're sure you have EXACTLY what you want, the "Graphics Construction Kit" will essentially do the programming for you. You can even use it to add your own customized title screens to someone else's programs—the possibilities are endless. IF YOU DON'T PROGRAM, the "Graphics Construction Kit" can be used by itself for design work (architectural, electronic, etc.), art work, or just plain fun.

We know of no program available for any computer with the capabilities of the "Graphics Construction Kit." INFOSOFT is offering this powerful package at an introductory price of \$29.95.

REQUIRES: T199/4A computer, Extended BASIC, 32K Memory Expansion, Disk Memory System, and one Joystick Controller.



There's a great deal of children's educational programs available for the T199/4A Computer. Unfortunately, if your children are unable to identify the letters and numbers on the computer's keyboard then they cannot use these valuable learning tools. THAT IS THE PURPOSE OF "THE FIRST STEP." Captivating your children with colorful graphics, music and speech, "The First Step" teaches your children the numbers 0 through 9 and all of the letters in the alphabet while teaching them WHERE TO FIND these letters and numbers on the keyboard. This program has been tested on many children. It has been found to be both highly captivating and successful. In not time at all, young children have gained a thorough knowledge of the computer keyboard while having lots of fun.

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## TIPS FOR USING BULLETIN BOARDS—

(Continued from Page 14)

areas you want to visit when the menu first shows. It will save you have to type "?" to get the menu after each file is viewed. "G" is goodbye. Don't just hang up after typing that in! Messages you may have entered may not be saved unless you wait for the system to prompt you to hang up your phone.

The hottest new (I hesitate to use "new," since the original TI-BBS system run by the Chicago user group was billed as "The First TI Bulletin Board") system is this fine program sold by the Chicago UG. Chicago now sports two of these systems (Chicago WEST, 312-766-2797 and Chicago SOUTH, 312-757-3135) and I have found another system in Indiana (219-854-4787). This is a great system with true TEII transfers, extensive file sections on Assembly, Forth and Extended BASIC. All three I have visited are well run, as fast in response as TIBBS and sport active message bases. The feature I like best with this system goes back to my aforementioned problems with TEII transfers on a multi-user phone line. TIBBS will "retry" on a download five times (I think) and then abort; the TI-BBS systems just keep plugging away until it gets done or you cancel it (CTRL 3 with TEII). I had to it retry ten times and then successfully complete a program transfer. This saved a lot of screaming as I was on sector 42 of a 48-sector program!

### TI-BBS TIPS

I believe you have to hit enter after each input on this system. Here is a typical menu for this system (they are the same on all three I visited):

#### TI-SOUTH Main Menu

- (A) dvertisers section, computer services (TI products)
- (B) ulletin section (TI-SOUTH information)
- (C) hat with sysop
- (D) elete a message you previously saved (only you can delete your messages)
- (F) ile transfer section up/downloading. (True TEII transfers)

**TIBBS will "retry" on a download five times (I think) and then abort; the TI-BBS systems just keep plugging away until it gets done or you cancel it.**

- (G) oodbye (hang up)
  - (I) tems for sale or trade. This section has stuff for sale by individuals (TI-SOUTH users)
  - (L) eave message section (add a message to the board)
  - (N) ew screen and text color change
  - (M) essage count/system status
  - (O) ther TI-BBS phone numbers
  - (P) assword change section
  - (RF) read messages in a forward count
  - (RB) read messages in a backward count
  - (RT) scan titles of messages
  - (S) end private message to sysop
  - (T) ips and tidbits section
  - (U) ser log. Gives a list of all TI-SOUTH users and when last called
  - (?) This screen
- Choice—

CALTEX is a system which is little known nationally but is quite widespread with systems on both coasts. The system was written and sold by CALTEX SOFTWARE of San Jose, California, which also runs the CALTEX flagship in San Jose (408-926-8767). I have visited a couple of others, including Long Island, New York, (516-289-3667).

This is another unique system. The main feature of interest is a one-of-a-kind transfer system for programs. Not text-file, not TEII, here's how it works: You obtain a DATALOADER via text-file download. Then, off-line, you type in or convert the D/V80 file to an Extended BASIC program. Then, when you get back on, have the DATALOADER saved on a disk as LOAD. When you select program transfers from the menu, you flip to Extended BASIC, load the DATALOADER program, select "D" to download, and the program will be automatically downloaded by the

copyrighted DATALOADER program to your disk in a D/V163 (merge) format file. Off-line, you simply merge the program in and then SAVE it out to program format. Error checking is good; better than text-file, not as good as TEII. You will be told of an error in downloading the program. Then you must start all over with the DATALOADER. With a little practice, this system works quite well. It is a major improvement over text files (especially large ones) inasmuch as you don't need to convert from D/V80 to program. Program files on these systems tend to be extensive.

### CALTEX TIPS

Here is a sample menu and a breakdown of the file "module," a CALTEX characteristic. An unimpressive main menu doesn't reflect the extensive file areas in the CALTEX system.

#### Main Menu

- C = Call SysOp (chat mode)
- D = Download
- F = File Module
- G = Goodbye ( Q = Quit)
- L = List of recent callers
- M = Message Module
- R = Request for password
- S = Screen options
- T = Time elapsed
- U = Upload
- Upload
- Function? F
- \*File Module
- Press (M) for Menu, (Enter) to abort
- File? M

- X = abort, S = pause, Q = resume, Z = f/fwr, (CTRL X,S,Q,Z are the active keys)
- \*File Module
- ? = Help
- B = Bulletins

(Please turn to Page 18)



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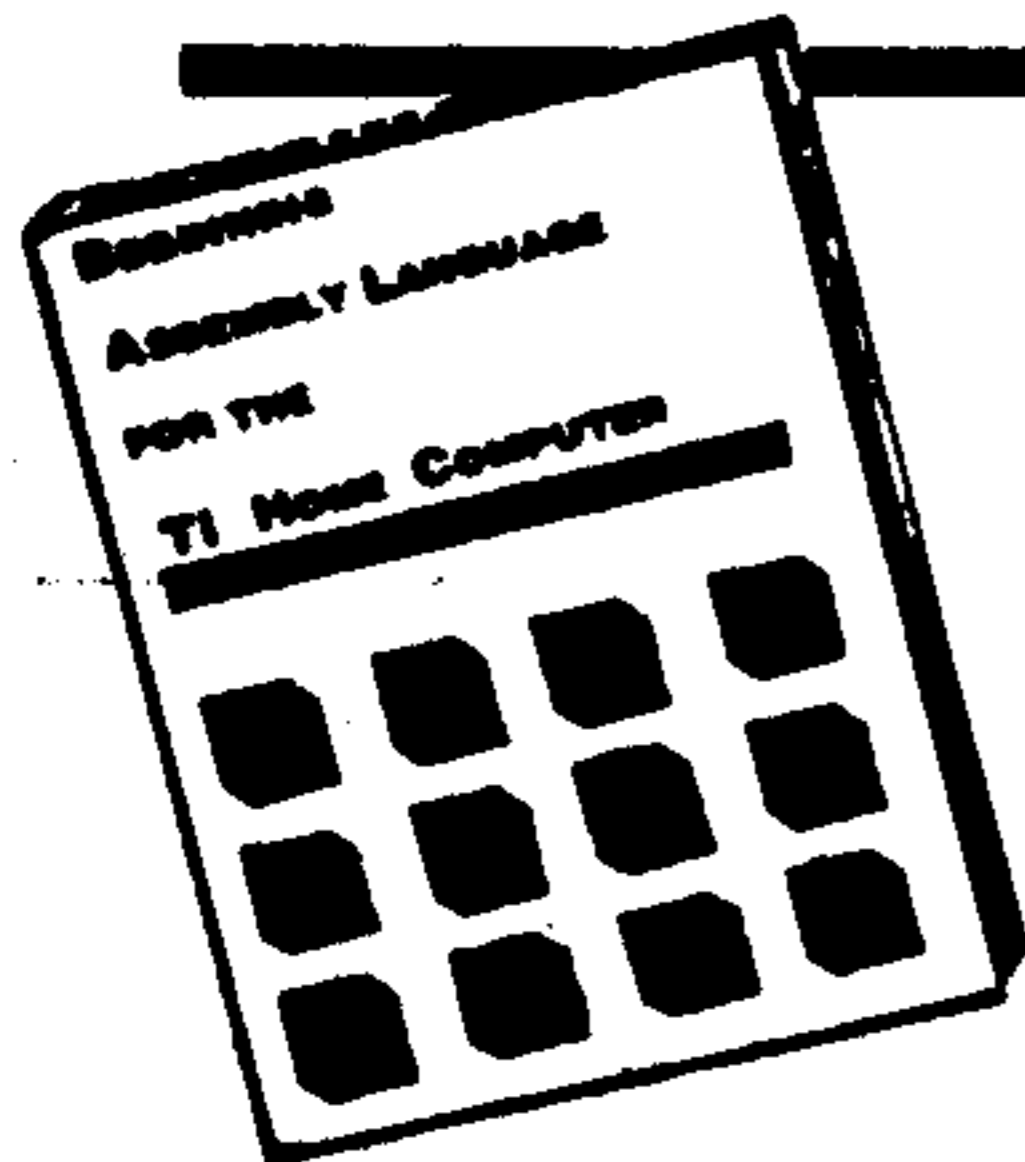
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## BBS SYSTEMS ARE VARIED—

(Continued from Page 16)

- D = DATALOADER II (program listing)
- F = For sale/wanted
- H = How does DATALOADER II work?
- I = Information about the system
- M = Menu (this menu)
- N = System news, title screen
- O = Other bulletin board systems
- P = Password information
- S = Software listing (CALTEX software)
- T = Technical information, tips
- U = User group news (various groups)
- W = What's in the downloads?

TI-COMM, the system fathered by the "King of Public Domain," John Clulow of Toledo, Ohio, is a program given free for the asking. It runs via a home-brew "AAAD" (auto-answer, autodial device) which the sysop must build. Once built (about

\$30 in parts), it converts the lowly Volksmodem into a 300 baud auto-answer and dial BBS! A remarkable development, indeed. John himself sysops a TI-COMM in Toledo (419--385-7484). A second one is in Cleveland (216-289-7311). These systems, thanks to the sysops, are efficient. Though a bit slow, I keep calling these systems back because of their excellent file areas. The tutorials on these systems are as good as any system running. They are well worth a call.

The other BBS systems are all unique and defy general description. Gary Blydenburgh's system in Massachusetts sports a great file section and program transfers. Blydenburgh also has software and hardware for sale, which you can order by modem using a credit card.

The USS Enterprise has text-file program listings and an interesting message base. "Handles" (psuedo-

nyms) are encouraged on this system, so expect to see messages from King Kong and others.

I wish I could spend more time describing the BBS systems that support TI users. They are all marvelous, largely due to the dedication of the sysops and user groups/dealers that make these systems available to all of us.

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# 'Computer Revolution' seems pretty low-key so far

By LAURA BURNS

Human beings have evolved little physically through the ages, anthropologists say, but greatly through technology.

The computer is changing our lifestyles and will do so in ways we have not yet dreamed of. It will prove a major factor in social change, like the printing press.

But computers are still in a minority of homes in this country and the changes they have made for 99/4A owners are individualistic—at least it would be hard to detect any trends from our interviews with five TI owners across the United States.

Joanne Scalteto of Londonderry, New Hampshire, says that she is "in electronics anyway." Her home computer, she says, has given her the opportunity to explore other phases.

"I spend a lot of time trying to learn to use different program modules," she says. "I'm trying to learn to program in Assembly language."

She has set up the household budget on the computer, she says.

She notes that she divides her time between the computer and her other hobbies, art and stained glass making "after I get the baby to bed."

She says the family just moved to a new house and one criterion used in purchasing the house was to have a separate room for the computer and its accompanying books and paraphernalia.

The baby, now two years old, she notes, was one of the main reasons for getting the TI.

"He is getting to the point where he enjoys pushing the keys and seeing things happening on the screen," she notes.

Scaltato says she uses Early Learning Fun programs and others with her son, who especially likes programs that use the speech synthesizer.

"He says he likes to hear the man talk to him."

Glen Smith of Kingsport, Tennessee, says the time spent on his computer means "less handiwork—less woodworking and refinishing furniture."

In fact, he says, he has plans to modify a bookcase he made to accommodate the computer and printer but this "has been put off by my spending too much time on the computer or printer. It's the sort of thing I used to do a lot of and do less. I'm shocked at how much time it takes to write programs and debug them. I have to limit myself so that I can do other things I need to."

He has had the TI more than two years. He says he wanted to learn to program in BASIC and to learn about computers and how they work.

He notes that he wrote a program called Stock Plot which keeps investment information, the price history of stocks. Marketing this program, he says, paid for his computer equipment.

He has just written a program for the family assets, he says.

Other members of Smith's family, he says, use the computer very little. He notes that his older daughter took a computing class in high school and used the computer to check her programs. The younger daughter, he notes, played a lot of arcade-type games at first, but it "wore off." Now, he says, she prefers adventure games when she plays at all, which is not often.

John Anzivino of Jersey City, New Jersey, says he has no paper records, thanks to the computer, but an "electronic organization of all my household activities."

He has cataloged all his books, records and photographs, and uses the computer as well for income tax record keeping and budgeting with records of expenses, charge cards and bills.

He says his second biggest use is word processing and says that he does a lot of "creative-type thinking at

home" for his job in a New York City bank, as well as all his personal correspondence, with the computer.

His three children, ages three to eight, use the computer for educational purposes—rarely for games—he says.

The three-year-old child recognizes most of the alphabet from the keyboard, he notes.

Time spent on the computer means that he watches much less television, he says.

"Unfortunately I think it has also reduced the amount of time I spend reading," Anzivino says. "When I might have picked up a book in the past I'm dabbling at trying to write little programs in BASIC."

The computer is also responsible for the purchase of a desk and has also

changed some of his spending habits, he says. He notes that discretionary money now might be spent on software for the computer rather than on a movie, for instance. He bought the TI in February 1983, he says, on the recommendation of a friend.

Edwin Ferguson of Greenwood, Indiana says he uses the computer for a mail list and is now trying to set up a new data system for inventory control in the metal stamping plant where he works.

He, too, says he watches less television since acquiring the computer two years ago.

Some friends, he says, "thought it was a good thing to have. We were sharing programs."

He made a bedroom into an office in his home, he says, but that made one less bedroom, "so we had to change that around." He moved the computer into a larger bedroom, so that half the room is an office, and the other half has the spare bed if it is needed.

Russell Hirschy of Markesan, Wisconsin, uses the computer in his

(Please turn to Page 20)



## MAILING USES

(Continued from Page 19)

work as a high school mathematics teacher.

He also keeps mail records for his church and also has mailing lists for the Ripon Harmony Kings, not only for the membership, but to mail to persons who previously attended their shows to notify them of upcoming performances, and of sponsors who have bought ads for their programs.

His wife directs the church choir and keeps a list of music programs as well as using the computer for the family Christmas card list. The children, ages 9 and 11, use it "a little—for games mostly."

He says that his other hobbies, stamp collecting and needlepoint, have "slipped to the back burner for a while."

He bought the computer about four years ago, he says.

"Being in mathematics anyway I was sort of interested in computers," Hirschy says. "When Texas Instruments came out with one at a price I thought I could afford, that's when I picked it up."

## Ex-Cel-Tec to debut Love Tennis Mar. 15

Ex-Cel-Tec of Lubbock, Texas, is offering a number of cartridge-based games for the TI home computer. The company is also marketed several packages on disk.

Among its newest offerings is Love Tennis, which is expected to be released by March 15.

Other games in its inventory are Arcturus, Killer Caterpillar, D-Station 2, Star Trap, Beyond Space, Space Chase, Midnite Mason, Boxer and Tile Breaker. All are in cartridge form.

Disk-based software includes Game of Wit/Wits End, Wit/Nitwit/Wittle Tags and Melody Master

The company also markets Stargazer I, II and III and Word Race. These programs are sold in cartridge form, also.

Programs offered by Ex-Cel-Tec are available directly from the company in lots of ten. A number of vendors are handling the company's wares.

Vendors interested in marketing any of these programs may contact the company at P.O. Box 54380, Lubbock, TX 79453, (806) 794-9104. A spokesman said that the company will sell its programs to individuals but they must order at least ten copies of the same title. Prices start at about \$29.95 for each program.

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We're so proud of this package that we even let you see how it works. That's right it comes complete with source code!

Worth it's weight in gold as a tutorial for TMS9900 assembly language on the 99/4A. If you ever wondered exactly how a sprite was made to move, a character was displayed on the screen, or how sound was made, you'll find it here. All of the routines to interface with DSR's, the VDP, and the sound processor are here to be examined.

All of this and more! A file loader and save utility for Extended Basic to create stand-alone assembly programs executable from Extended Basic ( loads at 1K/second ), a menu driven demonstration program and a preprocessor to take some of the tedium out of translations from Basic and Extended Basic. And of course all of these have the source code included !

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# New computer set for June unveiling

It now appears that a TI99/4A compatible computer will make its debut at the June Consumer Electronics Show.

The new machine is now in beta testing, according to several sources, and the manufacturer is in the process of negotiating with Texas Instruments for the right to use at least parts of the proprietary operating system used in the 99/4A. (Beta testing is conducted by persons not associated with the design or development of a project.)

No name has been attached to the new keyboard, though MICROpendium was told late last year

that it might be called the 99B.

Although a small number of keyboards have been produced, the manufacturer has not made a commitment to produce the machine. This would first entail securing the necessary chips from TI, which sells them only in large quantities as well as permission to use the TI operating system. Although the company has requested anonymity at this time, it has been involved in TI-related products for several years.

MICROpendium has not seen the new computer, but in previous issues has outlined some of its more general

specifications. It wasn't until late January, however, that word was received that the manufacturer had produced actual keyboards for testing purposes.

According to Bruce Ryan of RYTE Data, which is handling public relations for the new computer, the machine uses the 9995 chip and will come with 128 kilobytes of Random Access Memory, expandable to 512 kilobytes. It will have options to address up to one megabyte of memory directly. Read Only Memory size has not been determined. The machine will come with  
(Please turn to Page 22)



## NEW COMPUTER FEATURES 128K RAM—

(Continued from Page 21)

16K of VDP RAM, similar to the 16K of VDP RAM in the 99/4A. This is expected to be expandable to 64K and may use the new TI AVDP chip.

The keyboard itself is designed in the IBM Selectric mold, but resembles more than anything else an Apple II or, apparently, the TI99/8.

The video display is expected to offer users several high resolution options, including 80 columns. The machine will support composite and RGB (red, green, blue) monitors.

The machine will be fully compatible with the TI Peripheral Expansion Box, which will be used as a "card cage," according to Ryan. Apparently, the new console itself will not have any provision for expansion. All expansion will be done through the TI PEB.

The disk operating system is expected to be somewhat different from the TI system, without sacrificing TI compatibility. (Whether the machine will be compatible with non-TI hardware is not known.) The disk operating system, while based on the TI system, will allow configurations ranging from single-sided, single-density to quad

density. It will also allow users to interface a Winchester hard disk without the use of a hard disk controller.

"Now, with a much faster machine and greater VDP RAM, we will see some truly amazing graphics capabilities," Ryan notes. "Being separate from the CPU addressing, this VDP RAM will not slow the machine down the way it does the 4A. Rather than the CPU being owned and operated by the Graphics Read Only Memory (GROM), possibilities such as page switching, banks of graphics screens and multi-layered sprites are on the horizon."

Unlike the 99/4A, which runs at 3.3 megahertz, the new machine is running at 10 megahertz. By comparison, the IBM PC operates at 4.6 megahertz.

Although excitement about this new machine seems to be building, there are those who believe the creation of a new TI compatible console is a very risky proposition. The success of this new machine may well depend on the loyalty of today's TI users, not to mention the marketing skills of the manufacturer.

Not all aspects of the machine are set in stone, Ryan says. For instance, its sound/music capabilities have not been fully defined, and the question of whether to develop speech is open. Ryan notes that though it would be possible to add speech capability via a PEB card, the manufacturer may be inclined to include it in the machine if enough potential buyers find such a capability to be of use.

Ryan says that the ultimate fate of the new machine will lie in the hands of TI owners. Although the manufacturer does not want to be identified, it is listening to users and gauging its chances for success by what it hears, or sees. Those who have suggestions about what they would like to see in the machine or would like to make comments about it may send their responses to MICROpendium. We will forward them to the manufacturer. Send your responses to COMPUTER, c/o MICROpendium, P.O. Box 1343, Round Rock, TX 78680.

Finally, no word on price has been officially mentioned, though it is likely to be marketed in the \$300-600 range.

### Oak Tree Acorn 99

# Database program released

Oak Tree Systems is now delivering its long-awaited Acorn 99 database system. The program comes on two disks and requires Extended BASIC, memory expansion and a disk system. A printer is optional. It sells for \$69.95 and includes an extensive manual in a three-ring binder.

Acorn 99 allows the user to develop a database consisting of up to 14 categories and a "key" field in a "master record" and three groups of "detail records" which may consist of up to 14 data items each. Thus, up to 57 data items may be included in a single database. Individual data items can be up to 240 characters long. Maximum record

size is 254 characters. The number of records is limited to the storage capacity of a disk. It works with all disk formats, from single-density, single-sided to double-density, double-sided. The user can configure the system for number of drives, printer type and screen color.

The program uses Oak Tree's Display Enhancement Package to produce a 40-column screen.

Acorn 99 is unique among TI record management software in many ways. For one thing, users may create a "dictionary" of up to 100 data items that can be used to create a variety of database applications. It offers range checking of data items, and users may search

for data on any field. Users may also create subsets of the database which include only those records that meet certain search criteria.

The master records use a "key" field as the search field for updating purposes. This may consist of a string, number or integer and does not necessarily have to be unique. For example, in creating a mailing list database, the user may specify the last name as the key field, and, so long as range-checking is not invoked, may use the same last name, say Smith, any number of times and be able to access anybody by the name of Smith in the database sequentially or in sorted order for

(Please turn to Page 23)



## Programs deal with finances

Design Strategies, of 69-B Bethel Church Rd., Jackson, NJ 08527, has released its Personal Computing Package for the 99/4A. The company describes this program as "a multi-functional computing package for the typical home computer user." Included are Visi-Checkbook, Check Book Balancer, Personal Tax Organizer and Income/Expense Accountant. All programs operate out of console BASIC using a cassette recorder. A diskette drive option is included and data files may be transferred between the two media. A printer option is also included. The price is \$17.98 for the entire package.

Visi-Checkbook is a personal checkbook analyzer which reviews a full year of checkbook entries with month-to-month and minimum-maximum comparisons.

Check Book Balancer is a calculator program that provides automatic per check charge.

Personal Tax Organizer organizes deductions using the Schedule A tax format.

Income/Expense Accountant prepares customized income/expense reports.

## ACORN 99—

(Continued from Page 22)  
updating purposes. For record review purposes, any field or combination of fields may be used as the search criterion.

Acorn 99 also allows easy access to databases via Extended BASIC program. The manual provides a number of examples of this. Through such programs, users may access up to three databases simultaneously.

MICROpendium will be reviewing Acorn 99 in a future issue. Oak Tree Systems has been offering an introductory price of \$59.95 for the program, though it is not known at this time whether the price is still in effect. For information, contact the company at 3922 Valentine Rd., Whitmore Lake, Mi 48189.



## CorComp's 9900 box is cool and quiet

CorComp Inc. didn't set any speed records in getting its much talked about 9900 Micro Expansion System to the market, but the wait appears to have been well worth it.

The tiny black box—measuring 5 inches X 5 inches X 3 inches—plugs directly into the peripheral port on the right side of the TI99/4A console and provides users with an RS232 port, parallel port, 32K memory expansion and a disk drive controller capable of handling up to four disk drives. What is more, the box generates no sound and very little heat. Unlike the bulky TI Peripheral Expansion Box, the CorComp box has no noisy cooling fan. Of course, the CorComp box is not expandable and does not provide purchasers with the ability to use peripheral cards produced by other manufacturers.

However, the box does provide users with the most popular features of the TI expansion system. The list price is about \$429. However, many vendors are offering generous discounts.

Included with the box is a plug-in power supply similar in size to the TI console power supply and CorComp's excellent disk manager program. Users must furnish their own ribbon cables to connect a disk drive to the box.

All peripheral connections are made in the back of the box. Included are a 25-pin RS232 port, 16-pin parallel port and 24-pin disk drive port. All are standard TI configurations.

The disk controller has the same characteristics as CorComp's disk controller card, which is designed to fit the TI PEB. The controller can access up to four disk drives in formats ranging from single-sided, single-density to double-sided, double-density. A single-density, single-sided diskette can store about 90 kilobytes of data while a double-sided, double-density diskette will store about 360 kilobytes of files and programs.

For more information, contact CorComp at 1255 N. Tustin Ave., Anaheim, CA 92807, (714) 630-2903.



## Morning Star CP/M Card

# Pros, cons of co-processor

By JOHN KOLOEN

With the release last fall of the Morning Star Software CP/M processor card, TI home computer users got their first glimpse at what the future would bring. Co-processor cards are a logical step for third-party developers who view the Peripheral Expansion Box as more than a depository for memory expansions and RS232 cards. Lately it's gained popularity as a home for new disk controller cards and, now, for co-processor cards such as the Morning Star CP/M card.

I will note at the outset that this card performs superbly. Operating in the Osborne I single-sided, single-density format, TI users can use some CP/M software. I used the Personal Pearl database manager, which is loaded onto some 13 diskettes. There are a number of other programs available from Morning Star, including SuperWriter, Random House Proofreader, SuperCalc and CBASIC.

The availability of software and the cost of said software, however, remains open to debate. I was not able to locate a dealer who handled Osborne software in the single-density format. I did locate Osborne software in the double-density format, but the Morning Star card could not read it. Many users of the Osborne I either upgraded to double-density or actually purchased the Osborne Executive computer, which operates in a double-density format.

Dual processors have gained popularity in the past year or so. Texas Instruments loaded its Professional with two processors. The Morning Star card is essentially a second processor, an 8-bit Intel 8085, that turns your TI99/4A into a CP/M computer. Of course, several tradeoffs are made in the process. One of them becomes obvious when a program other than the CP/M system software is loaded, Personal Pearl, for example. Personal Pearl is a very flexible database

## Review

### Report Card

Performance: ..... A  
Ease of Use: ..... B  
Documentation: ..... A  
Value: ..... B-  
Final Grade: ..... B

Cost: \$495 (PEB card)

Manufacturer: Morning Star Software, 4425 SW 109th Ave., Beaverton, OR 97005, (800) 824-2412

Requirements: console, monitor or television, floppy disk system, TI Peripheral Expansion Box, TI memory expansion, TI or CorComp disk controller card, printer and printer interface recommended

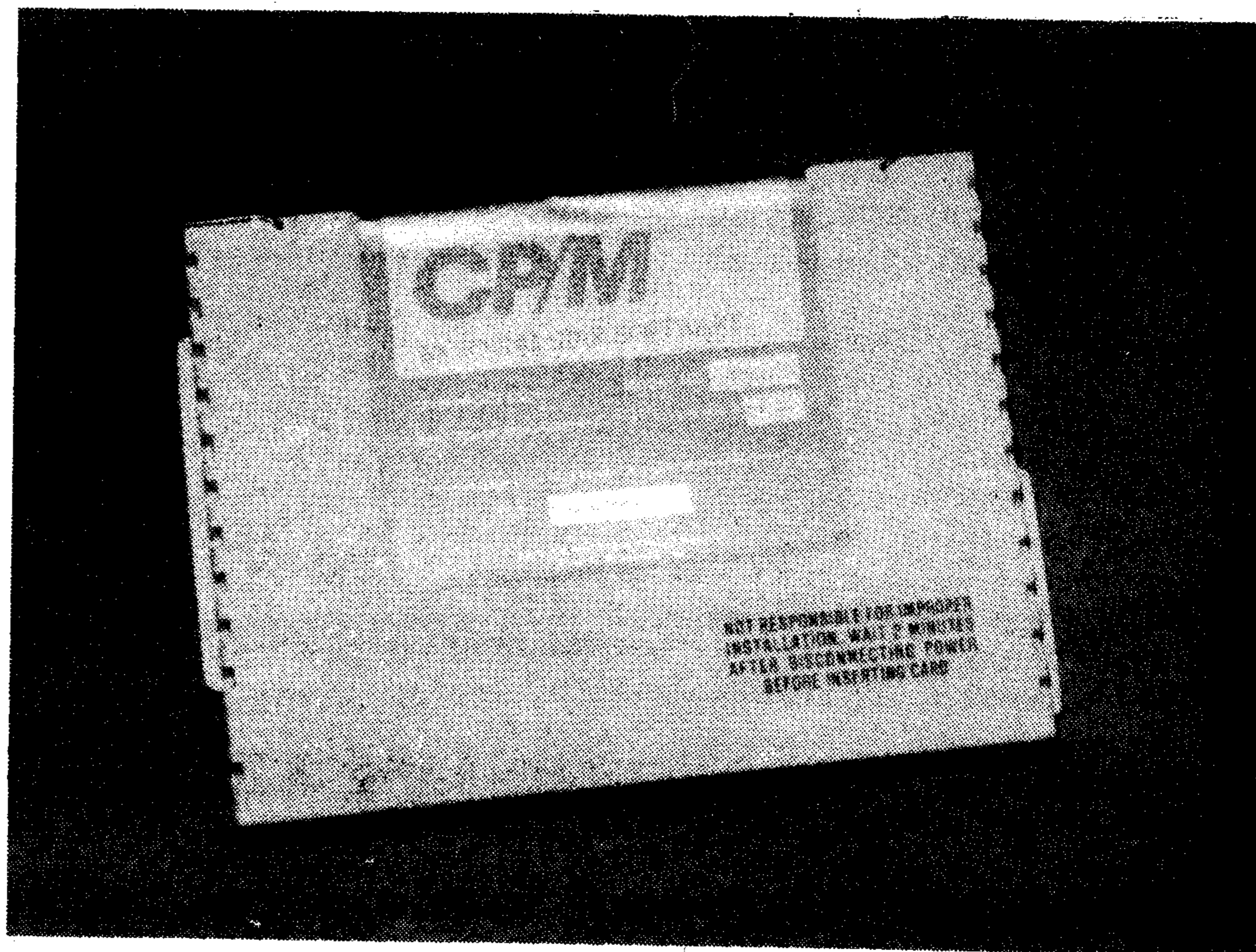
manager, offering configurations for more than two dozen computer types. Regardless of which configuration is chosen, however, all of them are designed for 80-column screens.

Which means that the 40-column TI screen must be scrolled or windowed to view all 80 columns. (The Osborne I screen displays about 50 characters and operates in much the same way as the Morning Star card.) Those with TI-Writer or Microsoft Multiplan are familiar with this. In contrast to what they can do with TI-Writer, however, CP/M users cannot make the screen conform to a 40-column mode by setting margins, at least not when using Personal Pearl. I do not know how the card works with Word Star. Morning Star says that its CP/M card is not optimized for word processing anyway.

TI-Writer and Companion, to name two word processors for the TI, are much easier to use than Word Star and every bit as useful. Not to mention both are much less expensive.

Reviewing the card without considering the software that operates with it is rather difficult. I do not wish to turn this article into a review of Personal Pearl. However, there are

(Please turn to Page 25)





## MORNING STAR CP/M CARD—

(Continued from Page 24)

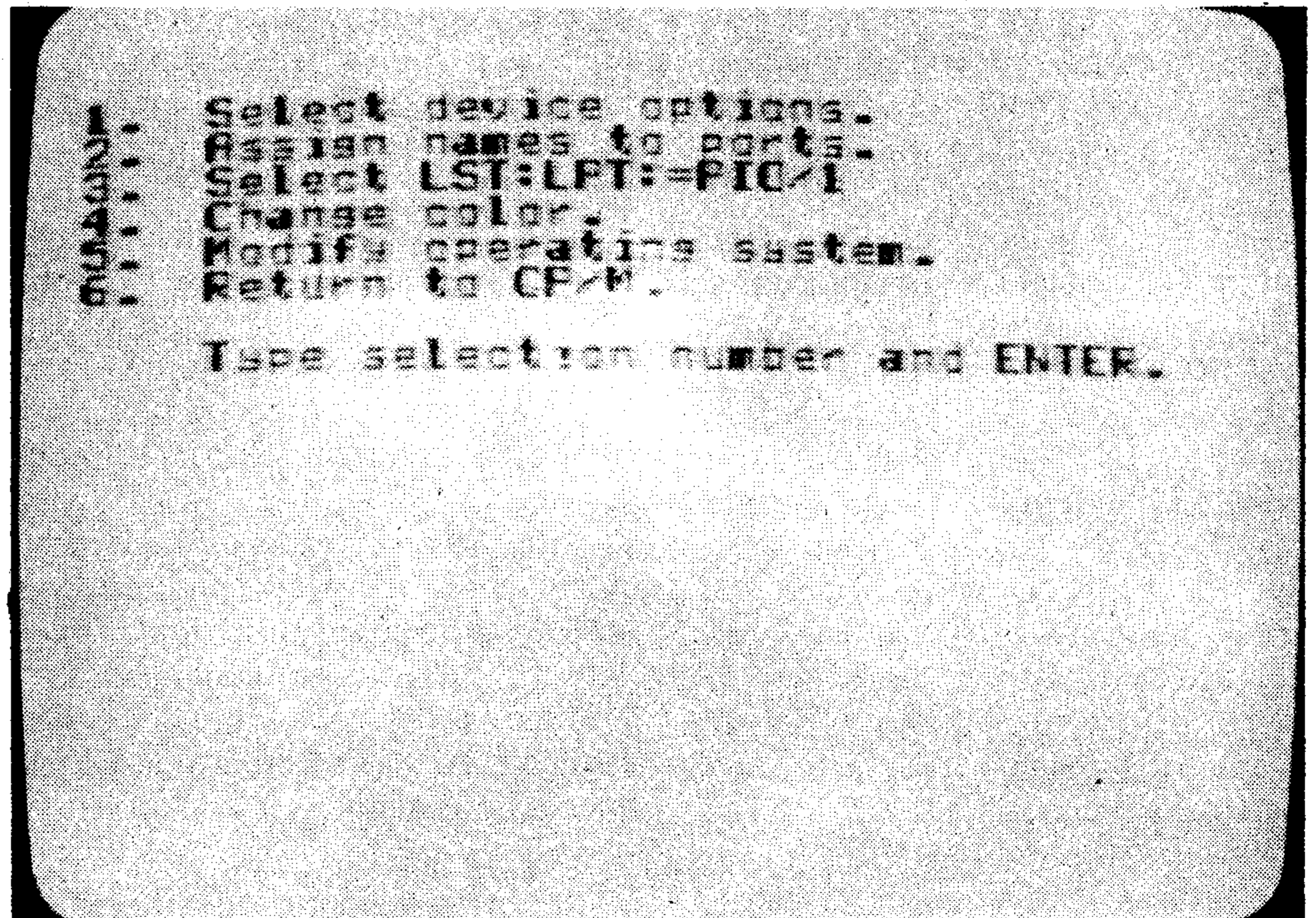
some things that must be noted. Number one is that Personal Pearl is far more sophisticated than any database manager program available for the TI. The only true database manager that I am familiar is the recently released Acorn 99. (A database manager is capable of accessing more than one data file simultaneously. File managers, such as Navarone's Data Base Manager System or Quality 99's Database 99, are capable of accessing only one file at a time.)

**Performance:** The first change a user notices after inserting the Morning Star card into the PEB is the choice of operating systems when the system is turned on. The familiar TI title screen includes an option for the TI system and a second option to select the CP/M system. If the CP/M option is selected, the system immediately searches drive one for the CP/M system disk. This disk must be placed into drive one for the system to initialize. (One drive is quite adequate for this system.) If the system disk is in the drive, the card loads the CP/M utility programs and then places a blinking cursor on the screen to await your next command.

The system diskette includes a variety of programs, ranging from a directory to an assembler. These programs are used to copy and format diskettes, rename and erase files and write files to disk, among other things. Diskettes used with the Morning Star card must be formatted using the CP/M formatting utility. Disks formatted for CP/M cannot be read by the TI system. TI formatted diskettes cannot be read by the CP/M system, either. (There is also a system setup program that allows users to define system defaults and screen and text colors. But more on that later.)

Unlike the TI disk operating system, which allows users to format diskettes in single- or double-density, single or double-sided modes, the Morning Star card allows only single-sided, single-density formatting.

Unlike the TI console, which



includes TI BASIC in ROM, all CP/M software, whether a language, applications program or game must be loaded into memory from disk. Although the card includes the CP/M DOS disk, all other software must be purchased separately.

Another major difference between the TI system and CP/M is that CP/M redefines many of the function and control keys of the TI console. One thing that remains the same in most applications at least are the arrow keys, which are used to move the cursor across the screen in both the TI and CP/M modes. However, the CTRL key is pressed when moving the cursor in CP/M while the FCTN key is held down while using the arrow keys in TI mode. Windowing is done using the FCTN 3,4,5 and 6 keys. TI-Writer uses FCTN 4, 5 and 6 to window down, right and up, respectively.

The CTRL key is also used to perform a number of other functions, making it the most important key when operating out of CP/M. Among these functions are CTRL C, to reset CP/M; CTRL E, to continue command on a new line; CTRL H, to backspace and delete characters (TI uses FCTN 1 to

delete a space); CTRL I, to tab eight columns across the screen; CTRL J, produces a line feed; CTRL M, produces a carriage return much like the ENTER key in the TI mode; CTRL

Q, turns printer on; CTRL R, to retype text on command line; CTRL U, to cancel text typed on command line; and CTRL XL, to erase command line.

(Please turn to Page 26)

### 99/4A AUTO SPELL-CHECK

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## MORNING STAR CP/M CARD

(Continued from Page 25)

There are others, but you get the idea.

The FCTN QUIT key, which is often the cause of frustration to TI users, is not a problem in CP/M. To leave CP/M one must hold the CTRL and FCTN keys down simultaneously while pressing the ENTER key.

Some advantages of the CP/M operating system over the TI system are the ability to scroll back and forth through 72 lines of 80-column text and the fact that the system will not write to a disk that it does not recognize. All write commands in CP/M DOS are preceded by a "are you sure?" type of query before execution. This is common in many programs and operating systems, not just CP/M. The fact that it is absent from the TI system is unfortunate, but not insurmountable. A number programs for the TI are written to query the user in this way before executing write commands.

The Morning Star CP/M system is configured for the ANSI X3.64 Terminal. ANSI stands for American National Standards Institute. Software, such as Personal Pearl, offers the user a variety of configurations, though none specifically for the TI99/4A. The ANSI configuration, however, does nicely. Choosing other configurations results in some characters being mistranslated. An "X" on the TI may turn out to be a "P" using the Osborne configuration, for example.

In reviewing this card, I have tried to take the point of view of the "average" user, not an assembly language programmer. I feel that anyone who is interested in writing CP/M programs would have purchased a CP/M computer. Also CP/M Version 2.2 is not the most recent CP/M release. CP/M programmers, no doubt, would be interested in keeping up with operating system improvements. Thus I will not attempt to evaluate the editor and assembler programs that are resident on the CP/M disk.

In addition to the query that precedes write functions, CP/M also allows

users to perform certain disk functions on groups of files, which can be very handy. Two "wildcard" characters—the asterisk and question mark—are used to specify several files. For example, DIR MAIL.\* would result in a directory of all files that use the word MAIL as the first four letters of the filename. Question marks are used to substitute for characters in filenames so that the command DIR M???. would display a list of all files that start with the letter M and consist of three other characters. The asterisk and question marks can be used in a similar way with the ERA (erase) command.

These types of commands are available on a number of non-CP/M operating systems.

One of the greatest advantages of CP/M is the enormous public domain software library that exists. However, locating these programs in the Osborne I format may prove to be a chore. To be sure, there are Osborne I users out there, though they are not nearly as well organized as TI users, nor are there nearly as many. There is a magazine published for Osborne users but it costs \$5 per issue and is published only 4-6 times annually. I would think that anyone who purchases this card would need to subscribe to this publication just to locate software.

Perhaps the item that is of greatest benefit to users of this card is the RS232 function. Through the use of the menu-driven "setup" program, users may configure serial and parallel ports and modify foreground and background colors. There is also a provision for modifying the operating system, though this is not operable at this time. The company regards the setup program to be very important since it may allow users to obtain software via telecommunications networks. Unfortunately, I did not have a terminal emulator program to test the RS232 configuration using a modem.

The CP/M system operates somewhat more efficiently than the TI system, though it is not possible to make a direct comparison in terms of

processing speed. Of course, one needn't insert cartridges into the GROM port when operating in the CP/M mode. Although you can insert a cartridge, it will have no effect on the CP/M system. In fact, TI users could do away with GROM problems forever by operating in the CP/M mode exclusively.

Physically, the card looks like any other TI card. The card is the same sturdy, enameled version that TI produced. It provides the user with 64 kilobytes of RAM and 8 kilobytes of ROM. The package includes Digital Research's CP/M users manual. (Digital Research created CP/M.)

**Ease of Use:** The CP/M operating system is not particularly difficult to use though it is considerably different from the TI system. In fact, there are a number of things about the CP/M system that I prefer over the TI system. The CP/M disk must be loaded into a disk drive when a command is issued, however, since the operating system is entirely disk-based.

Also, control and function keys are redefined on the TI keyboard, but users can become accustomed to this easily through use. In my opinion, any difficulty in using the system with applications software is a function of the limitations of the 40-column TI display when confronted with 80-column CP/M software. This is a function more of the user's preference than anything else, and I know of several Osborne I users who are perfectly happy using Word Star in the windowing mode to write text. I suspect it's a case of what one is accustomed to.

Use of the CP/M assembler and debugging programs will be of interest to those who already have experience with assembly language programming, whether on the TI or another system.

**Documentation:** The manual that Morning Star wrote specifically for its card is an excellent supplement to the Digital Research CP/M manual. The  
(Please turn to Page 27)



## CP/M CARD—

(Continued from Page 26)

Morning Star manual consists of 38 letter-size pages in a black, three-ring binder. It describes the CP/M commands, provides complete background on how the TI console is redefined in the CP/M mode and offers plenty of advice on how to use the various CP/M commands.

**Value:** I am having great difficulty drawing a firm conclusion about this card, since I do not feel that I have had a chance to fully evaluate it. To do so would require immersion in the CP/M operating system, which I do not have the time to do.

From an applications standpoint, users do have access to some highly sophisticated software otherwise unavailable for the TI. Among these I count Personal Pearl. However, there is a high price to pay, literally. Personal Pearl goes for about \$300

from Morning Star. CBASIC costs about \$150. Prices for other software, mostly business-related, are equally high. Doubtless, users can obtain this and other software at a lower rate from other sources. For example, a company listing wares on the Osborne users board on The Source was offering Personal Pearl for about \$100.

Of course, there is a lot of public domain software out there, though one will not likely find it in the Osborne I format without doing considerable looking. Criteria for software requires that it be written in 8080/8085 code, use standard CP/M calls and require a dumb terminal. The Osborne I disk format can be circumvented, according to Morning Star, by transferring CP/M software from another disk format by the use of a disk transfer program. I suspect one would have to get in tight with other CP/M users to do this. I could find no software retailers who would do this.

Although the card is compatible with both the TI and CorComp disk controllers and RS232 cards, it is still

able to read and write only to single-sided, single-density diskettes, another built-in limitation that I am uncomfortable with, if only because it seems to be artificial.

Despite the above limitations, which taken individually are not of fatal importance, I have the feeling that the card is not yet fully developed and that there may be more to come. This is buttressed by brochures the company has sent to prospective buyers in which it suggests that the card will eventually be modified to support double-sided disks and Winchester hard disks. Also, interfacing it with an 80-column terminal via the RS232 port is possible, according to the brochure.

In the end, those who purchase this card will do so for rather specific reasons. The cost is too high to buy it simply out of curiosity. But for those who require the use of CP/M software or need to operate outside of the TI environment this card is worth consideration. It is well-made and as far as I can tell flawless in design and execution.

### User reports on

## COMPANION

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"Your program is superb...the program is so good that I expect it to be the standard against which all others for the TI are judged. ...I have a degree in Computer Science...I am particularly impressed with the screen editor. You have obviously very carefully thought out your system and it is a joy to use. ...It is a pleasure to see truly first class software finally available for the TI-99/4A." — Dr S. Jacobs, M.D., Calif.

"After having purchased or reviewed close to a hundred programs for the TI-99/4A computer during the past year, I can recommend without qualification that COMPANION is the best program published to date for this computer. It is also certainly the best documented. Your program and text are a joy to work with... Thank you for creating a program worthy of its investment." — Robert Wolff, Somerset Electronics, N.J.

"I was particularly surprised at the sheer speed... I never knew that my TI-99/4A had so much power. ...COMPANION is definitely a good buy, even at twice the price." — C. Beaulieu, Montreal

"This is without doubt the best word processing program I've seen. ...The short, readable, and most importantly understandable instruction manual is superbly done." — Dr. R. Crampton, Alabama

"I feel that your program is the finest forty column word processor on the market today. ...Keep up the good work! It is most refreshing in this age of half-hearted software to acquire a program that is professional in all respects." — D.W. Thorpe, Houston

"All the claims you make for COMPANION it satisfies, and more. ...I certainly find it easier and more pleasant to use than the WORDSTAR Professional Package on our IBM, and far more pleasant to manipulate than the BUSINESSPAK WORD+ software for my TRS Model 100. My only problem is that my son and daughter have virtually monopolized the TI system for the past week, churning out 'optional' work for courses to give themselves excuses to experiment with the various features." — Dr. E.N., North Carolina

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## WDS/100 Winchester Disk Drive

# Short-lived hard disk drive

**ED:** The following review of the WDS/100 Winchester Disk Drive was written before its manufacturer, Myarc Inc., stopped its production and sale. Users may be able to locate the WDS/100 on the resale market. The review is being published to inform readers about the hard disk drive and to offer a means of comparison in the event another manufacturer produces a Winchester or a hard disk "personality card" for the TI99/4A.

By **JOHN KOLOEN**

Perhaps the most expensive peripheral specifically designed for the TI99/4A is the WDS/100 System Winchester Disk Drive. The disk drive comes in 5- and 10-megabyte models and sells for more than \$2,000.

Needless to say, the price is prohibitive for most TI users. Then, too, Jaguars and Porsches are too expensive for most of us to own and yet that doesn't stop us from admiring or wanting them.

**Performance:** The WDS/100 offers users a number of advantages over floppy disks. Anyone who has worked his way up from a cassette recorder to a floppy disk knows how much faster the floppy is over the tape drive. Similarly, the write/read speed of the Winchester is about five times faster than the speed of a floppy. As an example, loading the TI-Writer editor from the Winchester takes about two seconds. Loading the editor from a floppy takes about 10 seconds. The I/O speed of the Winchester is approximately the same as the I/O speed of Foundation Computing's 128K card when used as a disk file.

Of course, nobody is going to spend a couple thousand dollars to save eight seconds. The real advantage of the Winchester is in its extremely large file and program storage capacity. Being able to file 10 million bytes of programs and data on a single disk can

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## Review

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### Report Card

**Performance:** .....A  
**Ease of Use:** .....A  
**Documentation:** .....A  
**Value:** .....B-  
**Final Grade:** .....A

**Cost:** \$2100

**Manufacturer:** Myarc Inc., P.O. Box 140, Basking Ridge, NJ 07920

**Requirements:** console, monitor or television, floppy disk system, Extended BASIC, printer and expansion memory recommended

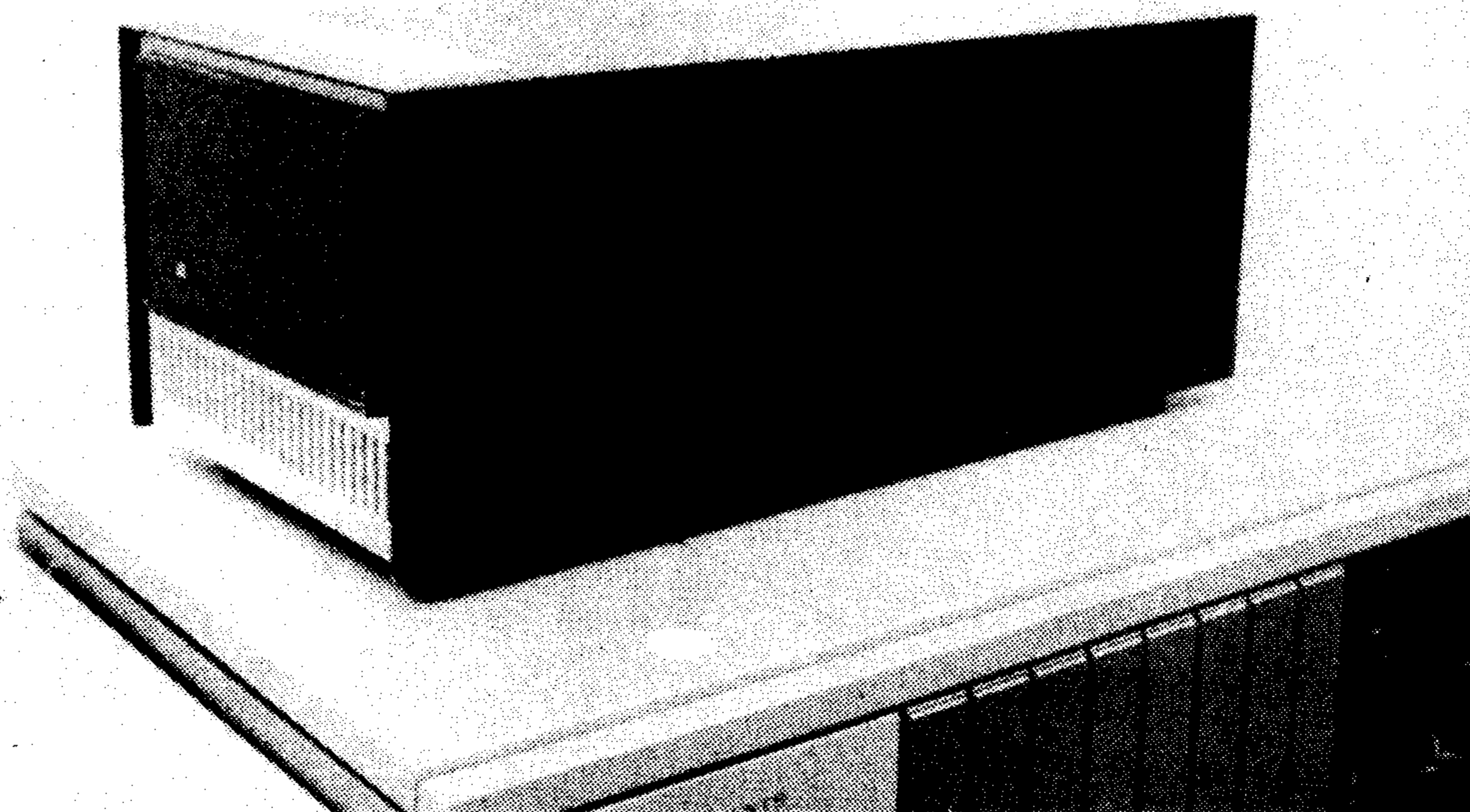
be of tremendous convenience to those who use their TI's in business. Being able to have all programs as well as files used to operate a business stored on a single disk may make a hard disk an attractive and justifiable expense. Programmers can find it useful on the basis of how quickly they can access their programs and files. Hobbyists,

too, can put it to very good use without much trouble.

The WDS/100 uses a Unix-like file management system that allows files and programs to be grouped together into directories. These directories can then be grouped together into larger directories, and so on. The system can have up to 17 levels of directories, each containing up to 114 subdirectories capable of storing up to 127 files or programs each. This means the user can store up to a staggering 246,126 files and programs. The 10-megabyte Winchester has 39,168 sectors of disk storage.

Files and programs stored on the Winchester are accessed via "pathnames." Pathnames are designed by the user in such a way that he can logically locate files without having to refer to a disk map of the hard disk contents. For example, suppose you have a general ledger program stored on the disk, consisting of 20 separate programs. Suppose you call the directory that these programs are located "ledger." This would be the directory

(Please turn to Page 29)





## WDS/100 WINCHESTER DISK DRIVE—

DISK MAPPING FOR:

02/10/1985

09:34:10

WDS1

NAME	SIZE	TYPE	F	CREATED	LAST REVISED
DATES	2	I/VAR	100 U	1/21/1985 19:39:18	1/21/1985 19:39:20
HOUSE	9	I/FIX	128 U	12/19/1984 22:39: 6	12/19/1984 22:39:12
JOHN	2	D/VAR	80 U	12/19/1984 12:58:18	12/19/1984 12:58:18
LABELS	22	PROGRAM	U	1/21/1985 19:40:10	
LETHEDGEM	3	D/VAR	80 U	12/26/1984 20:29:26	12/26/1984 20:29:28
LOAD	10	PROGRAM	U	1/21/1985 19:40:30	
M/ACC	16	PROGRAM	U	1/21/1985 19:41: 0	
M/MERGE	21	PROGRAM	U	1/21/1985 19:41:22	

(Continued from Page 28)

name, which can also be thought of as a separate floppy disk with the name of "ledger." Each program segment would be stored under the directory named "ledger."

Ledger, however, would only be part of the pathname. The first segment of the pathname would have to be the name for the Winchester. This would be WDS1, in this case. Then, suppose, the OPEN statements in the ledger program refer to "DSK1" to load program segments. The Winchester allows you to refer to it as DSK1 just as if it were a floppy, though not to DSK2, 3 or 4. Thus, the pathname to the ledger program would be WDS1.DSK1.LEDGER. (Periods are used as separators.) This brings you to the ledger directory. Next, you would have to enter a program name to load from the directory, say, LOAD. The entire pathname, then, would be:

WDS1.DSK1.LEDGER.LOAD. This can be entered from BASIC or Extended BASIC. Providing that the entire program had been loaded into the ledger file, the program will run entirely out of the hard disk. Files generated by the program may be able to be written and read from the hard disk, though many programs are so written as to require floppy disks unless extensively modified.

Pathnames may consist of up to 40 characters, so the longer the pathname itself, the shorter the directory names one would use.

Use of the Winchester depends entirely on the "personality" card that comes with the drive. Without this PEB card, users could not interface the drive with the computer. This card is connected to the Winchester by a ribbon cable. Although advertisements about \$795 hard disk drives are common today, controllers, enclosures and power supplies are not usually included in the price. For the TI, the WDS/100, with its personality card, is the only Winchester that is fully compatible with the TI. One can only suppose that a personality card can be

designed so that it can be used to interface any hard disk with the TI.

The WDS/100 is completely sealed at the factory. The black enameled cabinet measures 6 7/8 inches wide by 5 3/8 inches high by 14 3/4 inches long. It includes a cooling fan that operates while the drive is operating. A power switch is located in the back of the cabinet. The fan is much quieter than the PEB fan, but there's no surprise in that.

The 10-megabyte Winchester has two platters and read write heads, while the 5-megabyte model has one platter and two heads. All other characteristics of the two are identical.

Included with the Winchester is a floppy disk containing a comprehensive collection of utility programs used to initialize the disk and perform file and disk management operations. These files can be copied to the hard disk and accessed directly from it. Operations include everything from backing up the

contents of the Winchester to initialization. The utilities are subdivided as follows: Disk Management, Directory Management, File Management and Disk Diagnostics.

Disk Management utilities allow the user to initialize the disk (you want to do this only once), map the disk contents, rename the disk and show disk status. All utility programs require Extended BASIC to operate.

The Directory Management menu allows the user to create, delete, list, rename, back up and restore directories.

The File Management utilities allow the user to delete, rename and copy files and to modify file protection.

The diagnostics utility allows the user to run destructive and non-destructive tests similar to the tests offered by the Disk Manager II cartridge.

The Winchester is compatible with all cartridge-based software that I used, including TI-Writer, Microsoft Multiplan, Extended BASIC and Editor/Assembler. The Winchester is completely compatible with TI-BASIC and allows the user to open up to 12 files without using main memory.

Additionally, the Winchester has a clock option that records the minute, hour, date and year that files were first placed on the Winchester as well as the time and date of the most recent revision to each file. The time and date is entered by the user when the system is powered-up. It is not necessary to

(Please turn to Page 32)



## Sketch Mate

# Preservation of art

By JOHN KOLOEN

The Super Sketch graphics board is a nifty piece of hardware in its own right. But those who have it, particularly those with a disk system or printer, probably have longed for a way to dump their artwork to the printer or save it to a floppy for future use or, more importantly, revision. After all, Leonardo Da Vinci didn't paint the Mona Lisa in one sitting.

Super Sketch provides the option to dump drawings to a cassette tape, but that is regarded by many to be inadequate. The only other way to preserve them was to photograph them, the results of which are invariably less than desirable.

Personal Peripherals Inc., makers of Super Sketch, filled up all available memory in the Super Sketch cartridge just for the graphics board itself, leaving no room for routines to dump drawings to a printer. So, for a while, the prospects for improvement looked rather bleak.

However, that has changed. Sketch Mate has arrived and it is just what Super Sketch users have been waiting for. Not only does it allow them to dump their creations drawings to a printer, but it also allows users to save the drawings on a disk for later recall.

**Performance:** Sketch Mate is very "user friendly," as they say. In fact, I needed to read only two paragraphs of the manual to learn how to dump the Super Sketch screen to a printer or save it to a disk.

Use of Sketch Mate requires the Navarone Widget, Extended BASIC, Mini-Memory or Editor/Assembler must be plugged into the Widget, as well as the Super Sketch cartridge. Using Extended BASIC, the Sketch Mate program loads automatically at powerup. It takes a minute or so to load (MMM and E/A load much faster), and then a colorful title screen that is virtually a duplicate of the Super Sketch screen appears. (Of course, it says Sketch Mate, instead of Super Sketch.)

## Review

### Report Card

Performance..... A  
Ease of Use..... A  
Documentation..... B+  
Value..... A  
Final Grade..... A

Cost: \$29.95

Manufacturer: Amerisoft International, P.O. Box 2168, Acworth, GA30101

Requirements: console and monitor or television, Navarone Widget, Super Sketch graphics board, disk system, expansion memory, Extended BASIC, Mini-Memory or Editor/Assembler, printer interface and dot-matrix printer optional but recommended

You are instructed to switch the Widget to the Super Sketch cartridge and, having done so, you are in the Super Sketch mode.

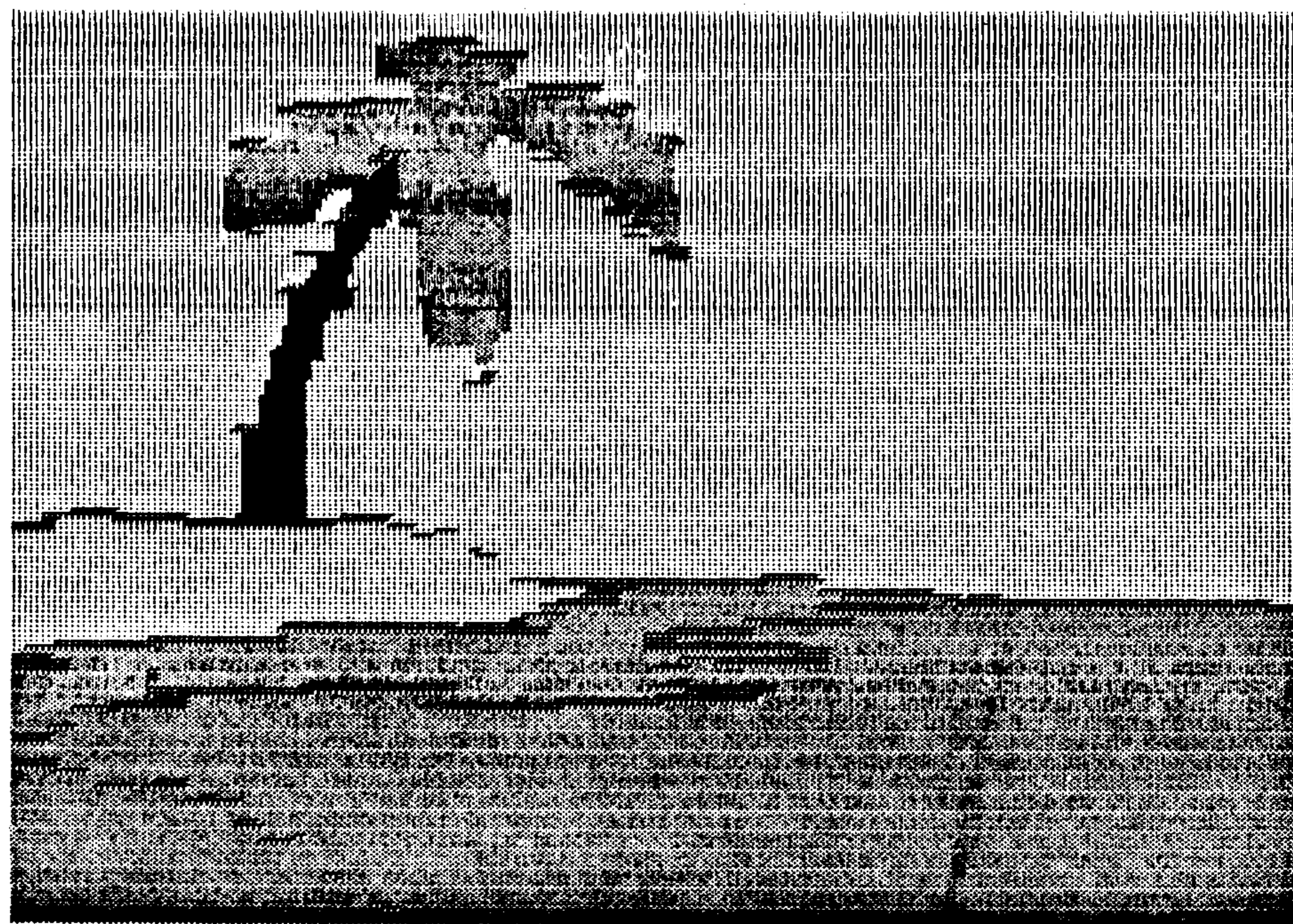
Now you can go about your business, or drawing. When finished, you simply select the SHOW option of Super Sketch, hold down the LIFT key and press the "P" key to dump the

screen to a printer or the "S" key to save the screen to disk. Or the "L" key if you are loading a drawing from disk. Activating the S or L keys results in a prompt for a file name from disk 1. That's all there is to it. The FCTN 9 key can be used to exit the screen dump at any time and can be used to exit the Load/Save routines prior to execution.

What happens? If dumping to the printer, you get a screen is reproduced in splendid detail, with all colors represented by varying degrees of shading. Shades are based on the "luminescence value" of each color. This allows the printer to display each color so that the viewer can readily tell the difference between, say, a green and a blue. This comes across quite well. As a point of reference, the colors of the drawing accompanying this article are :black, tree trunk; medium blue, water; light red, sky; shoreline, textured gray; palm fronds, dark green.

There are eight different shades used to represent the 15 colors on the printer. The user cannot actually use 15 colors and have 15 distinct shades appear on a black and white printout. But the user may redefine the shading

(Please turn to Page 32)





## BMC Color Monitor

# For sharp, clear images

By D.L. PARROTT

I used to think that I didn't want a monitor. I thought, "Why should I spend \$200 to \$300 for a video output when my 19-inch TV works fine?"

My TV setup performed all right for about a year, until I started poking around with Forth and the Editor/Assembler. Because of the TV's built-in overscan and 10 years of age, I was beginning to lose the first two characters on the left side of the screen in BASIC and four characters in Forth's 64-column editor. In experimenting with Bit-Mode graphics, almost all of the benefits were lost because of severe "bleeding" of the colors. It didn't take me long to see the need for the screen control and the clear, high-resolution color graphics that monitors give.

So, having decided to buy a monitor, I went shopping. Hitting the local dealers first, I was told that my TI would not support a monitor! So much for the local "experts."

Shopping around, I found the BMC color monitor on sale at a K-Mart for \$20 less than by mail-order. I was a little leary of the non-brand name, but when the sales person assured me of a 30-day return policy, no questions asked, I plunked down my money and took the unit home.

The BMC monitor is housed in an attractive, light beige, molded plastic case, matching the newer TI consoles. All of the controls are located under the screen at the front. The 3.2-inch speaker is located at the right rear, on the side. The on-off switch and indicator light are located in the front at the lower right of the screen.

The monitor rests on small, soft rubber pads, using up a footprint of 10 X 13 inches. The monitor stands 13.5 inches high and is 17 inches deep and 15 inches wide. It fits nicely on my PEB, with a couple of inches to spare on each side. The screen tilts back at an angle of about 15 degrees from the vertical. This angle causes a problem for me. When placed on

## Review

### Report Card

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

Cost: \$268.00

Manufacturer: BMC USA Inc.

Requirements: console

the PEB, the screen reflects light from my desk lamp right into my eyes.

**Performance:** With the advertised 350 lines of resolution, the screen images are sharp and clear, with little or no bleeding. The colors are sharp and intense.

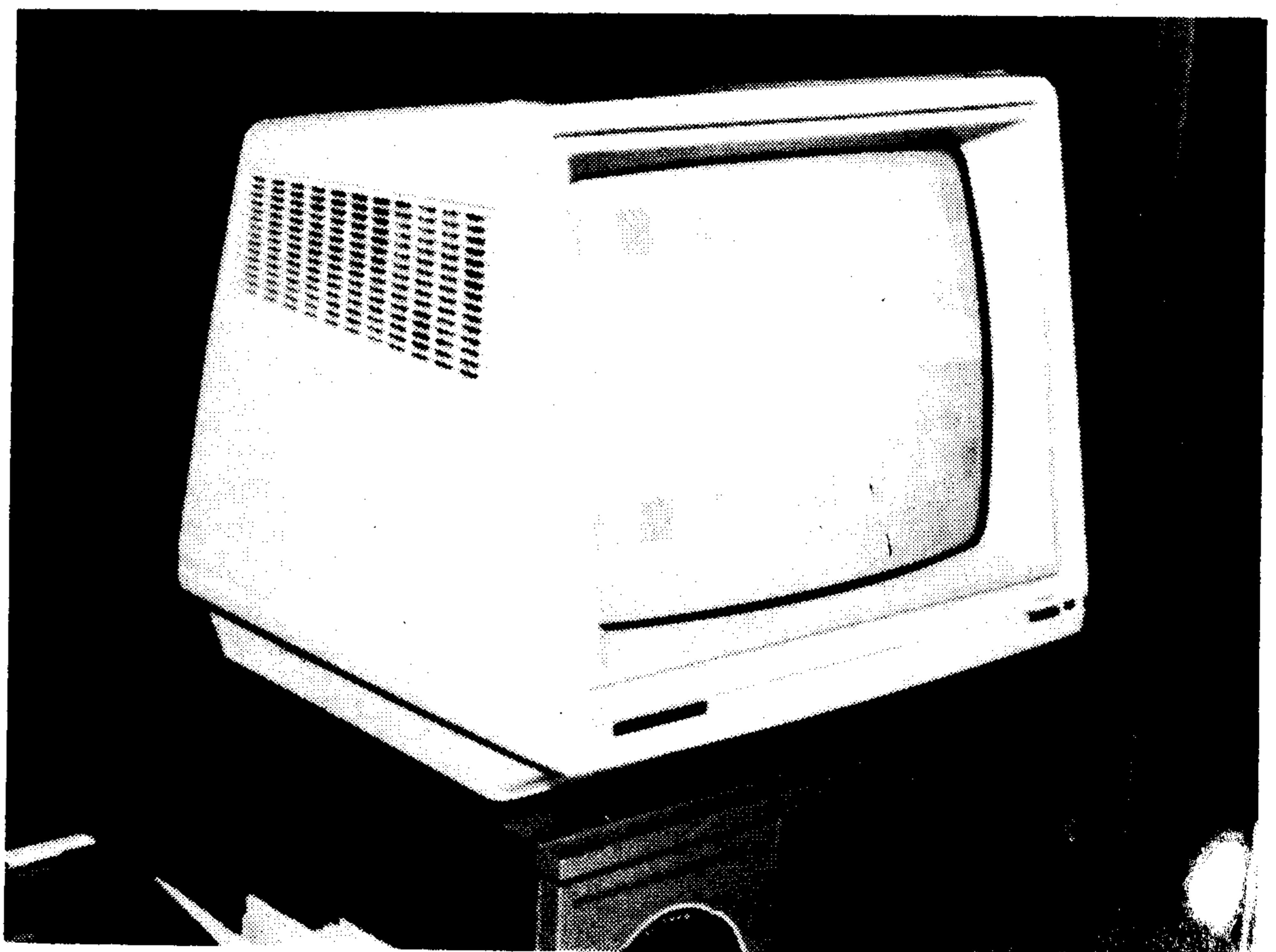
The monitor is also compatible with all VCRs and video-disc players with separate audio and video output jacks. Partially because of the smaller screen and the higher resolution, the picture from broadcast

TV and rented tapes and discs is impressive. I use the monitor occasionally to keep track of what's being taped, with the sound turned low, which I watch another channel.

Included with the monitor are two six-foot cables, one for the TI/Commodore, a five-pin DIN with RCA plugs, and one with RCA plugs on both ends. The audio and video input jacks are clearly marked in the back, on the upper left. Because this is a monitor, the RF modulator is no longer necessary. The five-pin DIN plug goes in the computer where the modulator went, and the two RCA plugs go into the audio and video jacks on the monitor. Nothing to it. Except that there is no indication of which plug goes into which port. By trial and error, I found that the red plug goes into the video and the black plug goes into the audio port.

The monitor users 60 watts and has a scanning frequency of 15.75 kilohertz horizontal and 60 hertz vertical. Its model number is BM-AU9191U.

**Ease of Use:** There are not many ways that you can get mixed up on  
(Please turn to Page 32)





## WDS/100—

(Continued from Page 29)

initialize the clock when using the hard disk. When file directories are output to a printer, the time and date of the creation of the file as well as the time and date of the most recent change to the file or program is included in the printout.

**Ease of Use:** The directory and file management system is very easy to figure out. Anyone familiar with how floppy disk systems are organized should have no trouble in understanding and using the hard disk system. The most time-consuming aspect of Winchester use is determining which file-producing programs will write and read files to the hard disk without major modifications. The Winchester allows you to access it as DSK1 so that programs that are normally LOADED via DSK1 can continue to be loaded from the Winchester.

**Documentation:** The WDS/100 comes with an extremely well-done manual. It is bound in a three-ring binder. It is full of tips on how to use the Winchester with various cartridges and fully describes its use with BASIC. It includes a very good table of contents and enough appendices to keep even the most critical user happy.

**Value:** A hard disk is a big step for any computer user, but those who can swing the price will probably not regret having spent the money. The system includes a 90-day warranty and is extensively tested at the factory before delivery. The Winchester increases the flexibility and speed of the TI system without sacrificing any features inherent in the TI system and does this as reliably as I would expect. I have encountered not a hint of hardware malfunction and have used the Winchester with both the TI and the CorComp disk controllers. Both are fully compatible with the Winchester.

## BMC MONITOR—

(Continued from Page 31)

the use of monitors. The only problem that I have is of portability. Apparently, the monitor is meant to

stay put. Although the unit is relatively light at 24 pounds, there are no provisions for a carrying handle or power cord storage. Even though this isn't a big problem, I would have like some portability.

All of the front controls are horizontal axis knobs with the bottom half of the knob peeking through the housing. This means that they are actuated by a thumb-wheel action. The volume control is usually the only control that I adjust during a session. This thumb-wheel setup frequently causes me to forget which way is up. When I try to turn down the volume (usually late at night) I and my no-longer-sleeping wife are treated with loud crescendos of "SHAMUS." A direction arrow or an earphone jack would have been helpful.

**Documentation:** The documentation consists of a three-page owner's manual. There was no information on the proper hookup, care and feeding of the unit. There isn't a list of authorized repair centers, nor is there a schematic of the innards, but that's not what I'm interested in anyway. The only instructions that are included are of the connect-video-input-cable-to-video-input-connector type. Too obvious to be of much help.

**Value:** The monitor is lightweight, looks good and performs superbly. It gives sharp, clear colors with little bleeding and overscan. Overall screen quality is excellent, as compared to the Commodore 1704 and the Amdek Color+.

Although it doesn't have the name brand recognition of other monitors, the BMC color monitor performs well. Along with the one year warranty and the excellent video display, the BMC monitor is an excellent value. Except for some inconvenience with the controls and the lack of information from the manual, I would recommend this monitor to all 99/4A users.

## SKETCH MATE—

(Continued from Page 30)

values of any color through use of a resident program called DEFINE. The program is set up in the PIO default,

but this can be easily reconfigured to an RS232 default. The printout itself is in double-width, double-height mode and is uniformly 8 inches wide by 5.25 inches high.

Here is a list of the eight shading patterns and the standard color defaults they represent: Pattern 1, dark red; 2, medium red and dark yellow; 3, light green and light red; 4, cyan and light yellow; 5, medium green, light blue and magenta; 6, black and dark green; 7, dark blue; 8, gray and white.

The program includes a variety of error messages, including a DISK FULL message that results when trying to save a drawing to a disk that has less than 50 sectors available. Drawings are saved as "programs" but cannot be loaded without the use of SKETCH MATE. Actually, two programs are saved: one the drawing under the filename you gave it and a second as an image file using the same name but changing the last letter to an "E." Assembly language programmers may obtain information about using these program image files in programs for \$1 from Amerisoft.

The program cannot be copied and running a catalog of the disk will reveal no program or files. Also, the program may not operate with all printers. I found it to be totally compatible with the Gemini printers, but it wouldn't work with a Prowriter. Those who are interested in purchasing Sketch Mate may want to confirm that the program will operate with their printer before ordering. Amerisoft says it will make versions of Sketch Mate available for other printers.

**Ease of Use:** Sketch Mate is very easy to use, as noted above. It does not get in the way of Super Sketch but certainly enhances it.

**Documentation:** The documentation consists of a four-page manual of tightly-packed instructions. Though the type is small, the directions are easy to follow and quite clear. The program is so user transparent anyway that very little documentation is required. Explanations of the use of the DEFINE program and color/shade equivalents are very useful.

(Please turn to Page 33)



# Freeware (or nearly so)

This page is a regular feature of MICROpendium. MICROpendium makes no claims as to the validity of any Freeware offer nor is there any guarantee that any software will be suitable for any purpose.

**Freeware requirements:**

- disks sent for freeware should be initialized;
- unless otherwise stated, you must include a stamped, self-addressed return mailer to receive the freeware;
- be patient (those offering Freeware are not doing it for a profit);
- report any problems you have to MICROpendium.

## Software updates

MICROpendium is offering file updates for TI-Writer and Microsoft Multiplan. Also offered at no charge is Super Bugger and an Extended BASIC loader for TI-Forth.

The TI-Writer enhancements offer new printer defaults and true lowercase letters. Multiplan enhancements include an auto-repeating cursor that speeds up program operation. The Forth loader allows TI-Forth to be used with Extended BASIC rather than the Editor/Assembler. Super Bugger is an improved version of TI-Debugger.

TI-Writer and Multiplan updates all fit on a single-sided disk. Super Bugger will fit on a single-sided disk. All three will fit on a double-sided diskette. The Forth loader requires a single-sided diskette. To order any of the above, send the appropriate number of diskettes to Freeware, c/o MICROpendium, P.O. Box 1343, Round Rock, TX 78680.

TI-Forth is also available. The cost is \$20 and includes the 232-page manual, the system disk with screens, a demo disk, postage and packaging. Purchasers are asked to include two initialized single-sided diskettes. MICROpendium will supply a third disk containing the source code for TI-Forth at no extra charge.

To order, send check or money and two diskettes to Forth, c/o MICROpendium, P.O. Box 1343, Round Rock, TX 78680.

## Free access library

Amnion Helpline is offering TI users its Free Access Library of public domain software. The library consists of 104 diskettes filled with programs for the TI99/4A.

The library is operated as a non-profit entity by Dr. Guy-Stefan Romano, director of Amnion Helpline. The helpline is a free information service for TI users who have questions about products and other aspects of home computing.

The library provides "volumes" of programs. There are 37 diskettes, or volumes, of games; 10 diskettes of graphics-oriented programs; 16 music-oriented diskettes; 14 diskettes of learning materials in many categories; eight diskettes of financial and business programs; seven diskettes of technical, scientific and statistical programs; six diskettes of personal and home use programs; and 6.5 diskettes with miscellaneous programs ranging from baseball statistics to programming utilities. There are also a limited number of Pascal and Forth programs available.

Volumes are \$5 each. The cost includes the single-sided diskette, mailer and postage. Users may send their own diskettes and return postage and mailer and obtain volumes for \$2.50 each.

Volumes on double-sided diskettes are \$8, \$4 if the purchaser sends a diskette, mailer and postage.

All programs may be copied and redistributed freely as long as no charge is made for them.

The library also will supply particular programs to fit specific purposes to any user who sends an initialized diskette with return mailer and postage. Enclose a note describing the type of program desired. Amnion will return the diskette with programs that fit the description.

Users are encouraged to donate programs to the library. There is no payment. Include a note stating that the program submitted is to be placed in the public domain.

Order forms for software volumes are available from the library. For more information, contact Amnion Helpline at (415) 753-5581 from 9 a.m. to 4 p.m. (Pacific time) or write to 116 Carl St., San Francisco, CA 94117.

## Free screen dump

Danny Michael, of Route 9 Box 460, Florence, AL 35630, has a Freeware screen dump program. The program is written in assembly language and is unprotected. It requires XBASIC and works with Epson/Gemini-type printers. The program includes instructions and fully commented source code. Send a diskette with a stamped, self-addressed return mailer. Or, send \$5 and he will provide the diskette, mailer and postage.

Michael is also offering Neatlist, an assembly language utility for Extended BASIC programmers. Neatlist produces an orderly listing of programs that can be a time-saver in debugging and modifying programs. The program allows the user to

set margins for program listings as well as starting and ending line numbers. Listings include easy to read program lines and a

list of variables used in the main and sub-programs. If you like it, he says, you may pay him for the program, but not more than \$10. If you don't like it, "you keep it anyway," he says. He asks that you give copies of the program to others. Send an initialized disk, postage and return mailer.

## Free craps game

Ramssoft Enterprises, 1501 E. Chapman Ave., Suite 338, Fullerton, CA 92631, is offering its Computer Craps game as Freeware. The game formerly sold for \$14.95. The game requires XBASIC and expansion memory. Instructions are included as a file that can be read by TI-Writer. Users are encouraged to provide free copies to others as well as long as the dedication screen is not removed. Send an initialized disk and \$2 to cover shipping and packaging.

## SKETCH MATE—

(Continued from Page 32)

**Value:** I would think that anyone who has a Super Sketch board, Widget and printer would definitely want to have Sketch Mate. I found great fun in doing printouts of drawings, examining them, making minor improvements and reprinting them. Again and again. That in itself makes the program worth the price for those of us who like to show off our better work. And being able to quickly save and load drawings from a disk opens up vistas of possibilities for those who like to start something, set it aside and then come back to it.

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# Newsbytes

## TC-Mail released

Ramsoft Enterprises, 1501 E. Chapman Ave., Suite 338, Fullerton, CA 92631, (714)738-5665, has released what is among the first applications programs that runs out of TI-Forth. The program, called TC-Mail, sells for \$9.95 and was written by Thi Chau. This mailing list program can write up to 710 records per single-sided disk. It sorts on any field and uses a 40-column display. The program includes fields for title, first name, last name, address, city, state, ZIP, telephone number and a comment line. The program will search on any field. The entire program resides in memory during operation. It has provisions for color or monochrome monitors and can be used to print mailing labels or phone lists. Labels may be printed 1, 2 or 3 across. It requires expansion memory, one disk drive and Editor/Assembler. A printer is recommended.

The program comes unprotected. According to Ramon Martinez, of Ramsoft, "The program is being marketed at \$9.95 to try to reduce unauthorized copying, thereby benefiting everyone involved."

## Utilityware

M&T Utilityware recently introduced two new items to its software product line: Disk + Aid and Credit Card Data Base/Payment Analysis.

Disk + Aid is a single sectoring program offering 29 menu-driven operations for single sectoring and limited memory viewing. The program is written in assembly language and is disk based. The program allows users to alter sectors, view CPU memory, dump screens to a printer, view GROM memory, read and write sectors, view VDP memory and more. The program comes in two versions: Version 1 for \$15 and Version 2 for \$22. The only difference between the two is that version 2 includes the source code as well as the object code. Both versions require a memory expansion. Either

version will operate out of Extended BASIC, Mini-Memory or Editor/Assembler.

Credit Card Data Base enables users to track information and transactions of up to nine credit cards with memory expansion, three without memory expansion. Up to 200 transactions can be tracked with a memory expansion, 90 without. The program features full editing capabilities and sorting of transactions.

Credit Card Payment Analysis is used to analyze credit card data, providing breakdowns on the amount of interest and principle paid each month. Based on average monthly payments, the program will calculate the month and year the credit card balance will be paid off as well as the total amount of interest paid.

Both programs require Extended BASIC. Data from each can be dumped to a printer. The price of \$7 includes both programs.

For more information, contact M&T Utilityware, 3507 Murl, Muskegon, MI 49442, (616)773-4504.

## Epson Tickler

Gembar Graphics, 455 Amherst Circle East, Satellite Beach, FL 32937, has released Epson RX-80 Tickler. The company also markets Gemini Tickler.

The Epson Tickler allows users to set font styles, countries, print pitches, line feed, form feed, margins and tabs using menus. The program can also be used to place the printer into any of its special print modes: double-strike, emphasize, underline, subscripting. The setups can be saved to disk for later use. Extended BASIC, expansion memory and disk system are required. The cost is \$11.95 plus \$1 for postage and handling. Floridians add 6 percent sales tax.

## DFX-Sketch-Filer

Data Flex Software, 4420 E. 100 N., Marion, IN 46952, has introduced DFX-Sketch-Filer, a program designed to be used with the Super Sketch

drawing board. Data Flex says this new utility program allows users to save and load Super Sketch artwork to disk. The program provides a menu allowing users four options: Quit, Load, Save and Print. (The program apparently uses a load interrupt switch to accomplish this.) Quit returns program control to Super Sketch while Load and Save are used to access a disk drive. Print is used to dump the screen to a printer using DFX-Print Version 1.2. DFX-Sketch-Filer requires a memory expansion, disk drive and either the Editor/Assembler, Extended BASIC or Mini-Memory cartridges. The cost is \$19.95.

## Lotto Picker

Ridge Services has introduced a program designed to help lottery participants. Called Lotto Picker, the program generates a series of random plays for Lotto-type games, duplicating the process used by state lottery commissions to eliminate bias from selections. According to the company, Lotto Picker has the 16 most popular Lotto games in North America pre-programmed into it. Games can be easily substituted. Keyboard or printer output controls allow the program to be customized to match any system. It is written in console BASIC and is available on cassette or disk. The price is \$25.

For more information, contact the company at 170 Broadway, Suite 201, New York, NY 10038, (718)833-6335.

Newsbytes is a column of general information for TI99/4A users. It includes product announcements and other items of interest. The publisher does not necessarily endorse products listed in this column. Vendors and others are encouraged to submit items for consideration. Items submitted will be verified by the staff before inclusion and edited to fit the Newsbytes format. Mail items to: MICROpendium, P.O. Box 1343, Round Rock, TX 78680.



# User Notes

## Spell-Check

A reader asks whether one can delete or change words in a user dictionary file created by 99/4 Auto Spell-Check. We're happy to say that it is not only possible but easy to do. There are several ways to do it, but we prefer using TI-Writer. The user dictionary may be loaded using the Load File command. For example, after the Load File prompt, enter, DSKn.UDICT and the user dictionary named UDICT will be loaded as if it were a TI-Writer text file, which it is. You can make changes at this point, deletions or additions, and then resave the file for future use by 99/4 Auto Spell-Check.

It is also possible to load the main dictionaries, though we do not recommend that these be modified. You will see why just as soon as you have loaded one.

Because the main dictionaries are very long, they cannot be loaded entirely into memory at one time. However, through the use of the TI-Writer merge procedure users may load portions of the main dictionaries. To do this enter the Load File command and then follow the procedures for merging part of a file, ie. enter the line number after which the dictionary is to be merged, a space, the line number of the first line of the dictionary you want to load, a space, and the line number of the last line of the dictionary you want to load, a space, and then enter DSKn and the filename. For example: 1 1 150 DSK1.DICT1 would do nicely to load the first 150 lines of the first dictionary file.

## Get it back

James Bandy of San Francisco, California, has a tip for those who use a memory expansion and Extended BASIC.

He writes: "Here is a trick you may not know that does come in handy if you have accidentally used XBASIC's protection and you have 32K memory expansion. First load your protected

XBASIC program then CALL INIT ::  
CALL PEEK(-31868,A,B,C,D) ::  
CALL PEEK(-31952,E,F,G,H) ::  
(write these values down) and type  
NEW then CALL LOAD  
(-31868,A,B,C,D) :: CALL  
LOAD(-31952,E,F,G,H) :: then LIST  
and your program is back!

"It would seem that NEW does not erase memory. It only changes pointers in memory."

## Shoot and fire

Gary Sonnenberg, president of the Watertown (Wisconsin) Area Computer Users Group, has a tip for Parsec players who use the keyboard rather than joystick for input.

He writes: "As the manual says, you cannot move your ship vertically and fire at the same time—using Q or Y, that is. However, you can move if you use the "period" key to shoot instead."

## Too much heat

Wayne White of Los Angeles, California, has a hardware fix that he says will keep your black and silver console running cool.

He writes: "Tired of all that heat between the power switch and the module port? You know, the coffee warmer effect! Go to your local Radio Shack and buy their -277-1016. It's the power board for the beige console and costs only \$4.95. Cautious? Here's how to tell it's new—the old board has blackened steel heat sinks; new boards have extruded aluminum heat sinks. (The board is available elsewhere, too.) Disassemble the 99/4A with a small phillips head screwdriver. Don't lose the power switch slider. Remove the old board, 18VAC plug and unplug the four-pin DC connector. Install the new board, orienting it properly and engaging power switch. The only thing you lose is heat and an LED power indicator."

MICROpendium recommends caution anytime users attempt to modify their hardware or software.

## Forth restart

TI-Forth users who load the Editor program and use it only to find that they would like to load the 64-column support file as well have two choices: one, they can turn off the machine and reload Forth and load the 64SUPPORT file, or they can restart the program by using the command COLD.

From the command mode, enter COLD and the menu screen will be reloaded while data in memory is deleted. You may then enter -64SUPPORT, for example, and be able to edit in the 64-column mode. Using COLD will allow you to reload any of the program segments at any time. Just make sure that you have FLUSHed any screen in memory if you want to save it before entering COLD.

## Bulletin board

The Downeast 99ers of Westbrook, Maine, are running an electronic bulletin board. The system, called the Downeast Connection, is on-line 24 hours each day. The phone number is (207)797-5690.

## 2 more boards

Gary Cox, vice president of the Mid-South 99 Users Group, Memphis, Tennessee, says that the UG operates a 24-hour TI electronic bulletin board using the TIBBS software. The number is (901) 452-2876. Incidentally, there are some 140 members in this group, Cox reports.

Another board to remember is the BBS run by the Southern California Computer Group at (619) 282-3525. The board is said to be super fast.

## BASIC help

What do you do when you have a BASIC program that takes up all available console RAM but you want to list it to a printer? Normally, you'd just send it to a printer using an RS232 port in the Peripheral Expansion Box but this can't be done  
(Please turn to Page 36)



# User Notes

(Continued from Page 35)

if all RAM is used. Some RAM is needed for system overhead. The Winnipeg 99/4 Users Group has some useful advice on this subject. The Canadians recommend that you turn your system on in a different than normal order. Turn the console on and then the PEB, instead of vice versa. This results in a savings of about two kilobytes of RAM. Of course, you couldn't gain access to the expansion memory in this way (but you can't use it from BASIC anyway). The RS232 port, however, should work normally.

## Disk memory

Want to know how much space remains on a disk but don't want to run a disk catalog to find out? You don't have to, thanks to the following program by Chick De Marti of the Los Angeles 99ers Users Group. The program tells you the name of the disk and the number of sectors used and available. It then prompts you for another disk so you can check a number of disks without having to restart the program. The output can also be directed to a printer. It can be run in BASIC or Extended BASIC.

```

100 REM*****
*****
110 REM DISK MEMORY AVA
ILABLE
120 REM BY Chick De Mar
ti 1983
130 REM*****
*****
140 CALL CLEAR
150 PRINT "PRESS (S) SC
REEN ONLY" ::
160 PRINT " (P) COPY AL
SO" ::
170 PRINT " (ENTER) TO
EXIT"
180 FOR ROLL=1 TO 6
190 PRINT
200 NEXT ROLL
210 GOSUB 380
220 OPEN #1:"DSK1.",INF
UT,RELATIVE,INTERNAL
230 INPUT #1:A$,J,J,K

```

## Forth PIO

Listed below is Forth screen 72, which determines the I/O configuration. The original TI-Forth program is designed for RS232 defaults. By modifying the screen as shown

```

SCR #72
0 ( ALTERNATE I/O SUPPORT FOR PIO  PNTR 12JUL82 LCT)
1 0 CLOAD INDEX      BASE->R DECIMAL 68 R->BASE CLOAD STAT
2 0 0 0 FILE >PIO    BASE->R HEX
3 : SWCH >PIO  PABS @ 10 + DUP PAB-ADDR ! 1- PAB-VBUF !
4 SET-PAB OUTPT F-D" PIO"                OPN 3
5 PAB-ADDR @ USBW 1 PAB-ADDR @ 5 + USBW PAB-ADDR @ ALTOUT ! ;
6 : UNSWCH 0 ALTOUT ! CLSE ;
7 : ?ASCII ( BLOCK# --- FLAG )
8     BLOCK 0 SWAP DUP 400 + SWAP
9     DO I C@ 20 > + I C@ DUP 20 < SWAP 7F > OR
10    IF DROP 0 LEAVE ENDIF LOOP ;
11 : TRIAD 0 SWAP SWCH 3 / 3 * DUP 3 + SWAP
12 DO I ?ASCII IF 1+ I LIST CR ENDIF LOOP
13 -DUP IF 3 SWAP - 14 * 0 DO CR LOOP
14 OF MESSAGE 0C EMIT ENDIF UNSWCH ;
15 R->BASE  -->

```

```

240 IF AN$="P" THEN 250
ELSE 270
250 OPEN #2:"PIO",OUTPU
T
260 PRINT #2:" - DISKNA
ME=";A$:"AVAILABLE=";K;
" USED=";J-K
270 DISPLAY "DISKNAME -
";A$:"AVAILABLE=";K;"US
ED=";J-K
280 PRINT
290 PRINT "--ENTER NEXT
DISK:"
300 PRINT
310 IF AN$="P" THEN 320
ELSE 330
320 CLOSE #2
330 CLOSE #1
340 AN$="NUL"
350 GOTO 210
360 CALL CLEAR
370 END
380 REM**CHOICE FROM ME
NU**
390 CALL KEY(O,A,S)
400 IF S=0 THEN 390
410 IF A=69 THEN 360
420 IF A=83 THEN 440
430 AN$="P"
440 RETURN

```

Users may want to modify line 250 to correspond to their printer configuration.

below, users will be able to use parallel printers. Everything must be exactly as it is, or it won't work properly.

## Multicolor MP

The credit for this tip goes to the Lehigh 99er Computer Group, even though it's in the Microsoft Multiplan manual, Page 12 to be exact. Here's how to change the color and text of the Multiplan screen: choose the Multiplan option from the main menu. You will be prompted to press the enter key to load the program disk files, but don't. First, press the space bar. You will find a choice of 12 screen colors to choose from. Once you've decided which color you prefer, you may load the Multiplan program.

As they say: when all else fails, read the manual.

## Magnify

The following program by Ed York of the Cin-Day Users Group in Cincinnati, Ohio, lets you see what characters of your own design will look like in normal size and magnified. It provides two magnified views. All you need to do—after entering the following program, of course—is to enter the character string at the prompt. Incidentally, it will notify you when

(Please turn to Page 37)



# User Notes

(Continued from Page 36)

you've entered an invalid character pattern.

```

100 DISPLAY AT(10,1)ERA
SE ALL:"ENTER CHARACTER
PATTERN:"::"000000000000
00000"::ACCEPT AT(12
,1)SIZE(-16):A$::FOR
A=1 TO 8 STEP 2
110 B#=B#&SEG$(A$,A,1):
: NEXT A::FOR B=2 TO
8 STEP 2::C#=C#&SEG$(
A$,B,1)::EXT B::FOR
C=9 TO 16 STEP 2::D#=
D#&SEG$(A$,C,1)::NEXT
C
120 FOR D=10 TO 16 STEP
2::E#=E#&SEG$(A$,D,1)
::NEXT D::F#=B#&C#&D
#&E$::FOR E=1 TO 16:
: G#=SEG$(F$,E,1)::GOS
UB 180::H#=H#&I$::N
EXT E
130 DISPLAY AT(18,1)ERA
SE ALL:"ORIGINAL:"::D
ISPLAY AT(18,12):A$::
DISPLAY AT(20,1):"MAGNI
FIED:"::DISPLAY AT(20
,12):SEG$(H$,1,17)
140 DISPLAY AT(22,1):SE
G$(H$,18,28)::DISPLAY
AT(24,1):SEG$(H$,46,19)
::CALL CHAR(95,A$)::C
ALL CHAR(96,H$)::DISP
LAY AT(2,1):"ORIGINAL:"
150 CALL HCHAR(2,13,95)
::DISPLAY AT(2,14):"MA
GNIFIED:"::CALL HCHAR
(2,27,96)::CALL HCHAR(
2,28,97)::CALL HCHAR(3
,27,98)::CALL HCHAR(3,
28,99)
160 J#=B#&D#&C#&E$::F
OR F=1 TO 16::G#=SEG$(
J$,F,1)::GOSUB 180::
K#=K#&I$::NEXT F::
CALL CHAR(100,K$)::CAL
L MAGNIFY(4)::CALL SPR
ITE(#1,100,2,84,120)
170 CALL KEY(O,G,H)::I
F H=0 THEN 170 ELSE CAL
L CLEAR::CALL DELSPRI
TE(ALL)::A$,B$,C$,D$,E
$,F$,G$,H$,I$,J$,K$=""
: GOTO 100

```

```

180 IF G#<>"0" THEN 190
ELSE I#="0000"::RETU
RN
190 IF G#<>"1" THEN 200
ELSE I#="0303"::RETU
RN
200 IF G#<>"2" THEN 210
ELSE I#="0C0C"::RETU
RN
210 IF G#<>"3" THEN 220
ELSE I#="0F0F"::RETU
RN
220 IF G#<>"4" THEN 230
ELSE I#="3030"::RETU
RN
230 IF G#<>"5" THEN 240
ELSE I#="3333"::RETU
RN
240 IF G#<>"6" THEN 250
ELSE I#="3C3C"::RETU
RN
250 IF G#<>"7" THEN 260
ELSE I#="3F3F"::RETU
RN
260 IF G#<>"8" THEN 270
ELSE I#="C0C0"::RETU
RN
270 IF G#<>"9" THEN 280
ELSE I#="C3C3"::RETU
RN
280 IF G#<>"A" THEN 290
ELSE I#="C0CC"::RETU
RN
290 IF G#<>"B" THEN 300
ELSE I#="CFCF"::RETU
RN
300 IF G#<>"C" THEN 310
ELSE I#="FOFO"::RETU
RN
310 IF G#<>"D" THEN 320
ELSE I#="F3F3"::RETU
RN
320 IF G#<>"E" THEN 330
ELSE I#="FCFC"::RETU
RN
330 IF G#<>"F" THEN 340
ELSE I#="FFFF"::RETU
RN
340 DISPLAY AT(12,1)ERA
SE ALL:"YOU ENTERED A W
RONG LETTER!"::FOR B
=1 TO 1000::NEXT B::
GOTO 100

```

## That OLD CS1

Ever get the notion to start loading a program from a cassette only to decide after entering OLD CS1 that you've changed your mind? What's a person to do? Turn the console off? Let the load routine run to its lengthy, and pointless, conclusion?

Not necessarily. There is an easy way out. After entering OLD CS1 simply press SHIFT E and you will get the message PRESS CASSETTE STOP/THEN PRESS ENTER. Press enter and you will have escaped.

## Printer orders

Don Shake of Lakewood, New Jersey, has a few tips to offer for printer users, particularly those who use Microsoft Mulltiplan. Although this can be used any time, he reminds users that when they want to print out a very wide spreadsheet to one page they can place the printer into condensed mode and it will print 132 characters across the page rather than the standard 80. This is done from BASIC before using the printer. The following code will do the trick nicely:

```

OPEN 1:"PIO"
PRINT 1:CHR$(27);CHR$(66)

```

The OPEN statement should include the printer requirements, whether RS232 or PIO. The PRINT statement is used to define the type of character set you want to use. CHR\$(27) is for ESCape and CHR\$(66) is for condensed type using a Gemini.

User Notes is a column of tips and ideas designed to help readers put their home computers to better use.

The information provided here comes from many sources, including TI home computer user group newsletters. MICROpendium will pay \$10 for any item sent in by readers that appears in this column. Mail tips to: MICROpendium, P.O. Box 1343, Round Rock, TX78680.



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