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MICROpendium

Covering The TI99/4A Home Computer And Compatibles

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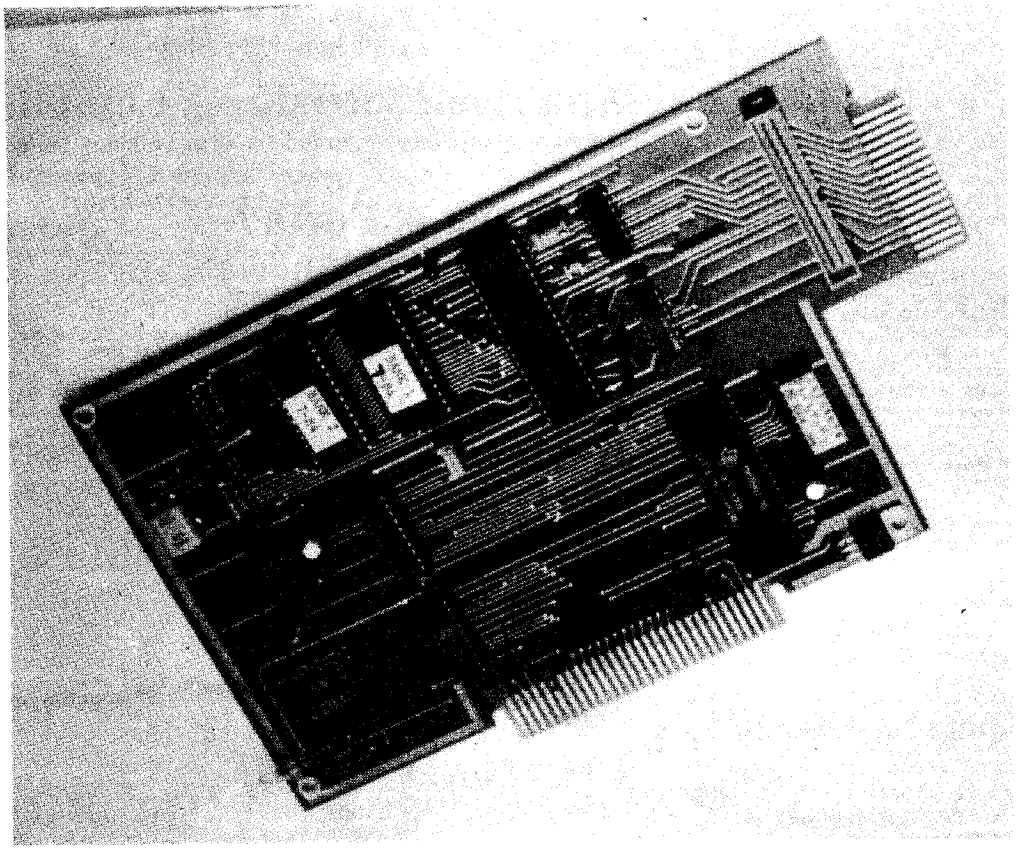

A new disk controller for the TI

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MICROpendium

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Laura Burns ..... Editor

Coming Next Month

—Further with Forth
—More on CP/M and 80-column card
—Black Friday revisited

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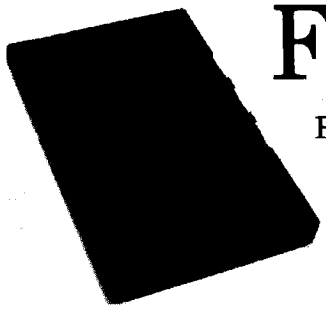

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Comments

There's a lot going on

Every month has its surprises when it comes to covering the TI99/4A. One of them is the anticipated marketing of a second disk controller card for the Peripheral Expansion Box that can handle double-density diskettes. This one is from Myarc Inc. and is supposed to come in the same sturdy enclosure that TI used for its peripheral expansion cards. It is designed to access up to four drives and is expected to come with the TI Disk Manager II cartridge and a cable. This issue carries a lengthy assessment of CorComp's disk controller card, which was released several months ago.

In a more general vein, who would have thought last year when TI announced that it was leaving the home computer market that there would be as much hardware and software support as there is today? At this point, the only critical element in the TI system that is not available from third-party sources is the TI99/4A console itself.

Software development is in the midst of a rapid expansion. As an example, six months ago TI users had only one disk-copying utility to choose from. Today there are probably a dozen or more. Four months ago there was only one 1200 baud terminal emulator program, now there are several. And the list can easily be lengthened for other products, hardware and software. More importantly to the consumer, as competition increases in the marketplace, quality is going up and prices are coming down.

Although I can't give much in the way of details, there may be another TI99/4A compatible computer coming out in the future (and rumors of a TI99/4A being assembled in Argentina continue to be heard). CorComp Inc. had plans of marketing a new computer, dubbed the Phoenix, but a timeframe on that project is indefinite at best. This other computer is being developed, I understand, in the U.S. The only information I have at this time is that it is supposed to be many times faster than the 99/4A and completely compatible with the PEB.

Foundation Computing is shipping its 128K memory expansion card for the PEB with a DSR (device service routine) chip that lets users access three blocks of 32K as a RAM disk. This is in addition to the 32K that is available when the system is turned on. The accessing is done directly through the keyboard. The chip adds about $30 to the cost of the card and I recommend it. We will be reviewing the card in the near future. Suffice it for now to note that one can use the three memory banks to store one file or program in each and recall them in much the same way one loads a program from disk, only faster. It works well with TI-Writer files and BASIC programs.

We hope to have a review of the Foundation 80-column card, too, as soon as we can get one. As of mid-October, Foundation was still modifying it.

And let's not forget that the Chicago TI Users Group will be holding its second annual TI Faire from 10 a.m. to 4 p.m. Nov. 10. The guest speaker will be Don Bynum, former head of TI's home computer division. His topic will be "Life After Death for the 99/4A." The official theme of the Faire is "Still Goin' Strong!"

The group expects up to 2,000 visitors and will admit anyone who belongs to a registered TI user group free (a membership card of some kind is required). General admission is $2. As of mid-October, some 16 vendors had signed up to display software and hardware, according to Dave Wakely of the Chicago UG. He indicates that some manufacturers have expressed interest in attending and "they may have some important announcements of new products." There will also be presentations on a variety of subjects, door prizes and arcade game contests.

The Faire will be held at the College Center Building of Triton College, River Grove. River Grove is west of Chicago. Anyone who wants to learn more about the Faire may contact the group through its electronic bulletin board, (312) 848-3669, or via the TI sections of The Source or CompuServe.

There's been some interest expressed by readers who are interested in obtaining copies of Super Bugger, the debugger program released to user groups by TI. We have a review of it in this issue, as well as a piece that may be of some help to those who are having trouble using it. We are trying to obtain a copy and when we do we will make it available to readers on the same basis that we have made the Multiplan and TI-Writer software enhancements available. Although we didn't intentionally set out to provide a "freeware" service, we seem to be moving in that direction.

That's all for now.

—JK

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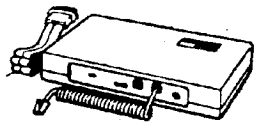

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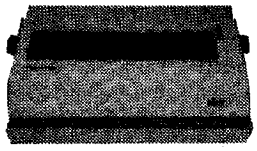

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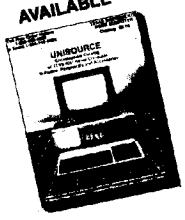

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Feedback

User preference

I'll offer my opinions on the apparently settled controversy about publishing software protection devices and keys.

I've given some thought to the matter as a small-scale software developer, but my feelings on the subject are largely those of a software consumer. I own no pirated software and would buy none. The Companion (word processor) program I used to write this, however, is in one sense a pirate version. I had never been much into "hacking," but I got so tired of the forced choice of white as a foreground color on Companion that I finally got out my Disk-Fixer cartridge and unlocked one of the two disks I owned (I had bought an authorized back-up) and unprotected the disk and the program just so I could write in a couple of CALL LOAD statements to give me my personal favorite color combination: green against grey. While I was at it, I copied the program onto a disk which held a lot of other useful utilities, so I wouldn't have to swap disks when the writing urge came over me. The point is that effort was a pain, and I would have been grateful to have learned how to do it all from some magazine or newsletter, and have been spared the pain.

Now I know that if the information necessary to "unprotect" Companion were published then a few people would probably mercilessly pirate the program; and I know that legal remedies to software piracy are difficult to secure. I question, however, whether publishing standards ought to be set always with the worst readers' morals in mind. Do you deny the greater choice of color combinations or any similar modification of a program to a user who hasn't the knowledge to do it for himself (and is too honest to buy one of the pirate versions that are out there anyway) simply in order to make yourselves as publishers feel a little more righteous?

I don't know the answer to that question.

Richard Minutillo
Roslindale, Massachusetts

Ed: To answer your question, righteous we are not. Our decision not to publish the protection keys was based largely on reader opinions. Of course, we would like to publish what we (and a lot of other users) know, but remain concerned about the consequences. We know of more than one vendor who tells us of persons who purchase pirated copies of their software who send them requests for documentation so that they may use the programs. One vendor, who is an active member of a user group, says he is aware that several dozen of the group's members have copies of his program though he actually sold only two to persons living in that city. Perhaps all of the copies were provided free as a courtesy between individuals, but the fact remains that the vendor suffered the loss of many potential sales. And there is no question that this sort of thing is going on all over, all the time.

But what we know of unprotecting software has to do mostly with programs written in Extended BASIC. Most of the new programs are being written in Assembly language to run out of expansion memory and utilities some very sophisticated protection techniques. Had we the information, would it be fair of us to publish methods to unprotect these new protection devices, too? Where does one draw the line? You see, we continue to question ourselves on the matter and have yet to come up with satisfactory answers.

More orphans

In addition to your coverage of the TI99/4A, would it be possible to devote some attention to the other of the TI "orphans," namely the CC-40. The CC-40 is virtually ignored by other publications which claim to support TI products. In my opinion, this is a versatile and vastly underrated machine. It would appear that TI's support of the CC-40, both in terms of hardware and software, is non-existent. TI's response to questions about the future of the CC-40 seem vague and uninformed. The biggest problem lies in the lack of mass storage capability. TI had proposed a "Wafertape" drive as a mass storage medium, however, it was never made available and no alternative method of storage has been proposed or developed. At one time there was proposed a "Hexbus" adapter for the 99/4A which would have enabled the CC-40 to have had limited compatibity.

I would also be interested in any information on the 99/2 and the 99/8.

Michael Sciascia
Plano, Texas

Ed: We would consider items submitted by readers concerning the compact CC-40. The CC-40 was abandoned by TI at the same time the 99/4A was abandoned, the difference being that the CC-40 had only just made its debut and thus was more promise than reality. The 99/2 was TI's attempt to enter the very low-end of the computer market against the VIC 20. TI subsequently slashed the price of the 99/4A and thus undercut the 99/2, making it useless as a marketing effort. The 99/8 was supposed to be the successor to the 99/4A and was to be unveiled in mid-1983. However, TI kept it under wraps and only a limited number of the machines was produced, mostly for testing purposes. Most of these were scooped up by TI employees when TI left the home computer market.

Different view

I don't feel the TE1200 deserves the high grade you gave it in your review (August). I only have used it in the 300 baud mode to date, so can't address its 1200 baud performance. Its unfortunate implementation of

(Please turn to Page 20)

The Feedback column is for readers. It is a forum to communicate with other readers. The editor will condense excessively lengthy submissions where necessary. Contributors should restrict themselves to one subject for the sake of simplicity. Mail Feedback to: MICROpendium, P.O. Box 1343, Round Rock, TX 78680.

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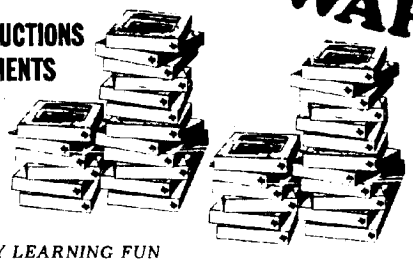

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Not 1 but 2 database managers

Acorn 99 to debut

Oak Tree Systems, 3922 Valentine Rd., Whitmore Lake, MI 48189, has just released its Acorn 99 database system for the TI99/4A. The system is designed for programmers and non-programmers alike, according to the company. The system comes on two disks and requires one disk drive, 32K memory expansion and Extended BASIC. The cost is $59.95.

The system allows users to determine item types and sizes, number of items, record sizes and number of records. Up to four types of related records can be stored in a single database. Users may also specify range and value checking to ensure the correctness of data entered into the database.

The system allows programmers to access up to three databases simultaneously using Extended BASIC programs. The database subsystem can be inserted into programs and a pre-processor will automatically insert required statements and subroutines into XBASIC programs written by users. Critical functions are written in Assembly language. The system includes a subset of the company's 40-column Display Enhancement Package.

The company also plans to introduce an Expanded Pre-Processor that will generate Extended BASIC statements to produce custom menus, screens and reports without programming.

Navarone issues DBM

Navarone Industries has introduced a database system on a cartridge. The program carries the rather generic name Data Base Management. Included in the cartridge are three program segments: entry, sort and report. The package includes a number of files on diskette. The system sells for $69.95.

The Navarone database system allows users to create records consisting of up to 25 fields and 255 bytes. The system can handle up to 32,000 records.

The system incudes a database setup function for designing entry screen formats and setting data parameters. The entry program uses the screen and setup file for entering data. This segment provides such file maintenance operations as Find, Display, Change, Add and Delete.

The sort segment of the program is used to sort files using up to six nested sort keys. The sort size is limited only by disk space. The program may be used with a hard disk, according to the company.

The report segment of the program is used to design reports for printing or screen viewing. This highly flexible program allows users to design reports in virtually any format using database files.

The system requires a disk drive and memory expansion. A printer and printer interface is optional. The system comes with a 36-page manual.

The company is also introducing several new programs, including Speed Reading ($49.95), Homework Helper ($49.95) and Console Writer ($49.95). All are on cartridge.

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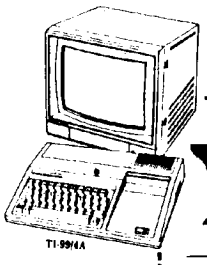

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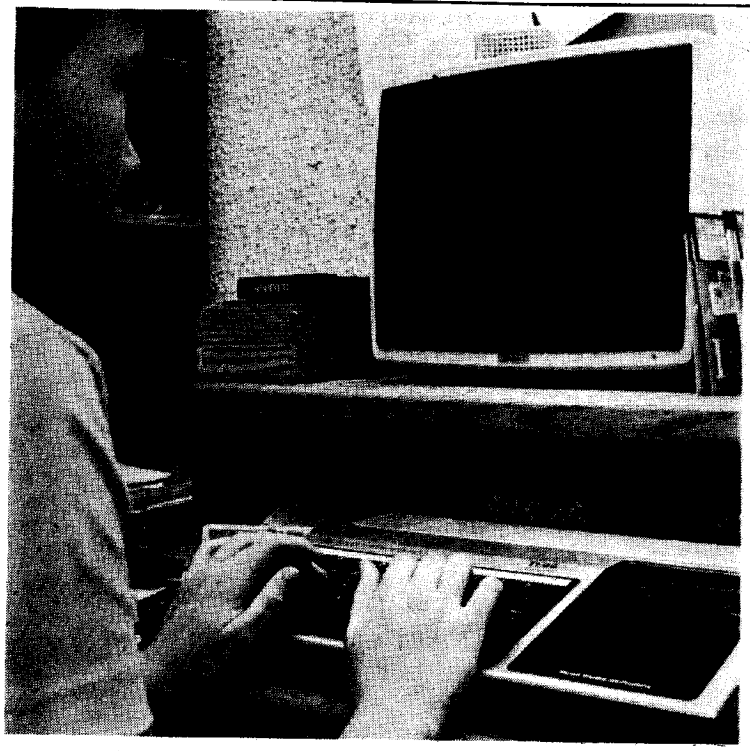

Computer Lit.

By LAURA BURNS

"Computer literacy" may be one of the major catch-phrases of the 1980s.

Indeed, many a TI99/4A was purchased at least in part for its supposed advantage in helping introduce young persons to the world of the computer.

Computers are to be found in the classroom, too, but what to do with them and whether they are being used to their full advantage is a subject of much controversy in educational circles.

The role of the computer in the classroom seems to vary around the country.

Public schools in Minnesota, for instance, have an "information technology" requirement. School districts must offer information technology from the kindergarten through 12th grade levels to receive their 70 percent funding from the state, according to Gilbert Valdez, manager of the technology and curriculum integration department of the Minnesota Department of Education.

"Computer literacy," he says, is a term the Minnesota Department of Education as too narrow.

"We don't intend to produce programmers," he says, adding, however, that many students do take elective programming courses.

Information technology is integrated intoo the curriculum in many ways, he says.

"There's a very good application for a data base in social studies," he says. Word processing, likewise, would enter into composition courses, he notes.

The trend now is to search through a database rather than a card catalog in a library, for instance, h says.

About 18,000 computers are Minnesota classrooms, according Valdez,, but the state is also "ve heavy" into other kinds of techn ogy, he says, such as media produ tion and four kinds of two-wa televisions.

"If the computer is going to b useful in education, it's going t have to be tied in with other forms technology," he points out.

Minnesota seeks to make the co tent areas of various subjects mo interesting through the use of tec nology, while showing technolog applications at the same time, h says.

Pristen Bird, instructional co puting consultant of the Educatio Technology Office, Florid Department of Education, says th legislation was passed in Florida 1983 to establish minimum stude performance standards in comput literacy. Students will have to me these standards—now in the proce of being developed statewide—alo with standards in other basic su jects in order to graduate from hig school. Test items are being dev loped and tested for a final review which each school district has o vote, scheduled for October. Appr val of the minimum standards scheduled for early 1985 and the implementation at a later date.

The Florida program, she say basically does not include comput programming, keyboard skills the history of computers. Instea students will be expected to:

1. Have a basic understanding the operation of equipment.
2. Be able to operate a compute for instructional purposes.
3. Understand the function of th basic parts of the computer.
4. Recognize the impact of compu ter technology on society and th need for its ethical use.
5. Understand the capabilities an applications of various computer and computer systems.

(Please turn to Page 12)

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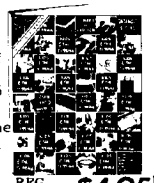

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PRESSURE IN FLORIDA—

(Continued from Page 10)

6. Understand the process of programming.

Pressure to institute the requirement, Bird notes, came both from the top down, for reasons of economics, and also from the grass roots, from students and parents. She added that it is also is very motivating for teachers.

Some problem may exist, she concedes, between "haves and have-nots," students with from three to five years experience with a computer at home versus students whose first experience might literally be in the school system. For the latter, she says, there might be ways of providing additional support such as equipment loan programs or more exposure to the computer at school.

She adds that she has heard the argument advanced that 25 years ago there might have been an issue of equity regarding access to television.

"I don't know how much analogy there is," she says. "The computer is not as entertaining."

Since "haves and have-nots" also exist among school districts, Florida also allocated $10 million for hardware and software for schoool districts, the amounts awarded to each district based on student enrollment, Bird says.

A more preliminary approach is taking place in Arizona, where the Department of Education provides purchasing information and help for districts in software evaluation.

Chris Castillo, of the Arizona Department of Education, says that there is no computer requirement in Arizona public schools, although almost every school district has microcomputers. She says that some schools are implementing computer education in all grade levels and all subjects, while other districts may use computers only for the gifted, special education students or Title I-Chapter I students. Some districts use them only at the secondary level, she notes.

Some high schools offer vocational clases in computer programming and word processing, she says.

The Arizona State Board of Education confirms that there is no legislation proposed currently to require computers or adopt computer textbooks in that state.

The Texas Legislature, in a special session this summer, passed a comprehensive educational reform bill, adopting the recommendations of a special gubernatorial task force headed by computer magnate H. Ross Perot.

Computer literacy at the junior high level is part of the package. Textbooks at this level are expected to be in the classroom by 1986 because of time needed for proposals to go out for them, explains Keith

(Please turn to Page 14)

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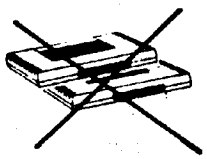

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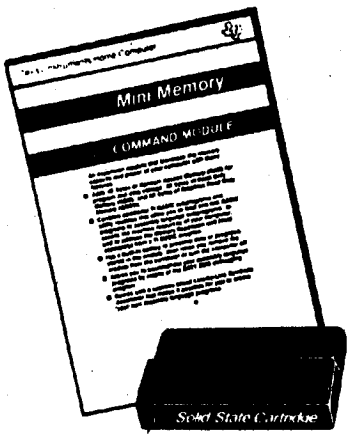

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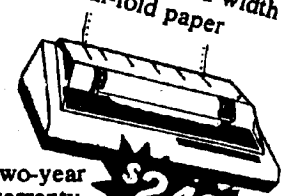

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TEXAS COMPUTER EDUCATION ASSOCIATION SETS GOALS—

(Continued from Page 12)

Mitchell of the Texas Education Agency.

The lack of textbooks, he says, is "one reason we worked very hard to get a curriculum guide out to teachers."

He notes that "excellent textbooks" are out but that most are at a college or high school reading level. Texas Education Agency officials suggest that teachers keep some of them on the shelf of computer classrooms.

Statewide goals for the one semester junior high school course have been set by the Texas Computer Education Association and include:

1. To understand how a computer works.
2. To understand how computer technology evolved.
3. To explore the uses of computers in today's society.
4. To project ideas of future capabilities of computers.
5. To explore applications such as word processing, data bases and spreadsheet accounting.
6. To program in BASIC and Logo.
7. To discuss social implications, including computer crime.
8. To explore career possibilities.

Yet, even when goals are unified in some states, methodology may still differ from classroom to classroom as in every other subject.

Karen Jones, who teaches computer literacy at Chisholm Trail Middle School in Round Rock, Texas, notes, for instance, that some teachers "save" programming for the end of the semester in order to help classroom discipline. She, however, integrates programming throughout the semester. She notes that programming is difficult to teach and that there is a "big debate" as to how much programming should be used for computer literacy.

Jones, a former board member and former secretary of the Texas Computer Education Association, is an enthusiastic proponent of computer literacy as a required course in public schools.

No job advantage

So you live in a state, or a school system, without any overall goals or objectives for its computer courses or the way computers are used in the classroom. Is this cause to worry?

Probably not.

Campus Voice, a magazine distributed nationally on college and university campuses, recently interviewed employers and recent college graduates on the subject of computer literacy. It found that computer skills did not help persons get jobs except in such fields as programming and data analysis. Although many other jobs require use of a computer, they do not require advanced technical knowledge, and the training necessary can be acquired on the job.

This being the case, are computer literacy courses perhaps a frill, a waste of time?

Not according to Karen Jones, who teaches computer literacy at a middle school in Round Rock, Texas.

Computer courses aid the students in developing logical reasoning, inductive and deductive skills, she says.

"It's never really been proven you can learn reasoning skills," she says, "but it sharpens the reasoning skills they have."

"There's nothing in this society not touched by computers," she says, noting that even writers and artists will use them increasingly for word processing and graphics capabilities. Some academics have feared that technological courses of this nature may take away from traditional subject areas in the humanities, but she says she points out that, in Texas, computer literacy has been added to the curriculum as an additional subject, rather than integrating it as part of existing subject areas.

She notes that other criticism has been directed at the idea of a student working at a machine rather than relating to other persons. However, Jones says she has seen shy students becoming leaders and achieving personal goals.

"I've been real impressed when they come up with solutions or procedures and kids come up to them and ask for help," says Jones, who has also taught computer courses at the high school level.

Having a computer at home can have good or bad effects on a student.

"Kids get into games and that's all they want to do," she says. "They can burn out on games and burn out on the computer. They can teach themselves bad programming. Some are hard to convince they don't know everything."

At school, she teaches on the TRS80. She notes that students with a different brand of computer at home, such as the TI99/4A, are better off because they can see how a program works on a different computer and get a different view. A problem with computers at the elementary level are teachers "who don't want to mess with computers" and teachers "who think they know computer technology and don't." However, she adds, there are some self-taught teachers who are doing an excellent job. Jones says she gets to school at 7:45 a.m. and "two or three kids will be waiting for my key." Students will stay after school to work on the computers.

She notes that her students are not allowed to copy programs on any of the school equipment. A programmer for the TI99/4A and Apple herself, she says, "A lot of these kids don't see that what they're doing is theft. Most of them just want to take a game home and play it."

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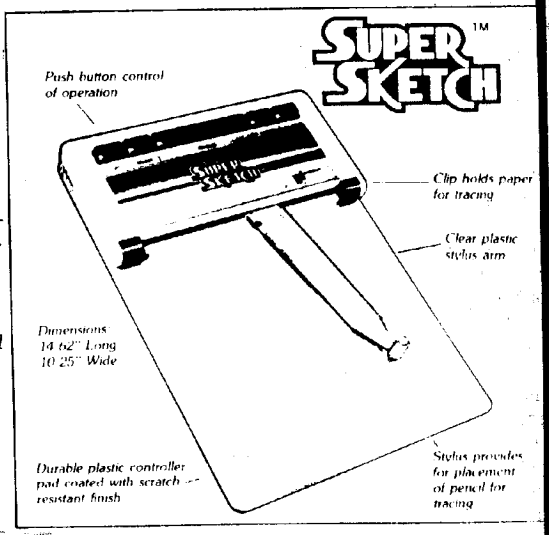

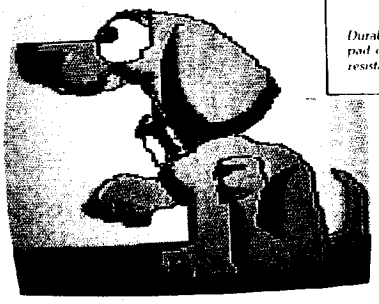

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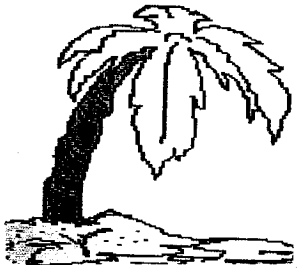

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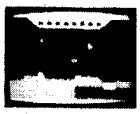

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Morning Star's CP/M card being shipped out now

Morning Star Software, 4325 SW 109 Ave., Beaverton, OR 97005, says there's been a lot of interest expressed in the company's CP/M card for the TI99/4A over the past year. However, until now, the company has not been shipping the cards, nor has it been accepting payments from potential purchasers.

The card sells for $595 and is designed to be used in the TI Peripheral Expansion Box. Those who have responded to advertisements the company has published over the past year have received brochures describing the card and software.

Scott Swenson, owner of Morning Star, says that those who have inquired about the card are currently being notified of its availability.

The card uses CP/M software in the Osborne I format (single—sided, single—density). The card will write files to double-sided diskettes using the TI disk controller. However, the card does not support double-density formatting. Swenson indicated that his company would like to offer double-density capability in the future.

The card uses an Intel 8085, 8-bit microprocessor. Available software includes Personal Pearl database, a CBASIC interpreter, Super Writer word processor and a comprehensive series of business software called Business Master Plus. All are available at extra cost from Morning Star. The card supports a range of languages, from Pascal to Fortran to ADA.

Swenson notes that the card is not optimized for word processing, noting that it runs in graphics mode for text. He says the card can run Word Star.

The company is working on a terminal emulator to work with the Hayes Smartmodem. This would allow users to access CP/M software over electronic bulletin board services.

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Virtuosos sought in new contest

Response to the first MICROpendium Software Improvement Contest picked up a lot in September, and that's why we're starting the second contest. Prizes are $50 for first place and $25 for second place.

The program for this contest appears in the User Notes section of this issue. It is published under the headline "Making music." The program turns the keyboard into an "organ."

Because the program is written in BASIC, we're limiting all entries to console BASIC. The program must not be longer than 1,500 bytes. We will award first and second place prizes on this one. The winning entry will be published in the January issue of MICROpendium. Improvements may vary, ranging from the use of graphics to implementation of "pedals," etc. A big help to those who play the "organ" might be a way of visually identifying what tones go with which keys.

We ask that all entries be submitted on disk or cassette to facilitate the judging. Having to input the entries for the first contest took up a lot of time. We will return all entries, of course, provided that sufficient postage is included.

Mail entries to MICROpendium Software Contest, P.O. Box 1343, Round Rock, TX 78680. All entries must be postmarked no later than Dec. 10. Include any documentation necessary to operate the program.

Winger wins first challenge

Kent Winger of Ogden, Utah, is the winner of our software improvement contest.

The contest involved rewriting and improving a score-keeping program using one kilobyte of RAM or less. Winger's entry is written for Extended BASIC and allows the entry of the names of up to nine players. Scores are updated instantly when posted. The leader after each round of play is also displayed without disrupting the scoring sequence.

Winger said he kept the number of rounds at 22 in order to conserve memory.

```
100 REM *SCORE KEEPER*
110 REM *MICROPENDIUM*
120 REM *KENT WINGER *
130 REM *4162 PORTER AVE*
140 REM *OGDEN, UT. 84403*
150 DIM SCORE(9,22)
160 FOR C=2 TO 14 :: CALL C
OLOR(C,16,2):: NEXT C :: CA
LL SCREEN(2):: CALL COLOR(0
,16,2)
170 CALL CLEAR :: DISPLAY A
T(14,7):"HOW MANY PLAYERS?"
:: DISPLAY AT(16,11):"(MAX.
9)"
180 ACCEPT AT(18,16)BEEP SI
ZE(1)VALIDATE(DIGIT):PL
190 FOR DELAY=1 TO 100 :: N
EXT DELAY :: CALL CLEAR
200 DISPLAY AT(1,3):"PLAYER
NAMING SECTION" :: LN=PL*2
210 FOR Y=2 TO LN STEP 2
220 DISPLAY AT(Y+2,4):"PLAY
ER #";Y/2 :: NEXT Y
230 FOR Y=2 TO LN STEP 2
240 Z=Y/2
250 ACCEPT AT(Y+2,17)BEEPVA
LIDATE(UALPHA):PLAYER$(Z)
260 NEXT Y :: FOR DELAY=1 T
O 100 :: NEXT DELAY
270 CALL CLEAR :: DISPLAY A
T(1,4):"SCORING SECTION & U
PDATE"
280 FOR Y=2 TO LN STEP 2
290 Z=Y/2
300 DISPLAY AT(Y+2,1):Z;"";
PLAYER$(Z):: DISPLAY AT(Y+2
,14):SCORET(Z):: NEXT Y : H
AND=HAND+1
310 FOR Y=2 TO LN STEP 2
320 Z=Y/2
330 ACCEPT AT(Y+2,22)BEEP:S
CORE(Z,HAND)
340 SCORET(Z)=SCORE(Z,HAND)
+SCORET(Z):: DISPLAY AT(Y+2
,14)SIZE(6):SCORET(Z)
350 NEXT Y :: FOR DELAY=1 T
O 100 :: NEXT DELAY
360 FOR CT=1 TO PL :: LE=MA
X(LE,SCORET(CT)):: NEXT CT
370 FOR CT=1 TO PL
380 IF LE=SCORET(CT)THEN 40
0
390 NEXT CT
400 CALL CLEAR :: DISPLAY A
T(12,1):"LEADER..";PLAYER$(
CT);" ....";SCORET(CT)
410 DISPLAY AT(24,1):"'ENTE
R'(SCORE) 'R'(HANDS)"
420 CALL KEY(0,K,S):: IF S=
0 THEN 420
430 IF K=82 THEN 450
440 GOTO 270
450 CALL CLEAR :: DISPLAY A
T(1,7):"INDIVIDUAL HANDS" :
: DISPLAY AT(2,1):"WHAT PLA
YER WOULD YOU LIKE?"
460 ACCEPT AT(3,15)BEEPVALI
DATE(DIGIT)SIZE(1):P
470 IF P>PL THEN 460
480 CALL CLEAR :: DISPLAY A
T(1,1):P;" ";PLAYER$(P);" H
ANDS SCORED"
490 FOR CT=1 TO HAND
500 DISPLAY AT(CT+1,1):"HAN
D #";CT;" ";SCORE(P,CT):: N
EXT CT
510 DISPLAY AT(24,1):"'ENTE
R'(SCORE) 'R'(HANDS)"
520 CALL KEY(0,K,S):: IF S=
0 THEN 520
530 IF K=82 THEN 450
540 GOTO 270
```

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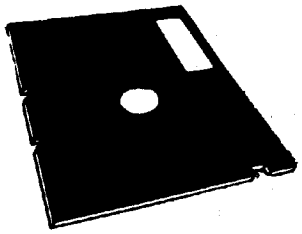

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Amerisoft introduces Compiler 99

Amerisoft International, P.O. Box 2168, Acworth, GA 30101, is launching an aggressive campaign to provide products for the TI home computer market.

According to company official Boyd Cone, "We're trying to satisfy the market that is there. We're producing all those things that TI should have done."

The company is releasing a number of new programs, incuding a BASIC compiler, a program called Master Painter that is supposed to greatly reduce the time it takes to incorporate graphics in BASIC and Extended BASIC programs; Speedgraph 99, a graphing package; and Emulator Express, a terminal emulator that operates at 300 or 1200 baud.

Compiler 99 converts BASIC programs into machine code, according to Amerisoft. A BASIC program is loaded into memory and the user simply enters the output device and filename and the compiler does the rest. Cone says the only restrictions the program has have to do with the use of DEF and SUB statements. He indicated that users can insert these statements into their programs after compiling. The program operates out of the Editor/Assembler cartridge. Suggested retail price is $99.95. The company is offering the compiler at $89.95 as an introdutory price.

3D World is a three-dimensional programming aid that provides users control over color, shapes and sizes of objects. Users may use the program to define objects, rotate the screen, move the screen forward for an expanded view, move it backwards for a reduced view, or sideways. A joystick is used in a mouse-like fashion to create pictures. With the use of an Epson formatted 8-bit printer, graphics may be printed in magnified form on paper.

The program requires Extended BASIC. The introductory price is $34.95. The regular price is $39.95.

Master Painter allows the user to create, edit, change colors and define objects. A joystick is used to operate the program out of Extended BASIC. Images may be save to a storage device or dumped to a printer. The program lets users save in DATA format, allowing the DATA statements to be read by BASIC programs. The introductory price is $34.95. The suggested retail price is $39.95.

Speedgraph 99 is a graphing package written in 9900 assembler that runs out of Extended BASIC or Editor/Assembler. The company says it will complete plots or graphs in seconds. The program does polar plots, linear plots, bar graphing, sinewave curves and other graphing tasks. The program includes a high-speed, assembler-based print utility to allow output to be dumped to a dot-addressable printer. Printing is done in double-wide, double-height format. The price is $24.95.

Emulator Express is completely compatible with Terminal Emulator II protocols, including speech. It permits automatic selection of baud rate (300 or 1200), allows for 32K of buffering, and has controlled screen scrolling. The price is $39.95.

All of the above programs require an expansion memory and disk drive.

The company is also expected to be marketing a disk controller card produced by Myarc Inc. The card is designed for use in the TI Peripheral Expansion Box and will control up to four floppy disk drives. The controller is capable of formatting double-density, double-sided diskettes.

According to Cone, some 2,000 bytes of memory in the controller has yet to be defined. The company is turning to TI owners to learn what functions they would like to see included as part of the firmware. A disk controller card marketed by CorComp Inc. offers a number of assembly language subprogram utilities that are accessible through BASIC or Extended BASIC programs.

Feedback

(Continued from Page 6)

page review, with its flickering lines and reformatting is very annoying at Extended BASIC rather than Assembly speed. It also has the annoying habit of freezing up after a lot of continuous text is received. I don't encounter this on The Source or CompuServe, but texts there don't generally fill 24 40-column lines. Locally, we have a teletext service which does send full pages. I've found that after about 20 lines, the cursor just stops until the rest of the message is sent, then catches up, although so quickly that the text can't be read "on the fly." I don't trust the file transfer option on the TE1200 either after several problems; and, if it's an important download, I always return to Terminal Emulator II. I have seen ads for at least two other 1200 baud emulators soon to be available; and look forward to (hopefully) improved performance.

Dwight Klettke
Editor (SLaVes)
Salt Lake and Valley 99er Users Group
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TI assessed $12 million

Texas Instruments Inc. agreed to pay $12 million to settle a class action suit which claimed that company officers misled investors by not disclosing unfavorable information that led to TI's forecast of a major loss in its home computer business last year. The agreement was reached in early October.

The suit, brought by the Council on Social Work Education Inc, named TI chairman Mark Sheppherd Jr., chief executive officer J. Fred Bucy, controller Marvin Lane and Jim Fischer, former executive vice president.

The suit alleged that the men knew but failed to tell potential investors that sales of the TI99/4A were flagging and that profit margins were cut because of price-cutting. TI announced June 10, 1983, that it would lose up to $100 million on its home computer business.

The settlement was filed in the U.S. District Court in the Northern District of Texas. Court approval is still required. A hearing is planned for Jan. 18, 1985.

A TI spokesman said the defendants denied the allegations in the complaint and that the settlement was reached to avoid the expense of litigation and "the diversion of management time."

Under the settlement, the $12 million will be distributed to an unknown number of investors in TI stock, put and call options between March 1 and June 10, 1983.

TI stock plummeted some $50 per share within two days of the company's announcement of its anticipated losses, from $157.75 per share to $107 per share.

How fast is Forth?

By HECTOR SANTOS

The two reasons most often given for using Forth are its speed of execution and the economy in its utilization of memory. We will examine its speed compared to console BASIC and Extended BASIC using a benchmark program suggested in the Wycove Forth manual. The program solves the following problem:

A board showing a four-digit house number falls and breaks in the middle, leaving two numbers of two digits each. Someone remarks that it must be a lucky number because if you add the two two-digit numbers together and square the result, you get the original four-digit house number. List all the lucky four-digit numbers.

BASIC Program

```
100 N=1000
110 FOR X=10 TO 99
120 FOR Y=0 TO 99
130 IF (X+Y)*(X+Y) <> N THEN 150
140 PRINT N;
150 N=N+1
160 NEXT Y
170 NEXT X
```

Forth Program

```
: HOUSE#1   1000
  100 10 DO
     100 0 DO
        J I + DUP * OVER = IF DUP . ENDIF
     1+ LOOP
  LOOP DROP ;
```

Console BASIC takes 209.4 seconds to run, Extended BASIC 219.6 seconds, TI Forth 7.2 seconds, and Wycove Forth 4.9 seconds. It is apparent that Extended BASIC is not always faster than console BASIC as most people believe. Both versions of Forth are fast!

One curious thing is that if you replace (X+Y)*(X+Y) by(X+Y)^2 in the BASIC program, the run times change. Console BASIC now takes 555.6 seconds (very slow!) and Extended BASIC 244.8 seconds. Extended BASIC runs faster than console BASIC now, although both run slower than the original program. Apparently, console BASIC has a very inefficient algorithm for exponential functions.

Why does Forth run so fast? A big factor is its use of integer, instead of floating-pointing arithmetic. Pascal takes advantage of the speed of integer arithmetic by letting you declare your variables as either integer or floating-point. Poor BASIC has to use floating-point in all its computations. Another product available for the TI99/4A that has integer arithmetic capability is the SST Expanded BASIC Compiler. It claims to run more than 45 times faster than regular BASIC.

A few days after I ran the benchmark tests, I picked up from the bookstore a copy of Home Computer Magazine (the old 99'er). In the Letters section, reader Woodrow Wilson presented a more efficient program to solve the house numbers program. It is a beautiful and elegant solution. I urge the mathematically-minded among you to follow its logic to fully appreciate its conciseness. The new solution takes only 68 loops compared to 9,000 for the original. BASIC Program

```
100 XHI=INT(SQR(9999))
110 XLO=INT(SQR(1000)))+1
120 FOR X=XLO TO XHI
130 Y=Y*X
140 Z=INT(Y/100)
150 IF (Y-Z*99) <> X then 170
160 PRINT Y;
170 NEXT X
```

The new solution takes only 4.8 seconds to run in console BASIC and 3.6 seconds in Extended BASIC. Does this mean that BASIC is faster than Forth? No, because the equivalent Forth program is:

```
: HOUSE#2   100 32 DO
               I DUP 100 */ 99 * I DUP * SWAP -
               I = IF I DUP * . ENDIF
            LOOP ;
```

The program executes in a split-second, 0.6 second in TI Forth and "too fast to measure" in Wycove Forth. This shows one thing about benchmark programs. When using them to compare anything, make sure they are equivalent and use the same logic. Otherwise, you could be comparing apples and oranges.

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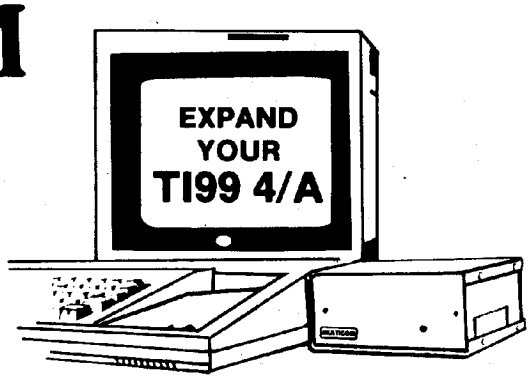

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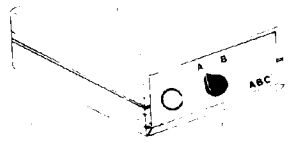

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Transtar 120S

A printer for your home

By JIM WRIGHT

A printer is high on almost every computer user's list of "have to have" items. Word processing—probably the number one "serious" computer activity—demands a printer, and hard copy is also useful if not necessary for such things as programming and debugging, data base and spreadsheet applications, and even some games.

Vivitar, a Japanese firm with a deserved reputation for quality camera lenses at attractive prices, has recognized this large market and joined the list of peripheral manufacturers. Their Transtar family of letter-quality printers is relatively new but worth considering.

Review

Report Card

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

Cost: $550 (sugg. retail)
Manufacturer: Transtar, 2100 116th Ave. NE, Box C-96975, Bellevue, WA 98009
Requirements: console, monitor or television, printer interface and cable

Performance: The Transtar 120S is an RS232 serial daisy wheel printer that Vivitar calls "portable." This is somewhat misleading. The 120 weighs 19 pounds and can be carried around if you choose to do so, but unless you also carry your computer, disk drive, and assorted cables and paraphernalia, there seems to be little point in the exercise. I prefer calling this machine a "home printer," a term that connotes some of the 120's characteristics: relatively quiet operation, trim size and attractive styling. The existence of an office-grade sibling, the 130S, makes the "home" designation even more appropriate.

The 120S ("S" is for serial; a Centronics (parallel) version, the 120P, is also available) is plug-compatible with the TI99/4A. A standard RS232 cable, such as Radio Shack's #26-1408 or equivalent, is all you need to get started.

Configuring your Transtar is no problem. The clear, readable manual explains the various DIP switch settings quite well. Actually, most of the factory (default) settings are appropriate for the 99/4A and TI-Writer, but you will want to set the parity to odd and word length to 7 bits. The only difficult setting—changing the handshaking protocol—requires no attention, since the default, DTR (data terminal ready), is correct.

The 120S can be set for baud rates of from 300 to 9600 and TI-Writer will cooperate, using the "RS232.BA=n" device name format for any setting other than 300 baud. I use 1200 baud, the factory setting, but this is fairly immaterial. This machine has a 1.79K buffer, and your console will be tied up during printing until the last batch of 1,790 characters is transferred, no matter how fast each bufferful is sent. Of course, if you have a spooling buffer, then the faster transfer rates may come in handy.

The Transtar prints 4 characters per second, putting it in the low speed range, even for letter-quality printers. However, this is still about twice as fast as even accomplished typists can work. Too, any letter-quality printer that operates significantly faster than the 120S will carry a pretty awesome price tag.

There are a number of software switch options available with the Transtar, most of which can be activated by standard TI-Writer Text Formatter commands. They are also available in programs you write, and the manual gives a good sample program in BASIC for using these switches. Some useful escape sequence commands that can be transliterated and inserted in your text with TI-Writer include one that activates bidirectional printing,

(Please turn to Page 30)

I haven't had my 120S long enough to judge its durability, but Vivitar claims a mean time between failures (MTBF) of twenty million actions. That's a lot of printing, and their six month parts and labor warranty on the 120S shows a certain amount of faith in the machine's reliability.

9900 Disk Controller Card

A card for all reasons

The TI99/4A has come a long way over the past several years. Among the major landmarks of its development one must count the introduction of the Peripheral Expansion Box in the spring of 1982 and now the introduction of a disk controller card for the PEB that is capable of formatting double-density, double-sided diskettes.

CorComp Inc. first announced its intention to produce a disk controller card for the TI last winter. In January a company spokesman was very confident that the card and other devices would be ready for the market by mid-spring. However, in late February, the company underwent a change of management and the predicted release of the card and other peripherals was delayed. The card wasn't ready for the marketplace by spring, though prototypes were being tested.

By late spring the company said the card was finally ready and that all that needed to be completed was the printing of the manual. The next word was that it would be ready for distribution by late June. Then, finally, by late July, the company was ready to ship the cards to dealers. And, for the first time, PEB owners had access to the first third-party disk controller card for the TI.

(Please turn to Page 26)

Review

Report Card

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

Cost: $169.95 (PEB card)
Manufacturer: CorComp Inc., 1255 N. Tustin Ave., Anaheim, CA 92807
Requirements: console, monitor or television, TI Peripheral Expansion Box, disk drive, cable, memory expansion, printer optional

CARTRIDGES WORK PERFECTLY—

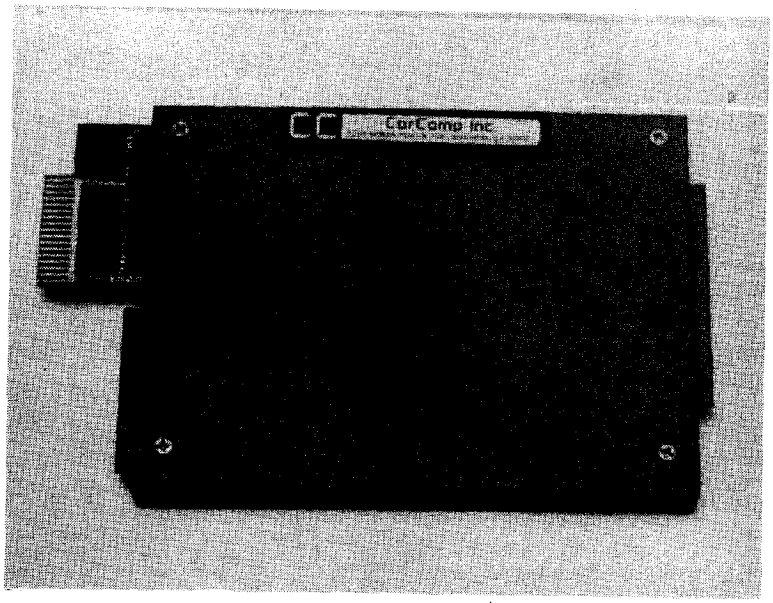
(Continued from Page 25)

(Myarc Inc. has been marketing an expansion box that includes a double-density disk controller, 32K of expansion memory and RS232 interface since last spring, and CorComp expects to have a similar combination of features available in its own small expansion system before the end of the year.)

However, it seems safe to say that the majority of TI owners with disk drives also own the TI Peripheral Expansion Box. And for them the new disk controller card provides an exciting option that includes the only disk-based disk management system available for the TI. Those with an expansion memory may use CorComp's own disk manager disk. Those without expansion memory may still take advantage of the CorComp card by using TI's Disk Manager II cartridge. The CorComp card allows DMII to initialize double-density diskettes. DMII may also be used with memory expansions, though the CorComp disk manager program is faster and in many ways more efficient than DMII.

Performance: The CorComp 9900 Disk Controller Card looks much like TI's peripheral expansion cards. However, it is considerably lighter (12.5 ounces) and the enclosure is not nearly as sturdy as the one used on TI cards. As a result, a bit more care is necessary when inserting the CorComp disk controller into the PEB than when inserting a TI-manufactured card.

It must be noted at this point that CorComp has produced two disk controller cards, one that worked and one that didn't. The original version, many copies of which were still being shipped by vendors in September, was fraught with problems, ranging from inadequate initialization to read-write errors. The company subsequently corrected the problems inherent in the first card and is now distributing



what is called Version 2.2. This is the version this review is based on. For the record, CorComp sent three of the original disk controller cards to MICROpendium, none of which worked properly. Only one of the Version 2.2 cards was sent, and it has performed flawlessly.

Additionally, I used a single and dual-drive systems in reviewing the disk controller and disk manager. Both drives are designed for double-sided, double-density diskettes. The TI single-sided disk drive is not capable of double-density formatting. The drives used for this review were manufactured by Control Data Corp. and by Tandon Magnetics.

The CorComp card is an improvement over the TI card in several ways. The obvious improvement is in its double-density formatting capability. This essentially doubles the storage space available on what heretofore were single-density diskettes. Most single- and double-sided diskettes one finds in computer stores are capable of double-density formatting. The CorComp card is able to control up to four disk drives, compared to three by the TI disk controller.

With the card in place, the first thing the user notices is the new title screen. Replacing the familiar TI title screen is a menu that has the CorComp disk manager program as the first selection, followed by BASIC. Then, if there is a cartridge loaded into the computer, the third selection will be the name of the cartridge program. There is also a prompt which allows you to access the cartridge indirectly by pressing the space bar. This second manner of accessing cartridges was provided for use with Terminal Emulator II and other cartridges that contain their own powerup routines. I didn't find this necessary with any of the cartridges or programs I used.

I tried out a number of cartridges with the CorComp card and all worked perfectly. In fact, I found none, including non-TI cartridges such as Disk Fixer by Navarone Industries and game cartridges from Atarisoft and other sources, that did not work properly with the card. Although there may be more programs that won't load properly with the CorComp card, I ran into only one, Floppy-Copy by The Softspot. However, this program has

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CORCOMP FILE UTILITIES PREFERABLE—

(Continued from Page 26)

since been modified to operate with both the CorComp and TI disk controller cards. I also could not get the original disk controller card to operate with Foundation Computing's 128K memory card. However, there seems to be no such problem with Version 2.2. Ironically, according to CorComp, the CorComp disk controller is not completely compatible with early versions of the company's RS232 card. I found no compatability problems using TI's RS232 card nor TI's 32K memory card.

The CorComp disk manager, which requires a memory expansion to operate, is a very interesting piece of software. It can be loaded into expansion memory without the use of a TI cartridge. It loads very quickly for a 98-sector program. It offers a main menu that includes four options:

1. File Utilities
2. Disk Utilities
3. Disk Tests
4. Manager Configuration.

The first thing you will want to do after loading the manager (and reading the manual, of course) is to select option 4. This brings you to a very busy screen that allows you to configure default values for up to four disk drives, determine printer output settings and set the screen and background colors. For each drive, the user determines the following characteristics: the number of tracks per side (1-40), the number of read/write sides (1 or 2) and the recording density (single or double). You may also set the from-to default settings for copy functions and background and foreground colors. You may then go to a second screen to set the single-density and double-density interlace. Also, you may choose to enable or disable the "turbo" function. This function allows the controller to speed up copying procedures by turning off the verify after write command. These configurations may be saved to a disk, along with the manager program, for future use.

One of the problems with the original card was the fact that copies of the disk manager program could not be loaded successfully. The manager is meant to be copied, to any disk. However, this problem has also been rectified with Version 2.2.

Even so, I continued to have problems initializing disks using the CorComp disk manager. Following initialization, the disk manager indicated that hundreds of sectors had been used, which was clearly erroneous. This happened to at least 50 percent of the diskettes I initialized. Finally, I reinitialized the disks using DMII, and in some cases found that the readouts on DMII also gave erroneous figures on disk space used. I ran the disks through the destructive disk test sequence and managed to clear the disk. Then I initialized the disks again using DMII and everything worked out properly. (I also tried the initialization routine from Floppy-Copy and it seemed to correct the problems associated with disks initialized using the CorComp disk manager but in much less time than it took using DMII.) I do not know why this problem exists. As best as I could tell, the program failed to verify all sectors and those not verified were recorded as having been used.

The manager configuration allows the user to set default settings for disk and file utility operations. The user may override these defaults prior to executing any operation.

After configuring the manager, you have much the same menu choices as offered by Disk Manager II. The File Utilities segment lets you copy, rename, delete or move a file from one disk to another or change the protection characteristics of a file. Also offered as a file utility is the option of loading and running Assembly files.

I much prefer using the CorComp File Utilities to those available on DMII. CorComp did a fine job in designing a program that is not only easy to use but far more convenient for the user. Having selected the file utility, you identify the drive number and the program loads the disk catalog onto the screen.

This catalog differs from the DMII catalog in several ways. For one thing, it does not scroll. It displays

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Changing head-step time boosts manager performance

Elsewhere in this review, you'll find reference to a problem encountered when initializing diskettes using the CorComp disk manager program. The problem has to do with inaccurate sector counts when formatting double-density diskettes. Essentially, the program seems to skip over several hundred sectors during the process.

This problem can be corrected, permanently, by modifying the head-step time settings.

Although the card is set for a head-step time of 10 milliseconds at the factory, users may modify the step time for any drive by adjusting eight DIP switches located inside the card's enclosure. The manual describes how to open the enclosure. Setting all switches in the "off" position results in a head-step time of 15 milliseconds for all four drives. The result of this is that the initializing problem is corrected.

MICROpendium just learned of this at presstime and was unable to change the information in the review.

CATALOG DISPLAYS 18 FILES—

(Continued from Page 27)

up to 18 files at a time in a page format. In addition to showing the file name, size, type of file and protection status, it also has a command field at the far left. It is here that you determine the type of activity to perform on any file.

For example, if you want to copy a file you simply type in the letter "C" in the command field of each file that you want copied. Or, suppose you want to copy some of the files and delete others. You enter a "C" for those you want to copy and a "D" for those you want to delete. (Because the disk manager program takes up virtually all of expansion memory, the file copying utility is able to copy only about 34 sectors per pass.)

Suppose, too, you want to rename a file at the same time. Simply move the cursor to the file name and change it. Suppose you want to temporarily change the protection status as well. Simply move the cursor to the protection line and type in a "U" for unprotect, "P" for protect or "T" for temporary. "T" allows you to temporarily unprotect a protected file in order to rename it. After the renaming command has been executed, the "T" becomes a "P."

Okay, having decided the number of things you want to do, you can page over to the next catalog screen, if there are more than 18 files on the disk. Having come to the end, you are prompted to execute the commands. Entering a "Y" will start the file utility operations that you've selected. You are returned to the first file utility screen and may watch the names of the files appear at the top of the screen as the operations are executed. Also reported are the number of sectors in the files. When the last operation has been completed, you may return to the main menu by pressing Function 5 . Pressing Function 4 (CLEAR) returns you to the select option field. You may also use Function 9 (BACK) in the same way as Function 4. Function 6 (PROC'D) is used to execute commands. This is familiar stuff to DMII users.

```
                    Configure Manager

Drive Configuration

Drive 1                 Drive 2
Tracks/Side : 40        Tracks/Side : 40
No. Sides   : 2         No. Sides   : 2
Density S/D : D         Density S/D : D

Drive 3                 Drive 4
Tracks/Side : 40        Tracks/Side : 40
No. Sides   : 2         No. Sides   : 2
Density S/D : D         Density S/D : D

  From                    To
  Drive No. : 1           Drive No. : 2

Output Configuration
PIO_____________________________________
_____________________________________

Screen Color: 5     Text Color  : 16

PRESS CTRL X FOR NEXT PAGE
```

The File Utilities menu also offers the user the option of loading and running Assembly language display/variable files without the use of the TI Editor/Assembler cartridge.

The Disk Utilities menu offers the user the following four options:

1. Catalog
2. Copy Disk
3. Rename
4. Initialize.

The Catalog option displays diskette files alphabetically, with room for 18 per screen. The user may page forward and backward through the catalog, just as he may do with the File Utilities catalog.

The major difference between the Disk Utilities catalog and the File Utilities catalog is the absence of the command line the Disk Utilities catalog. The catalog includes file names, file size and the protection status. Also displayed are the disk name, the number of files on the disk, the number of sectors that have been used and the number of sectors remaining free, the current catalog page number and the total number of pages in the catalog. All of this is included on the File Utilities catalog as well.

Copying disks is simply a matter of identifying the source drive and inputting the number of read/write sides and density (if different from the defaults) and the destination drive and its defaults. Unlike DMII, the CorComp disk manager does a sector by sector copy of a disk, thereby overwriting the destination disk. As long as the turbo function is not switched on, all sectors are verified.

Diskettes are renamed in much the same way as files are renamed via the File Utilities menu.

When it works properly, the CorComp disk manager program initializes diskettes in much the same way as DMII. The user is prompted for the drive number, the number of tracks, the density and

(Please turn to Page 29)

DISK MANAGER EASY TO USE—

(Continued from Page 28)

the number of sides. The user is also prompted as to whether to copy the disk manager program to the diskette. Prior to actually starting the formatting procedure, the program prompts the user as to whether to continue with the process. If the response is in the affirmative, the program begins the process. Sector numbers appear on the screen as the program initializes the disk, in much the same way as they appear on the DMII initializing screen.

The Disk Tests option on the main menu provides the user with much the same procedures as the DMII diskette test options. One has the choice of non-destructive (read only) or destructive (write and read) testing, whether to log results, etc.

The manager offers easy access to a printer via a screen dump that may be used at virtually any time. Screens can be sent to a printer simply by pressing Function O.

The disk manager diskette also includes a number of subprogram utilities that can be called from BASIC and Extended BASIC programs. Among them are:

MPEEK—for reading values and characters from CPU memory.

MPOKE—for writing values and characters to CPU memory.

VPEEK—for reading values and characters from VDP memory.

VPOKE—for writing values and characters to VDP memory.

WRTRG—for writing vaues to the video registers.

MOVEM—for moving blocks of memory around.

EXEC—for executing Assembly language programs by address.

MGR—for loading and running the CC 9900 Disk Manager program.

DELETE "LD-CMDS"—for loading the new commands to link names into low memory expansion using Extended BASIC.

```
DSK1.MGR:VER2.2     Page 1 of 2
 21 Files    Free 1253  Used 187

CMD Filename    Size    Type        P
--- ---------- ---- -----------    -
 N  B/EXEC         2 Program        P
 N  B/MOVEM        2 Program        P
 N  B/MPEEK        2 Program        P
 N  B/MPOKE        2 Program        P
 N  B/VPEEK        2 Program        P
 N  B/VPOKE        2 Program        P
 N  B/VPOKE2       2 Program        P
 N  B/WRTRG        2 Program        P
 N  BASICDEMO      5 Program        P
 N  FORTH          6 Dis/Fix   80   P
 N  FORTHSAVE     39 Program        P
 N  MANAGER       98 Program        P
 N  XB/EXEC        2 Program        P
 N  XB/LOAD        5 Program        P
 N  XB/MOVEM       2 Program        P
 N  XB/MPEEK       2 Program        P
 N  XB/MPOKE       2 Program        P
 N  XB/VPEEK       2 Program        P
 Turn Page with CTRL E - CTRL X
```

Actual use of these subprograms is well-documented in the manual that comes with the disk controller.

Also included are files called FORTH and SAVEFORTH that can be copied to the TI Forth disk. This file allows users to load and run TI Forth from the CorComp disk manager without using the Editor/Assembler cartridge.

Ease of Use: Since the CorComp 9900 disk controller card is fully compatible with DMII, users needn't even use the CorComp disk manager diskette if they choose not to. However, I suspect that anyone who purchases the disk controller will find the CorComp disk manager program an improvement over DMII in all but one area (initialization) and will take the time to learn how it works. Essentially, this means you'll have to read the 26 pages devoted to the disk manager in the manual, and experiment. The CorComp disk manager is so similar in operation to the TI disk manager that anyone accustomed to the one will find no trouble in adjusting to the other.

Corcomp designed its card so that users could match its operation to the characteristics of their disk drives. One does this by adjusting head step times. This is easy to do with the CorComp card. The user simply removes the four screws that hold the card enclosure together and pulls the two sides apart. A box containing eight DIP switches is located on the card itself. By following instructions provided in the manual, the user may reset the switch settings for each drive from 3 milliseconds to 15 milleseconds. The switches are set at 10 milleseconds at the factory. I used the factory settings in reviewing the card as adjustments did not seem to be necessary.

Documentation: The disk controller comes with a 90-page manual printed on 8 ½ X -11-inch paper.

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DISK MANAGER A BONUS—

(Continued from Page 29)

Though unbound, it is designed for placement in a three-ring binder. The manual includes much of the information that comes with the TI disk controller manual, including how to use OPEN, CLOSE, INPUT, PRINT and other statements. The section which describes the use of the disk manager program is quite detailed and easy to follow. The section about the "Tool Shed Utilities" that come with the program provides a programming example for each utility. Appendixes include the definitions of error codes, system map, VDP memory map and VDP registers.

Value: Version 2.2 is, as far as I could tell, well worth the price. The disk manager software, for those with memory expansions, is very handy for all but one purpose.

In packaging the card, CorComp has made the decision that anyone who buys it already has a TI disk controller and TI disk manager software. I draw this conclusion because the CorComp card does not come with either the TI disk manager or a cable to connect the card to an internal disk drive. This seems logical in so far as there seems no reason for anyone to have purchased the TI PEB without also having purchased a disk drive and disk controller card.

There were a number of objections I held against the first CorComp disk controller. In addition to those already indicated, there is the fact that the edge connector for external drives was no compatible with the TI external drive cable. This, as well as all other objections I had, was corrected with the release of Version 2.2.

Even so, I feel it is necessary to point out that this review ought to be considered to be about two subjects: the Corcomp card and the CorComp disk manager software. I have no reservations about the card itself and view the disk manager with its "Tool Shed Utilities," Forth loader and disk and file management utilities to be a very nice bonus to users. It is something one doesn't need, but it is very nice to have.

How much confidence do I have in this card? Having reviewed it, I bought one for myself. At this point I'm getting ready to transfer most of MICROpendium's data files to double-density diskettes, including our circulation lists. If something goes wrong with our mailing list it would take months to get it all corrected. But I'm not worried.

—JK

TRANSTAR 120S

(Continued from Page 24)

which should have been a hardware switch option; two that give half-line feeds up or down for subscripts and superscripts; and commands to select line feed pitch in increments of 1/8 inch.

The control panel on the 120S contains four push-button switches and three indicator lights. The Autoload switch causes the machine to load single sheets or fanfold paper to one of four DIP switch-selected positions: first printable line or 1, 1 ½ or 2 inches down. Eject does just that with single sheets, or it serves as a form feed with continuous paper. There is also a Line Feed button; held down for two seconds, it becomes a continuous feed control. The Pause/Continue control allows you to stop printing for whatever reason and later resume where you left off.

The indicator lights are Power On, Alert and Print On. The Print On lamp reflects the status of the Pause/Continue button. The Alert light responds to any one of three sensors in the 120S: ribbon jam, cover open or ribbon cartridge empty. Any of these conditions stops the printer and lights up Alert. Incidentally, if you raise the cover, the printhead moves over to the center of the platen for easy access to the print wheel and ribbon cartridge. Closing the cover and pressing the Continue button restarts your printing job where it was interrupted.

I haven't had my 120S long enough to judge its durability, but Vivitar claims a mean time between failures (MTBF) of 20 million actions. That's a lot of printing, and their six-month parts and labor warranty on the 120S shows a certain amount of faith in the machine's reliability.

The Transtar comes standard with a Courier 10 print wheel and an 80,000-character mylar, single-strike ribbon. Transtar has an assortment of other type styles and pitches available, including script, or you can use any Silver-Reed EX-55 typewriter wheel. Likewise, Vivitar can supply a 600,000-character cloth ribbon for draft printing, or you can use Silver-Reed EX-55 cartridges. Also, Olivetti ET series ribbons fit the 120S, so resupplying it should be no problem.

This printer is friction-fed, but a bidirectional tractor attachment is available. Expect to pay about $150 for it.

Overall, the Transtar 120S has proven to be an excellent buy. Suggeted retail is $550, but it runs around $325 at discount. That's pretty close to last year's dot matrix prices and certainly in the low end of the letter-quality spectrum. I would have preferred a faster machine with hardware switchable bidirectional printing but, at the price, I wouldn't expect to do any better anywhere.

Super Bugger

Gift horse evaluated

By HOWARD H. ARNOLD

Super Bugger is an improved version of TI Debugger. It was developed by Navarone Industries, apparently with the intention of a commercial release, either independently or through Texas Instruments. The free release of the program through TI user groups is indeed a bonanza for anyone doing serious Assembly language programming.

Though we've been warned time and again not to look gift horses in the mouth, we'll nonetheless do just that. In the process of that critical look, we've discovered a few tips that may make the product more useful, and help to extend its application.

Performance: The program comes on a single disk, occupying 201 sectors; 99 of these sectors are used for a "help" file, the only documentation provided (at least to our users' group). This help file can be printed with TI-Writer, and occupies seven pages. The program itself is provided in two forms: one suitable for loading with BASIC or Extended BASIC; the other loadable only from Editor/Assembler (or, as I discovered, from Mini-Memory).

The BASIC version of the program, identified on the disk as "SBUG," occupies 97 sectors of the disk. The Editor/Assembler version, in condensed format, is identified as "SBUGC" and occupies only 45 sectors. As you would expect, the condensed version loads in less than half the time that the SBUG version does. It also contains a number of desirable features not available from BASIC.

The performance of Super Bugger is everything one could expect from a sophisticated debugging program. The improvements over the TI Debugger include an excellent disassembler, which generates Assembly language code from any machine language program coresident in memory. The only feature I might wish for in this utility is an ASCII interpretation of code, to make the location and identification of text and message blocks a bit easier. The presence of unaccountable assembler code or directives is thus the only clue to these areas. Small matter—the provision of disassembled code is a GREAT help, not only in examining your own programs but in looking at other's code, and even at programs in ROM.

Another improvement over TI Debugger is the ability to single-step through a program. After any step it is easy to examine all registers with the single command ⟨W⟩. The program instruction executed at each step is displayed on the screen, next to the memory address. In addition, the effective jump address is shown for each jump instruction (even conditional jumps, whether or not executed).

A memory dump to a hard copy device is also provided. It is also possible to toggle the hard copy device on or off with the single letter command ⟨L⟩, with the screen being the default listing device when the hard copy device is toggled off.

As stated earlier, although the instructions did not make it clear, it is possible to load the condensed version of the program using either Mini-Memory or Editor/Assembler. It is desirable to use this version when possible, since it not only loads more quickly but also provides some features not available in the BASIC version. For example, a bit-mapped screen option is provided in the SBUGC version.

Ease of Use: The documentation provided in the help file suggests that the user become familiar with TI Debugger and its documentation prior to using Super Bugger. This is a very fine suggestion! In fact, you'll be in quite a bit of trouble if you don't. Even loading the program initially will be quite a challenge. Although both sets of documentation imply that the programs can be loaded from console BASIC, this is true only if a command module containing the LOAD and LINK subprograms is present. Mini-Memory has these programs, as does Extended BASIC.

After you load the program with the CALL LOAD command from either BASIC, your screen will be blank. The documentation suggests that you enter ⟨U⟩ immediately in order to begin using the program. Wrong! Instead, use ⟨N⟩, which gets you a prompt for selecting your hard-copy device. From here on, everything seems to work.

It's not all that clear how to set up the program counter and work space registers before beginning single-step operation, however, or exactly how to go about identifying the program area to be disassembled. A little experimentation will no doubt get you there.

Documentation: Here's where the gift-horse has the gravest defect. TI's own Debugger documentation

(Please turn to Page 32)

Review

Report Card

Performance:	**A**
Ease of Use:	**B—**
Documentation:	**C—**
Value:	**A+**
Final Grade:	**A—**

Cost: Free through TI Users Group
Manufacturer: Navarone Industries
Requirements: Console, monitor, disk, memory expansion, Editor/Assembler, Mini-Memory or Extended BASIC

SUPER BUGGER—

(Continued from Page 31)

isn't the greatest, and the seven-page help file on this disk adds very little. My long-standing need was for aid in debugging, disassembling and documenting Mini-Memory programs. SBUG does it well, but there's no clue in the documents. Here's how:

—Load SBUGC from the Load and Run option on the Mini-Memory screen (DSK1.SBUGC).

—Go to the Easy-Bug screen of Mini-Memory and ‹ L› oad the program to be debugged from tape.

—Without leavng Easy-Bug, ‹E› xecute the SBUGC program, which is loaded at memory location A000 (Command ‹E› A000).

This takes you to the starting screen of Super Bugger. Now you can proceed to dump, disassemble or single-step to your heart's content. By the way, to single-step, you'll need to set the Workspace Pointer, using option ‹R› to W=70B8. The program counter also must be set, again using ‹R› to P=7D00 (or whatever entry point you may have used in Mini-Memory.

Value: How can you beat free? Seriously, I'd gladly buy the program at a typical $50 utility program price, especially if it had a well-written manual with a full explanation of loading procedures, an index and some example sessions. As it is, I highly recommend the program to anyone who has an occasion to debug even the most rudimentary Assembly language programs. It's worth the learning pains just to make it possible to quickly document a line-by-line assembled Mini-Memory program.

A quick fix for S-Bug bug

By TOM KNIGHT

When TI finally released Super Bugger it had a "bug" in that it is supposed to be able to disassemble or dump memory to a disk and will not properly do this. (In my opinion, this was a TI-induced bug.)

I have been working on this problem and have found a solution that, so far, seems to work fine.

With no other program in memory, "S-Bug" loads from › A000 to › B96A and I will be referencing memory with this assumption.

Memory Location	Contains	Change To
A15A	3F20	101F
B2DE	7F00	0FFF
B2F2	3F09	1009
B32A	7F20	101F
B342	7F05	1005
B356	7F00	0FFF
B366	3F09	1009
B37A	7F00	0FFF
B382	3F09	1009

These locations are all references to either the PAB or the data buffer which is used by DSRLNK which, by the way, is included in Super Bugger as are the other utilities used by the program. It is completely stand-alone. All of the utilities are very similar to the ones that come with the Editor/Assembler cartridge.

There are three ways to make these changes:

1. Each time you load the program you can make the changes while the program is running.

2. The regular version (uncompressed) can be changed using the "Editor" or with TI-Writer. Be sure that on each line that you change you also change the "checksum" flag to an 8 (it is normally a 7).

3. To change the compressed version you need Disk Fixer or something similar. You actually change the disk information. If you are familiar with the use of Disk Fixer you should have no problem, otherwise it could get very hairy.

These is one other way to have these changes incorporated and that is too send me your disk with Super Bugger on it. Include a mailer to send it back in, enough postage and $2. I will then copy both updated versions of the program on the disk and the help file and return the disk. If you do not have Super Bugger but would like to have it, send a blank disk, a return mailer and postage and $5 and I will do the same thing.

Ed: Knight can be reached at 7266 Bunion Dr., Jacksonville, FL 32222.

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

Floppy-Copy

You'll flip over this

Floppy-Copy is a disk copying utility and more. It allows the user not only to copy disks, but to initialize disks as well. As an added bonus, the program includes a very fast disk catalog program.

Floppy-Copy is the first multi-function disk copying utility I am aware of. It is written entirely in Assembly language.

Performance: Floppy-Copy provides the user with three important functions found on the TI Disk Manager II cartridge. It allows the user to initialize diskettes, ranging from single- to double-density and from single- to double-sided; allows the user to copy the same variety of disks; and provides the user with a very fast disk catalog utility that is very useful in making sure what is on a disk before as well as after copying.

All three of these capabilities are loaded into the computer memory simultaneously. All instructions for use of Floppy-Copy are included on the disk. The instructions consist of four segments that are accessible prior to entering the menu for the three utility programs. Each segment is loaded individually. Although the instructions are quite complete, and there is some advantage to having them on disk, I found that while using the utilities I wanted to refer to the instructions but was unable to do so. The instructions cannot be accessed after entering the utility menu except by reloading the program.

The initialization utility operates much faster than the Disk Manager II initialization utility. It creates a header that is compatible with Disk Manager II. Unlike the initialization of DMII, however, the initialization feature of Floppy-Copy does not verify sectors for errors. Initializing a double-sided, double-density diskette with Floppy-Copy took about 35 seconds.

The catalog feature will show the disk catalog for any drive selected.

Review

Report Card

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

Cost: $25 (diskette) plus $2.50 shipping and handling
Manufacturer: The Softspot, P.O. Box 8786, Silver Spring, MD 20907
Requirements: console, monitor or television, disk drive and controller, expansion memory, Editor/Assembler, Extended BASIC or Mini-Memory cartridge

It scrolls onto the screen much faster than any other disk catalog utility I have seen. It is several times faster than the DMII catalog utility.

The catalog can be stopped at any point simply by pressing any key. It can be restarted by pressing any key, also. Once started, the catalog must run to its conclusion, though it takes little time regardless of the number of filles on the diskette.

Of the three functions available on Floppy-Copy, the disk copying utility is the most useful, followed by the cataloging feature. I find it convenient to review a disk catalog before making copies just to make sure that I am not overwriting files I want to keep.

The disk-copying utility copies up to 138 sectors per pass. It offers the user the choice of proportional or non-proportional copying. Proportional copying copies only sectors that are used. Non-proportional copying copies all sectors, whether used or not. Copying a double-sided disk that has about 350 sectors of programs on it is considerably faster in the proportional mode than the non-proportional mode. Like similar disk utilities, Floppy-Copy completely overwrites any files that

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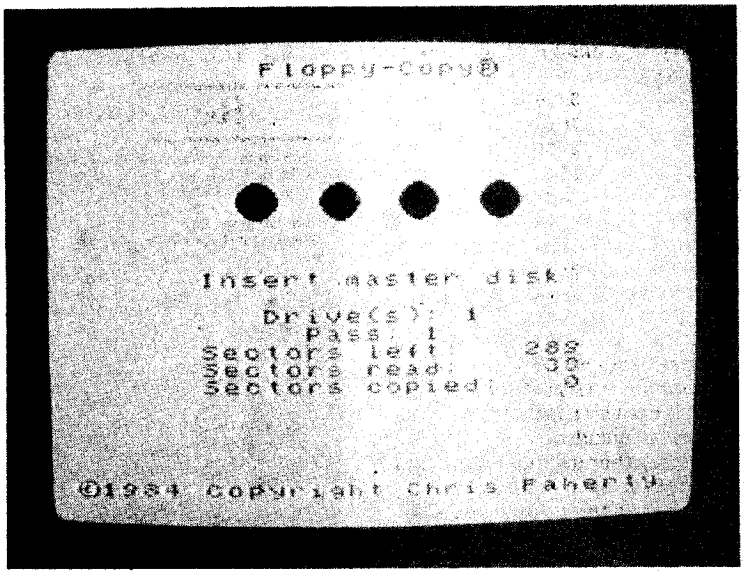


Data Base-X

Keeping track of things

Data Base-X provides users with an easy to use list-making and data organizing tool that can also print mailing labels in alphabetical or ZIP code order.

The program incudes many of the features found in TI's Personal Record Keeping cartridge, such as statistical analysis, but without its memory limitations.

Performance: Data Base-X allows the user to create up to five files per diskette consisting of up to 10 categories each. Each category may consist of up to 28 characters each. The program may be used with two disk drives. The program will sort up to 100 records or perform statistical calculations on 200 samples without an expansion memory. With an expansion memory the program can sort up to 1,200 records and perform statistical calculations on up to 1,000 samples. Memory expansions are not utilized in any other way, however. Since the program uses relative files, file sizes depend on the storage capacity of the diskette.

Unlike the PRK cartridge, Data Base-X does not perform any arithmetic on data between different categories.

The program includes a number of sections, each of which is loaded when a particular function is desired. Those with a single disk drive will find themselves switching disks quite often, since files cannot be written to the program disk. In dual disk operation the program disk is kept in one drive and the file disk remains in the second drive.

Program segments include:

—Library: used to initialize file diskettes. This portion of the program also calculates the percentage of disk space used. Printer protocols are also entered here.

—File routines: used to create and delete files and to list files.

—Sort and display: used to select records based on up to three category values or by a range of numeric values within one category and displays same to screen.

—Sort and print: same as above except that records are outputted to a printer.

—Print labels: used to sort names based on range, category match (up to 3), numeric sort or alphabetical sort, and to print labels.

—Statistics: calculates mean, median, range and standard deviation of selected numeric samples from data file or manual input.

—Update records: used to change or inspect selected records.

—Delete records: used to delete selected records.

In many ways, the operation of this program is most similar to Database 500 by the International 99/4 Users Group. The biggest advantage of Data Base-X over DB 500 is that data input is much faster. Also, the IUG will sell its programs to members only, while Data Base-X is readily available to anyone.

In addition to allowing faster input of data than Database 500, Data Base-X also displays user-defined prompts for each category during input so that the user doesn't have to remember what data goes where.

However, I regard Database 500 to be a more sophisticated file management program, particularly in terms of its printing routines. With Data Base-X the user has no format-

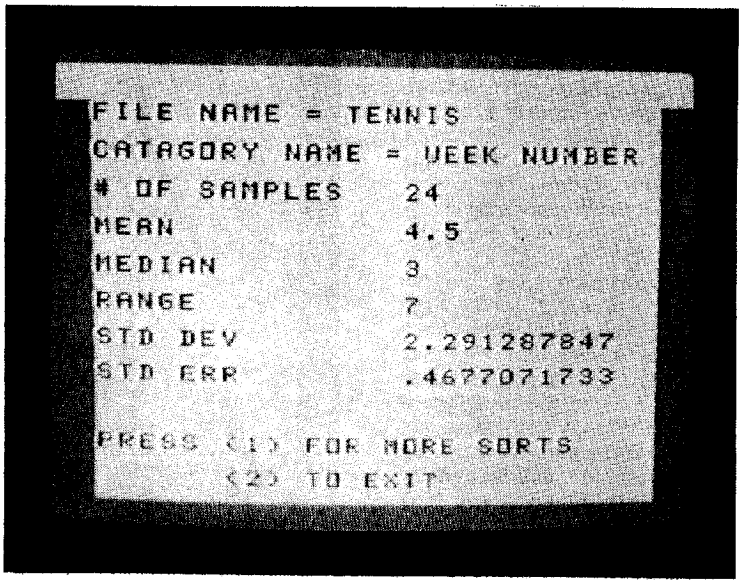
(Please turn to Page 35)

Review

Report Card

Performance:	**A**
Ease of Use:	**A**
Documentation:	**B+**
Value:	**B**
Final Grade:	**A—**

Cost: $29.95 (diskette)
Manufacturer: Western-Ware Inc., P.O. Box 53043, Lubbock, TX 79453, (806)745-6127
Requirements: console, monitor or television, Extended BASIC cartridge, disk drive and controller, expansion memory and printer optional



DATA BASE-X—

(Continued from Page 34)

ting options except for the printing of mailing labels. The label printing program lets the user select tab setings for single-wide labels. Of course, Database 500 requires a memory expansion.

Data Base-X offers the use the option of scanning a group of records to locate a particular entry in the Record Update mode. This is done by entering a specific value for the first category of any record. In other words, if the first category is for the first name of a person, say, Don, the user enters the name Don and the program responds by displaying Don's record. All entries with the first name of Don would be accessible simply by pressing one key to continue the search. Each entry will appear, one screen at a time. Once the correct record is located, the user may then change the data in any category or make no changes, as he sees fit.

Records may also be scanned through the Sort and Display mode. The user may input a numeric range of values or specific values for up to three categories. As with the Record Update mode, the user may page through the records that match the sort values. The sort routine used by this program does not create permanent subfiles that must be resorted every time new data is added.

Ease of Use: Data Base-X is a very easy to learn file manager. All screens are fully prompted.. Intermediary screens are used to remind those using single disk drive systems which disk to place in the drive. (These screens are dropped when using two drives.) Most of the command input is based on CALL KEY routines so that it is not necessary to hit the enter key to execute commands. The program also uses tones to signal certain program operations. Screen color is also used as a visual cue.

Documentation: The program, which comes on one disk, includes a 17-page manual. It takes the use through the program on a step-by-step basis. It is a convenient size and bound.

Value: The simplicity of this program recommends it to users who have specific file management needs. Its weakness is in its lack of formatting capabilities for printouts. I would say that the program is ideally suited for those who would like to maintain a mailing list.

—JK

FLOPPY-COPY—

(Continued from Page 33)

may reside on the destination disk.

All functions are fully prompted in Floppy-Copy, with defaults that match the DMII defaults in most cases.

Floppy-Copy verifies data on write.

The disk copying utility of Floppy-Copy provides the user with a progress report of sorts when it is operating. The screen includes four ball-shaped objects which expand and contract while the copying is being done. There are also readouts that report the number of the current pass, the number of the drive being written to, the number of sectors remaining to be copied, the number of sectors read and the number of sectors copied.

Whenever a disk is copied, the destination disk takes on all of the characteristics of the master disk, regardless of how it was initialized. In other words, if the destination disk was initialized as a single-sided disk and the source disk is double-density, the destination disk will become double-sided. Also, the destination diskk will take on the name of the source disk.

As a benchmark, Floppy-Copy copied a double-sided, single-density diskette consisting of 641 used sectors in five passes. It took about four minutes, 20 seconds.

Ease of Use: Floppy-Copy is easy to use. I like the fact that it is fully-prompted and that for each prompt there is a default. Also, whatever responses the user makes to the prompts will remain in effect until they are changed or you exit the program. Thus, if you are copying a number of disks from disk drive one to disk drive two the responses you entered initially become defaults for subsequent operations. Of course, these defaults may be changed at will. Those with multiple drives will appreciate the fact that a disk can be copied to more than one drive at the same time.

Documentation: I like the fact that the documentation is included on the program disk. One doesn't have to worry about losing the manual that way. However, not being able to refer to the instructions after entering the program menu is frustrating. The only way to get back to the documentation is to QUIT and reload Floppy-Copy, which becomes tiresome very quickly, particularly to the first-time user. I would like to have seen some way of dumping the instructions to a printer, or, just as well, to have had a printed copy of the instructions included with the program disk. Many software developers claim that hard-copy documentation raises the price of software, but I feel that at the least, dot-matrix printouts should be available. These are not very expensive to produce, as anyone with a printer knows.

Floppy-Copy comes with a one page leaflet describing how to load the program using Mini-Memory, Extended BASIC or Editor/Assembler.

Value: This program is priced well for what it does. The original version of the program would not operate with the CorComp disk controller card and The Softspot almost immediately modified the program so that it would. This says a lot for The Softspot. The fact that the program will operate out of any of the three TI cartridges is very convenient for users.

Although those who purchase this program will most likely do so for the disk copying utility, they will find the catalog and initialization utilities to be worthwhile functions, too. And I don't think anyone will complain about the price.

—JK

Newsbytes

Unprotected copier

Contrary to the trend, KnowWare, Box 53674, Lubbock, TX 79453, is marketing a disk-copying program without protecting it. Called Turbo Copy, the program sells for $21.95. A company spokesman said, "We're just trying to see if we can get it out on the market. We thought it was a little hypocritical to protect a program from copying that is used to copy other programs."

According to the company, the program can copy a diskette and verify the data on the copy diskette.

Software contest

Quality 99 Software is conducting a contest for purchasers of its recently released Draw 'n Plot program. First prize is $100 worth of the company's software. Second and third prizes are $75 and $50 worth of software. Entrants must be registered owners of the program. Entrants are required to submit printouts of pictures drawn using the program. Entrants should include their name, address and phone number with entries. Entries must be postmarked by Jan. 31. Entries may be used in future company promotions. Winners will be announced Feb. 28. Winners will be required to submit a diskette with the winning drawing on a disk file.

For more information, contact the company at 1884 Columbia Rd. #500, Washington, D.C. 20009. Cost of the program is $41.95

Screen printer

Data Flex Software, 4420E 100N, Marion, IN 46952, has introduced an Assembly language screen dump utility called DFX-Print. The program loads from XBASIC, Editor/Assembler or Mini-Memory and requires a disk system, dot-matrix printer and printer interface.

The program is loaded into the expansion memory and may be run out of BASIC or XBASIC programs by pressing a Function key. When the key is pressed, the screen is duplicated exactly on the printer. The program will also print the screen to a disk file that can be dumped later to a printer. Through the use of a load interrupt, the program will also print screens from such TI cartridges as Tax Investment Record Keeping, Video Chess and others. Instructions on how to wire the load interrupt are included.

There is also a version of DFX-Print for Mini-Memory that operates out of a cassette recorder. However, the load interrupt is not supported in this version.

The program is priced at $24.95 for the disk version, $19.95 for the cassette version. The program comes with a limited, seven-day money back guarantee.

Programs wanted

J&KH Software is offering users of its Super Extended BASIC (SXB) program to turn their investment into cash. The company is looking for programs that use the SXB routines. The company intends to offer a low-priced version of SXB next spring which will not include documentation expect how to load it. This version will be used to operate programs that contain SXB subroutines.

The company offers fixed royalties for each program that is sold, professional packaging, advertising and distribution channels in the U.S. and Australia. The company says programs should use a substantial number of SXB subroutines, be user-friendly, and be implemented in a professional manner. Program ideas should be submitted in advance.

For more information, contact Jim Hollender, J&KH Software, 2820 S. Abingdon St., Arlington, VA 22206.

Surprise, surprise

Richard M. Jolles, general manager of Intellestar, announced last month that he had decided to get out of the software business. The company had been marketing a number of games and educational programs, but with little success, according to Jolles. As part of his going-out-of-business plans, he offered to provide copies of all of his programs to TI user groups. The charge is $100 for groups of 100 or fewer members and $150 for larger groups. The groups would also have the right to reproduce all of the programs to distribute to all members.

Jolles thought that would be the end of it. But then the fall computer catalogs started to come out and, to his surprise, Intellestar software was listed in them. Jolles said it wasn't until after he announced his plans to go out of business that he learned about the catalogs and it wasn't until they were already in the mail that the distributors called him to establish pricing policies.

According to Jolles, a teacher in the Washington, D.C. area, anyone who orders any of the programs can be assured of receiving it. In fact, he recently ordered a new supply of diskettes to allow him to fill orders.

Name change

Challenger Software International has changed its name to CSI Design Group. The company markets a number of programs for the TI99/4A, including Gravity Master and Spy's Demise. The company will continue to market products for the TI, according to Ken Dibble, vice president. The company is located in St. Louis, Missouri.

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

Starting over

We're not sure why anyone would want to use this command to re-enter Extended BASIC, but what the heck. This tip comes from the Central Iowa 99/4A Users Group of Des Moines. According to the Iowans, the following code will get you out of Extended BASIC and will immediately begin to search for a program called LOAD on disk drive one. If there is no program named LOAD the cursor will return to the Extended BASIC screen. (An expansion memory is required.) Here's what you enter: CALL INIT :: CALL LOAD(-31962,255).

As far as we can tell, it works.

Lower-case letters

As you know, the difference between a lower-case and upper-case letter in TI BASIC or Extended BASIC is a matter of scale. Everything is in upper-case. TI uses small-scale upper-case letters to serve as lower-case letters.

The following listing comes from the Johnson Space Center Users Group of Houston, Texas. The data statements redefine the lower-case letters, though not with true descenders. (Perhaps with a little time you could create DATA statements that would produce true descenders.) We'll let you decide how to use the statements in your programs. We found it rather easy via a GOSUB and this listing to improve the appearance of a number of programs.

```
100 INPUT A$
110 REM GOSUB 5010
5010 DATA 00000038043C443C
5020 DATA 0040407844444478
5030 DATA 0000003C4040403C
5040 DATA 0004043C4444443C
5050 DATA 0000003844784038
5060 DATA 0018242020702020
5070 DATA 0000304838082810
5080 DATA 0040404078444444
5090 DATA 0010001010101010
5100 DATA 0004000404042418
5110 DATA 0040485060504848
5120 DATA 0010101010101010
5130 DATA 0000002854444444
5140 DATA 0000007844444444
5150 DATA 0000003844444438
5160 DATA 0000704870404040
5170 DATA 00001C241C040404
5180 DATA 0000005864404040
5190 DATA 0000003C40380478
5200 DATA 0000207020202418
5210 DATA 0000004444444438
5220 DATA 0000004444442810
5230 DATA 0000004444546C44
5240 DATA 0000004428102844
5250 DATA 0000442418102040
5260 DATA 0000007C0810207C
5300 RESTORE 5010
5310 FOR I=97 TO 122
5311 READ A$
5312 CALL CHAR(I,A$)
5313 NEXT I
5320 REM RETURN
5325 GOTO 100
```

Special treatment

Do you want to get special treatment when sending recording media via U.S. mail? One way to do it is to label any diskettes or cassettes you send with this warning: "Contains Computer Disks—Do Not X-Ray."

According to postal authorities, anything labeled in this way is stamped by hand. "It doesn't go through any equipment or anything," a supervisor in the U.S. Post Office in Austin, Texas, says. He indicated that this procedure is standard nationwide.

The postal service does not routinely X-ray mail, anyway. And neither do most shippers. But the warning lets those who handle the mail know that the contents need a little TLC.

Forth info

The Milwaukee Area Users Group is serving as coordinator for TI Forth users. For more information, write to Forth National Information Center, 1007 N. 71 St., Wauwatosa, WI 53213. The group is supposed to have information about modifying TI Forth for use with double-sided diskettes, as well as other information of interest to Forth users.

Making music

The following BASIC program comes from the Summit Users Group of Ohio. It was originally called Mini Organ and was created by J. Canning.

```
100 OPTION BASE 0
110 DIM NOTE(20)
120 FOR A=0 TO 20
130 READ NOTE(A)
140 NEXT A
150 DATA 40000,220,247,262,
294,330,349,392,440,494,523
,587,659,698,784,880,988,10
47,1175,1319,1397
160 CALL KEY(1,K1,S)
170 CALL KEY(2,K2,S)
180 K1=K1+1
190 K2=K2+1
200 CALL SOUND(-1000,NOTE(K
1),0,NOTE(K2),0)
210 GOTO 160
```

Matter of policy

Computer insurance is something that few users probably think about. If you use your computer for hobby purposes only, then your computer equipment may well be covered by your homeowner or renter's insurance policy. However, if you use a computer for any business purpose, and it's a matter of business if you try to take a tax deduction for part or all of your equipment, then the standard insurance policies may not apply.

Using a computer for business purposes means you will probably have to pay for a separate policy or obtain a rider that will allow the equipment to be included with your existing policies. In either case, you will probably be paying a higher premium for coverage. Only you

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User Notes

(Continued from Page 37)

and your insurance agent will know what needs to be done.

Then there are companies which provide only computer insurance. The extent of coverage varies, but some policies issued by these companies may cover everything from electrical surges to the standard disasters caused by earth, wind and fire. Some even cover software. To locate these companies, refer to the Yellow Pages of your local telephone directory. Or contact your state insurance board. They would have information on how to contact such companies. Then, there are a number of insurance agents advertising their services on electronic bulletin boards and telecommunications services.

However, the kind of insurance most computer users could use is probably unavailable anywhere. It's doubtful anyone provides coverage against obsolescence.

Credit due

Last month we published a program that redefined the cursor into the shape of the state of Texas. We attributed the program to a user group in Ohio. It has since come to our attention that the author of the program is T.L. Atkinson of Dartmouth, Nova Scotia.

Bad regulator

Michael Christianson, of Pekin, Illinois, writes of a problem that may be familiar to other TI users:

"Problems with the internal disk drive (of the Peripheral Expansion Box) may be due to a bad 12-volt voltage regulator in the peripheral box power supply mother board. I have replaced several of these and have informed TI of a potential problem. If you follow the TI recommendations for the process of elimination you may be out a lot of money after returning disk drive, disk controller and, finally, peripheral box for repairs. The voltage at the 4 pin power plug should be measured across the outer and inner pins in sets of 1 outer pin, 1 inner pin. One set will read approximately 12VDC, the other 5VDC. Also, one is a negative supply while the other is positive, so polarity should be observed."

Those who lack the expertise to make their own repairs may want to bring their equipment to a local computer doctor, with this information. This may help him isolate the problem and get you back into operation with a minimum of time and expense.

Easy underline

The Penn Ohio 99/4A Home Computer Users Group knows of an easy way to produce solid lines in programs using the FCTN U character. All it takes is the entering of a single program line at the beginning of a program and when the program. When FCTN U characters appear in the program while it is running, they will be in the form of a solid line, rather than an underline consisting of a series of long dashes.

Enter CALL CHAR(95,"00FF") and you'll have an easy to do underline. The Ohioans note of course, is 14.

Say what?

The Penn Ohio 99/4A Computer Users Group (they've got a number of good ideas) has a solution to a problem that may have befuddled a number of Extended BASIC users who have the speech synthesizer. The Extended BASIC manual lists several pages of words and phrases in an appendix that can be accessed via Extended BASIC. However, as you may know, the speech synthesizer merely spells out the phrases when entered in the standard CALL SAY format. Again, it's the Buckeyes to the rescue.

When entering a CALL SAY for, say, TEXAS INSTRUMENTS, you need to enter it thusly:

CALLSAY("#TEXASINSTRUMENTS#")

Note the use of the pound signs. In the context of a sentence, enter it like this:

CALL SAY ("I AM THE #TEXAS INSTRUMENTS#HOMECOMPUTER)

The multi-phrase problem is the result of the software looking for each of the words separately rather than looking for them as a single phrase.

The multi-word problem is the result of the software looking for each word separately rather than looking for them as a single phrase.

More 'freeware'

Readers may ignore part of what was written in the final paragraph of this month's Comments column. MICROpendium has obtained a copy of Super Bugger and will make it available free to readers. Our offer to supply free copies of Microsoft Multiplan and TI-Writer file enhancements also continues. For more information about these, refer to previous issues of MICROpendium.

Those wanting to receive all enhancements will need to send a formatted, double-sided diskette or two single-sided diskettes. Those wishing enhancements for one or two of the three programs need send only a formatted, single-sided diskette.

Enclose a self-addressed, stamped return mailer with your diskette. Mail to MICROpendium, P.O. Box 1343, Round Rock, TX 78680. Allow about two weeks for delivery.

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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WANTED

Pascal compiler software and supporting literature for TI99/4A. Prefer original or copy. Will pay reasonable cost. Phil Glodava, 7422 Arbutus Ct., Arvada, CO 80005. n10

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Same as PQ100-2-12 Except the balanced supplies are + & — 15v

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