MICROpendium

Covering The TI99/4A Home Computer And Compatibles

NOTICE: See story, page 8

Contents

Coming Next Month

—Update on new hardware for the TI
—Review of a terrific space game for the Editor/Assembler cartridge
—Features, to be sure, and more

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Comments

Who needs first-class?

Last month I suggested that readers who want quick delivery of the magazine pay extra for first-class postage. Well, what happens? The postal service delivers the edition to points as far away as Washington, D.C. within five days of the third-class mailing. That's not bad. Speculation on our part is that the postal service put a few more people on the job to handle the volume for the April 15 income tax deadline (we mailed April 14). At any rate, it was nice to see the magazine get out that quickly, for once.

Yes, we screwed up once again. Well, it was the printer, but who are we to deny responsibility? Last month we published a full-page ad that consisted of a photo of Foundation's 128K memory card without any text to tell the reader what it was. This ad has appeared elsewhere, so it probably didn't take a lot of second-guessing on anyone's part to figure out that something was missing. The ad appears on Page 5 in this issue in its entirety, I hope.

Although we're addressing the phenomenon of telecommunications via an article about electronic bulletin board services in this issue, let me get a word in now about what it all seems to mean, at least personally. First, a BBS represents a synthesis of possibilities, taking the concept of mass communications realized in the telephone and imprinting it with the permanence of the printed image. Messages left on bulletin boards remain there as long as the system allows. More, it also carries the idea behind the conference telephone call to new heights by permitting participants to check in at different times while obtaining the very same information that all others were exposed to. There is a McLuhanesque aspect to electronic bulletin boards that make them a thing of the '80s. Watch them proliferate in the year(s) to come.

TI watchers will want to keep their eyes on the developing market in peripheral expansion systems. Several companies are moving into this area and only time will tell who survives.

WHO NEEDS PROTECTION, ANYWAY?

There have been a number of requests for us to print an article about the various ways in which protected programs can be deprotected (unprotected). We know of several ways to defeat the proprietary protection scheme that is implemented through Extended BASIC, some with CALL LOADs and some without, but I'm interested in learning what you think about publishing this information. Bear in mind that some of these deprotection routines have appeared on telecommunications networks and in user group newsletters. I've had a few letters from programmers asking us not to print such information, but what do you think? Let us know.

Which leads nicely into a question that I find disturbing. Does the TI market deserve the support of third-party software developers? To hear it from some, the answer is a resounding "NO." Why? Because the market isn't supporting them. This next part is not meant as an indictment of user groups in general (so, please, don't cancel your subscriptions, I'm just trying to stimulate dialogue) but some of these software developers suspect that the reason they're not selling much software is that a member of a group will buy a program and pass copies of it around to other members, thereby reducing the potential market for the software. (Of course, it may also be that the software isn't worth buying in the first place, which is point well-taken.) I have no personal knowledge of this practice, but to whatever extent it occurs it is counterproductive in the long run. Copying programs for personal use is one thing, but giving the copies away to others is as sure a method of eliminating a programmer's livelihood as I can imagine. Take away the profit motive, and there's no incentive for anyone to spend days, weeks and months perfecting software for TI users.

That's all, for now.

—JK

Feedback

Benchmarks

I don't know who reported to you that the benchmark program for determining the number of ways to make change for a dollar takes 1 hour and 30 minutes to run on the TI but they sure are mistaken. It must have been an Atari or Commodore owner. In TI BASIC it takes 29 minutes and 2 seconds. In TI Extended BASIC it takes 28 minutes and 17 seconds. I tried disabling control of sprites in Extended BASIC to see if it would run faster but it took exactly the same time of 28 minutes and 17 seconds. I wish I had an Atari to check the time as reported in MICROpendium as I have never found a benchmark program that will run faster on an Atari 400 or a Commodore. I gave TI99/4A computers to three of my children for Christmas 1983. They have friends who own Commodore computers and they report that they always win on their 99 against the Commodores. I find it hard to believe the Atari 400 beat the TI. One of my sons-in-law owns an Apple computer and occasionally he wins when we test benchmark programs but it is less than 50 percent of the time.

As to your policy of holding the magazine for a week to get late-breaking stories: How can you or anyone else predict that a story will break in a week? If you can do this then you should be better on the horses and not publishing a magazine. I for one am sick of not knowing when the old 99'er Magazine, now the Home Computer Magazine, will be published. I doubt if I will extend my subscription when the

Feedback

(Continued from Page 3)

time comes, and who can tell when that time will come. If they keep being late I may have a lifetime subscription. I say, THUMBS DOWN, on holding up publishing your magazine on time. In the long run, your reputation (and being on time is always considered when evaluating a person's reputation) will be far better if your publication comes out on time. Did you ever hear of Time or Newsweek or National Geographic being published a week late to get a "late-breaking story"?

Keep up the good work! Your magazine is still a highlight in my life. Don't spoil this by being late with it.

Charles E. Roberts
Springfield, Missouri

Ed: We appreciate your comments, Charles. As a point of clarification, a breaking story is one in which the information is at the moment not available but will be made available within a very firmly defined time period.

On databases

Why hasn't anyone provided a good database management system for the TI? Three months from now, you won't have to ask that question. Oak Tree Systems will answer it with a product which should meet the need of nearly everyone with an interest in data storage and retrieval. Our system (nameless as yet) will feature the following:
—Data dictionary to store the characteristics of user-defined data items for use by all other parts of the system. Characteristics stored include type, size, description and acceptable range of values.
—Storage of six different data types, including string, numeric, integer, binary, flag (a single byte indicator) and date (stored in compressed format). String, numeric, integer and binary fields can be defined in length by the user.
—A master-detail record structure. Master records are accessible by a user-defined key, either randomly or sequentially in key sequence. Detail records are associated with a master and each master can have a variable number of detail records connected to it. This is useful in many applications;

for example, in a budget application where there could be a master record for each budget category and a variable number of detail records, one for each check written for items in that category.
—Record size is totally user-defined (up to 254 bytes) and the number of records per database is only a function of the disk space available, not artificial program limitations.
—Self-customizing update and query/reporting programs generate fill-in-the-blanks screens for data entry and retrieval. Edit checking based on user-provided specifications will be done automatically. The query program allows any combination of criteria to be used to retrieve records and will produce displays or printed reports. Up to three databases can be logically linked to produce the desired output.
—All screen displays are handled by a subset of our exclusive 40-column Display Enhancement Package. Because of memory limitations, the subset provides only those features required to support the database system. The purchaser may buy the complete, unabridged package for a small additional charge.
—Last, but certainly not least, a programmatic interface is provided so that custom programs can be written to access and update up to three databases simultaneously. This interface includes a pre-processor for Extended BASIC programs which converts easy-to-write "commands" into the required Extended BASIC program statements and inserts the statements, along with required subroutines, into the user-written programs.

An optional add-on to the program pre-processor will be available later in the year. This add-on will allow automatic generation of menus, data input/output screen displays and printed reports: with very little programming by the user. With this add-on customized data processing programs can be written with much less effort-only the program flow and arithmetic calculations need to be written by the user. All input/output and database updates will be handled by the generated program segments and subroutines.

So, why hasn't a good database been

available before now? Because it's difficult. It demands that many portions be written in assembler language for performance reasons. It requires that a balance be struck between functionality and machine resources. And primarily, it requires someone who is willing to do it without expecting $20 million in sales as a result, because of the relatively limited number of people (those with fully expanded systems) who will be able to use it.

Charles L. Davis
Oak Tree Systems
Whitmore Lake, MI

About TI-Writer

In publisher John Koloen's review of the word processing program called Companion in the May issue, he states that neither it nor TI-Writer has the capability of allowing the user to see the formatted version of a document on the screen prior to printing.

To the contrary, TI-Writer does have this function. When using the Formatter, the user can specify DSK1.filename (user's choice of name) when it prompts for PRINT DEVICE NAME, and it will write a formatted file to disk that can then be examined with the Editor.

The lines of the formatted document are truncated at 80 bytes if the right margin is defined greater than 80, but this is not normally bothersome because most documents do not have a right margin greater than 80. And in most documents the concern is about the line and page spacings and the left margin and indentations, which can be seen easily using this feature.

In short, this is a screen formatting function that offers almost all that could be expected of such a function.

John R. Cope
Austin, Texas

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.

Marketing firm gets TI inventory

Triton gets all that's left

Triton Products Inc. of San Francisco has launched an ambitious marketing campaign aimed at TI99/4A home computer owners.

The company signed an agreement with Texas Instruments that gave Triton all of TI's remaining home computer inventory. The agreement became effective March 31, according to TI spokesman Jon Campbell.

Triton spokesman Terry Miller says that hundreds of thousands of catalogs describing mostly TI-produced software and hardware were mailed in late April to all known users of the TI home computer. March Direct Marketing "did the creative work" on the catalog, Miller said. TI indicated in January that March Direct Marketing was going to use TI's mailing list of TI owners, numbering more than a million names, to produce a catalog detailing TI products.

Miller says the company plans to mail out three such catalogs this year, as well as flyers, apparently using TI's list of home computer owners. The list includes those who sent in warranty cards. Miller says that users who have not received a catalog by mid-May may send their name and address to the company to be added to the mailing list. The company's mailing address is P.O. Box 8123, San Francisco, CA 94128.

Miller says the company wants to include third-party products in subsequent catalogs and suggests that vendors write to the above address for more information.

Although Miller nor Campbell have figures on the volume of TI products Triton will have available, Miller said, "anything that TI had we have. There's still some question as to exactly what's in the inventory."

Miller says this is the first time Triton has attempted to market products for TI users. He said the company markets business products and software.

Campbell indicated that Triton received rights to all of TI's existing inventory and piece parts as of March 31. The actual value of the items, he said, would depend on how much of inventory is actually sold. Payment to TI, he said, would occur as the products are sold. Campbell noted that Texas Instruments kept some items for use in repairs and the company's exchange centers. Triton, he said, will handle all subsequent sales to retailers from now on.

Myarc offers expansion system

Myarc Inc. of Basking Ridge, New Jersey, is now producing an expansion system for the TI home computer that provides purchasers with the capability of utilizing the double-density feature of the TI Disk Manager II cartridge.

Myarc, which also produces a Winchester hard disk for the TI99/4A, is the second company in recent weeks to announce an expansion system for the TI. Cor-Comp began marketing its expansion system in April. Other companies have also indicated plans to produce expansion systems for the TI home computer.

Lou Phillips of Myarc says the system his company is marketing comes with 32 kilobytes of random access memory, an RS232 interface with one parallel and one serial ports, a disk drive controller capable of handling two double-density, double-sided disk drives and a single-sided, double-density disk drive.

The system is priced at $595. For an additional $50, the company will replace the single-sided drive with a double-sided, double-density drive.

Phillips says the system is completely compatible with all TI software. Each system is supplied with one of TI's Disk Manager II cartridges. The DMII includes a feature for formatting double-density disks that is activated with the controller that comes with the Myarc system.

Myarc calls its system the MPES-50 (Mini-Peripheral Expansion System). The unit plugs into the side of the TI99/4A and is black and silver in color. The unit measures about 7 ½ inches high, 6 ½ inches wide and 12 inches deep. The system comes with a 90-day limited warranty against faulty workmanship and materials.

There is also a version of the system available without a disk drive. Included are an RS232 interface with serial and parallell ports and the 32K memory expansion. It is priced at $299. It can be upgraded with a disk controller and disk drive, the company says. The system also comes with an option for a date and time clock. The price was not available at presstime.

Noting that the system is completely compatible with TI hardware and software, Myarc spokesman Lou Phillips says the manuals that come with the systems "are about 75 percent TI manuals."

Myarc also markets a Winchester hard disk drive for the TI in five, 10 and 15 megabyte models.

Phillips says the company is planning to market several other products for the TI99/4A "in the near future."

For more information, write: Myarc Inc., P.O. Box 140, Basking Ridge, NJ 07920 or call (201) 766-1700.

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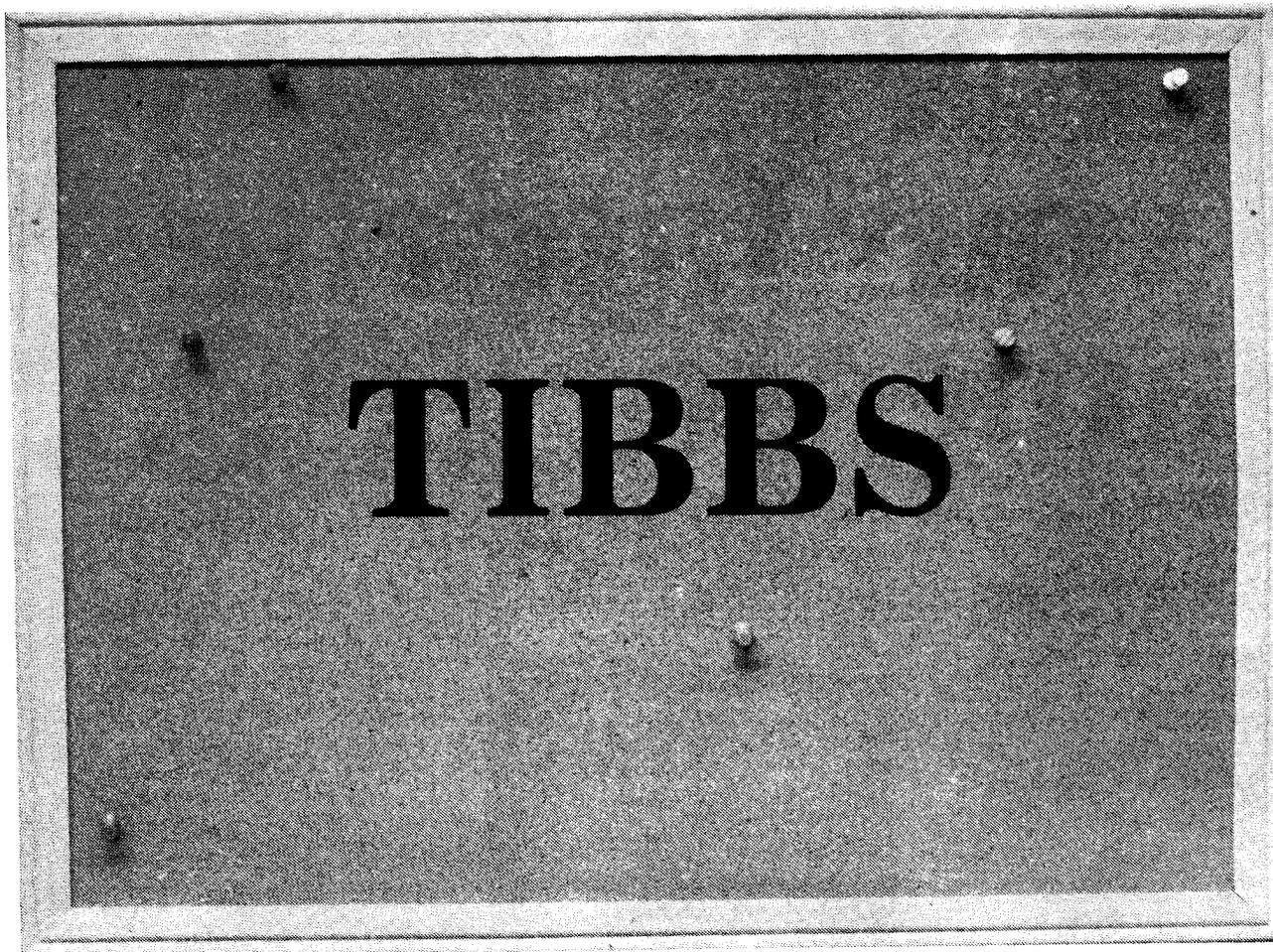
TIBBS

By LAURA BURNS

Every four seconds, from 3 p.m. to midnight, a call comes in to the first TIBBS in the country.

Ralph Fowler of Kennesaw, Georgia, the creator of Texas Instruments Bulletin Board Service, which is trademarked, says he imagines "people dialing all night" to (404) 425-5254 until they get through.

"AT&T probably loves me," says Fowler, who estimates that TIBBS will receive 25,000 calls per year and that from 60 to 70 percent of them are long distance.

"I've got a guy in Illinois that calls every day," he says. "It's amazing what people go through. But I guess in some small towns there's really no one to talk to about your computer."

WHEN TO CALL

Sunday mornings before noon and the wee hours—midnight to 8 a.m.—the rest of the week are the best times to get through, Fowler says. All a user needs to have is a modem and a terminal emulator. The user dials, switches the modem on when he hears the tone, presses enter, and he's in, no charge, except for long distance ones if he's outside the greater Atlanta area.

And maybe there is an opportunity nearer home, because TIBBSes and other bulletin boards are springing up all across the country. (One feature on the Atlanta TIBBS is a list of TIBBSes throughout the world—there is one in Sydney, Australia, now.) There are 37 public TIBBSes and "two or three private ones," Fowler says.

He says he was exposed to bulletin board systems "off and on" since the late 1970s and took no interest in them until he bought a TI in 1980 and got a modem. He began calling bulletin boards and found that there was none for TI.

He says he "started playing around" with the RS232 interface card in the peripheral expansion box. One sample program hooked up two TIs to each other and one program was similar to entering a password, so he thought, "with those couple of lines of code, why not go ahead and make one?"

Fowler says he asked Texas Instruments for help, but got none.

"Everything I asked, they said was proprietary information or they said you can't do on a 99/4A. That made me want to go on with it," he says.

After working on it the better part of a year he put a bulletin board online in Atlanta in August, 1983.

STARTING YOUR OWN

When people call and ask him for help in making bulletin board programs, he says, he advises them that the best thing to do is buy his TIBBS program and customize it.

"I sell the program unprotected for $129.95. Updates are available. I encourage people to make their own changes," he says.

On the other TIBBS bulletin boards he notes that "one guy is charging $10 for the password. Others ask that you send a stamped, self-addressed envelope or something. The rest are totally free. The most popular of them all is this one here. That's because I'm usually about two months ahead of the others. There are special sections on mine that other TIBBS operators can get into to get help."

COST OF CALLING TIBBS—

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He notes that a message base on his TIBBS automatically finds any messages for a user who logs in. Also, the program allows the user to adjust the screen color from the Terminal Emulator II's "yucky green and white." Once you, as a TIBBS caller, have done this, your machine will be automatically set to your preference in color each time you call, Fowler says.

TIBBS keeps a file on each user, recording the last message, how many times he has called and how many messages he has left.

He predicts that the small bulletin board services, such as TIBBS, will continue to be free, in contrast to such telecommunication services as Source and Compuserve.

"More people can access them," he says. "They are of a more temporary nature as far as the subjects being discussed."

He sees the advantage of local bulletin boards as "more information, and available faster."

USER COSTS

He notes that some persons consider it a "hindrance" to telephone long distance, but says a night call from California to TIBBS in Atlanta is about $5 per hour while the connection fee to the Source during evening hours is $7.70 per hour. Besides, he says, "you have to wade through the Source to get to TI" while TIBBS concentrates on TI, though "we do allow the Commodores and Apples to call in and we treat them nicely."

Long distance telephone rates to a bulletin board are the same as for a voice call.

However, Fowler says, "they are working out ways where data calls will be cheaper. I've seen some proposals—it may have been from AT&T—to handle data communications so that charges per minute were less expensive than regular long distance."

FEATURES ON TIBBS

TIBBS users, he says, "like to read the messages. They like to find out what's going on in the TI world. They like to leave messages about problems or questions they have."

The files are popular also, he notes, and "I have what I call guest columnists" with messages entered under titles such as "Newsletter" or "Hardware," he says.

"Right now there's a tutorial on downloading text files and sending them to other bulletin board systems. Right now my 'Newsletter' section has the latest information on Cor Comp's latest products."

One section has hardware and software for sale. Fowler says that most persons setting up a TIBBS find a store and propose running an advertisement for the store in that section in exchange for the store paying for the telephone line.

He notes, however, that some TIBBS lines just run ads they pick up from magazines and some download advertising files from other boards. The Buffalo TIBBS, he says, downloads advertising from an Atlanta computer store, which is now getting orders from upstate New York and from Canada as a result.

A positive addiction: TIBBS

Robert Pinion, a TIBBS user in the greater Atlanta area, says he's "hooked."

He calls TIBBS every day.

"I use it as much as anything as an educational tool," he says, noting that service lines at TI are "very slow," and saying he has learned more from computer hobbyists.

If he leaves a message on TIBBS in the morning, he says, he gets an answer, or perhaps several answers, by the time he looks at it again in the evening.

"Ralph Fowler (the originator of TIBBS) overviews the questions," he comments. "He'll often give me an answer. Some days I just scan the messages. I usually log on twice as often as I leave a message."

Pinion's philosophy is, "For every question you ask, you should answer one, too."

Despite such nationwide telecommunication services as the Source and Compuserve, local bulletin boards fill a real need, he says.

"For one thing, it allows a more specialized group of people to get together," he says. "On the Source, there's no one real good group of TI users."

Although his calls to the original TIBBS are local and thus free, he occasionally makes long distance calls to TIBBS in other cities because of the particular specialties of the sysops there.

He says he notices a "hard core" of about 50 users on the local board and a "periphery" of between 25 and 50 users logging in regularly.

"When it was featured on the local news, calls doubled, then they dropped back," Pinion notes. "There could be a lot of that flash-in-the-pan stuff."

He notes that a local users' group publishes a newsletter through it and that it is a source of new product announcements, and he foresees increasing use of such boards as a means of advertising.

And he would recommend getting the modem and other equipment to hook up to a bulletin board.

Calls to TIBBS, he notes, are limited to 20 minutes. This is necessary, he says, due to the large volume of calls.

A good bulletin board, he says, "should provide the user base with whatever functions they desire. Ralph has tried 50 or 60 features—the popular ones stay." He notes that the systems operator is a key, saying that "the competing bulletin board here attracts a younger age group. Sometimes I'd swear the average age is 14. As a result, you sometimes get meaningless garbage on the screen. Ralph keeps that from happening. If it weren't for his heavyhandedness, I don't think that would be the case."

And a poor bulletin board?

"A poor bulletin board is one that doesn't serve the needs of the calling group," Pinion says. "The easy way to tell is, it doesn't get callers."

BBS ADVANTAGES—

He says the problems he encountered in developing the TIBBS were "the problems you encounter in treading ground that's been untrodden," such as the lack of technical information and the lack of cooperation from Texas Instruments. Fowler estimates that he is now on the 250th revision of the TIBBS program.

"Some of it involved actually taking the hardware apart and seeing how things were connected," he says.

"People who have the program tell me they learn more about their computer from looking at that program than they ever had before," he adds.

He notes that the menu-driven program is easy from the operator's standpoint. Many user groups are acquiring a TIBBS program as a method of information exchange, he says.

Leaving a message on a bulletin board, he says, is easier than a voice call, because "it's easier than to have somebody call 25 times a day. Some people are never home."

Private mail is also available on TIBBS, Fowler adds.

Equipment needed to set up a TIBBS, besides the $129.95 program, is a memory expansion (Fowler recommends Foundation's 128k card), two single-sided or one double-sided disk drive, disk controller, Extended BASIC cartridge and a "smart modem."

Referring to the 128K memory expansion, Fowler notes, "that version (of TIBBS) runs three times faster and the disk drives one-twentieth as much. In other words, that makes the disk drive last 20 times longer. People can't believe how much better it works."

The main limitation of TIBBS, he notes, is that it is a single-user system. That is, only one person can be on line at a time.

"You have to enforce a sort of time limit," he says.

The average systems operator—sysop—spends about two hours a week managing the TIBBS, he says, though he spends much more time on his.

"If the operator has a printer the work is done for him," he notes. "It's about two hours unless he's really into changing things."

The database is set up for 100 messages and when the newest message comes on, the oldest message is automatically deleted. Fowler says he decided to set TIBBS up that way after frustration with bulletin boards on which as many as 50 messages at a time were deleted manually all at once.

Occasionally, he says, some maintenance is required on the user files.

THE JERK TRAP

One feature of TIBBS is "an elaborate setup" that Fowler calls "The Jerk Trap."

"The Jerk Trap" scans for—and screens out—certain profanities and prevents users from logging on using the operator's name. Thus, it isn't possible to leave a message saying that

1200 baud possible

New terminal emulator program available

TI home computer users now have a choice when it comes to buying a terminal emulator. Softmail Inc., of Lancaster, Texas, is marketing a disk-based program called TE 1200 that gives the TI the capability of transmitting data through an RS232 interface at 1200 baud. The program requires either the Editor/Assembler or Mini-Memory cartridge, 32K memory expansion, disk drive, RS232 interface and a modem for telecommunications.

The Texas Instruments Terminal Emulator II cartridge allows users to transmit data at speed up to 300 baud, about 37 characters per second. TE 1200 quadruples the data transmission speed.

According to the company, TE 1200 provides users with up to 12.5 kilobytes of data storage in RAM. This is several times the amount of storage provided by TEII. Data transmission parameters are selectable, including baud rate (110, 300 or 1200), parity, number of data bits, duplex and the number of start and stop characters bits. Communication parameters can be changed without leaving the program.

Data transmission commands are provided through the use of Control keys.

According to the company, the program features an intelligent word wrap at the end of a line, optional automatic logging to any device except a cassette recorder and file transfer compatibility with TEII files.

The program can be used with 300 baud or 1200 baud modems, though 1200 baud transmission is possible only through the use of a 1200 baud modem. TE 1200 is priced at $49.95 and is available from Unisource Electronics, P.O. Box 64240, Lubbock, TX 79464, or call 1-800-858-4580 (806-745-8834 in Texas).

BBS glossary

Here are some terms used in connection with electronic bulletin boards and telecommunications.

BBS—An electronic bulletin board service.

Modem—Modulator/demodulator. This is an electronic converter used in data transmission. It is used to change the digital signals used by a computer into analog signals for transmission over telephone lines. The receiving modem then converts the analog signals into digital signals for use by the computer. The modulator puts information on during transmission and the demodulator receives it.

Sysop—Systems operator, the person(s) who set up and maintain an electronic bulletin board service.

Terminal emulator—Software that allows computer users to control various telecommunications parameters, such as parity and baud rate. Terminal emulators act as a control program for telecommunications.

BBS is business tool, too

Bulletin boards are starting up every day. Scheduled to have begun, at least in a skeletal form, by May 1, was the Bay Cities Telecommunications Network.

Terry Hibdon of Bay Cities Electronics in Redwood City, California, says the bulletin board will "probably" have a membership fee. The fee will include a credit check, enabling members to order the software and hardware they can find listed and described on the bulletin board as soon as it comes in. Then it will be shipped to them.

One of the features of the bulletin board—whose number is (415) 364-8517—will be a crime network where users can record the serial numbers of their computers.

"If someone's system is stolen he can call us as well as the police," Hibdon says. "The service centers and places like that could check with us. It's a kind of insurance."

Other features he foresees as possibilities are travel information, a time and temperature service, industry news and a place to trade public domain software and a "chit chat" mode to talk to other users.

With a bulletin board, Hibdon says,

"you can widen your powers of buying by shopping around for new and used equipment."

By operating a BBS, he says, he can get ideas from the customers as to what they want.

"Having it inside the store makes it easy to keep up with industry developments and get information out to our customers immediately," he says.

He says he also plans to include information on programming and how to use the computer.

"Telecommunications are in their infancy," he says. "Modems are going to be more popular and people are going to be communicating computer-to-computer more often."

He says that now is a good time to get a modem and "get into it," noting, however, that many persons are "afraid to use telecommunications. A lot of people don't know what it is."

Hibdon says he expects from 60 to 70 initial users, based on surveys.

He says the bulletin board will add features based on suggestions and comments from users.

An advantage of a bulletin board, he points out, is that it can be updated on a

daily basis, whereas "it takes 30 days for a magazine to get out."

He feels that long distance telephone charges on a bulletin board are not significant in that "you can grab up and copy the information to disk in 15 minutes max. Most things you can do in less than five minutes."

For more information, contact Bay Cities Electronics, 624 Wood Side Rd., Redwood City, CA 94061 or (415) 367-1880.

REACTIONS TO TIBBS—

TIBBS is closing down for good and signing it "Ralph Fowler."

"You'd be surprised how many John Does, Joe Blows and Ralph Fowlers I get," Fowler says. "You'd think half the people in the country were named Ralph Fowler. Also, if you write a profanity, you get thrown off the system immediately."

"The Jerk Trap" can also be used to filter out names of persons who "call up and give you trouble," he notes.

It can also take care of "hackers who want to break in—people who start at the upper left of the keyboard and hit every key trying to find secret commands in the system. After a certain amount of that, they won't be there," he says.

Reaction to TIBBS has been generally favorable, he says.

"Some swear it's not on TI—that a TI console couldn't handle this," he notes. "TI's a slow computer but with the 128K system it's just as fast as the faster systems."

One reaction he got, he says, was a person saying "that the bulletin board was important when TI was still with us but now that TI was gone it was like a lifeline."

He adds, "I always hate the word 'user-friendly' but that's what people say the system is."

For example, he says, a person calling TIBBS is first asked whether he wants help. There is a guide for composing messages and a line length guide, as well as an expert mode for persons who don't require help.

Authors of several types of bulletin boards live in the Atlanta area, Fowler notes, making an exchange of ideas possible. As to why Atlanta—other than that it is a high-tech area—he doesn't know.

An Atlanta television newscast recently featured TIBBS, he says, noting that the station was surprised that such a major nationwide service would operate for a computer which is no longer being manufactured.

However, he notes, "there's still two million of them out there."

The 27-year-old Fowler, who is a school board energy coordinator, says he never had any formal computer training. He learned on the job with an energy management company.

"I learned about BASIC and started programming," he says. "I taught myself. I must have done a good job because I was exempted from all my computer courses at college."

He remembers looking at the TI99 and thinking "no way am I going to pay $1,000," but that when the TI99/4A came out at $499 "I snapped it up—that was a good deal."

He is a graduate of Embry-Riddle Aeronautical University in Daytona Beach, Florida, and is a commercial instrument and multi-engine rated pilot. He owns an airplane, but says he has little time to fly it, though lately he has been having somewhat more time for his family, which consists of his wife and a pet skunk.

Because of the time he spends on TIBBS, Fowler says, "I doubt I'll ever make any money on it." But, he adds, "I just love this computer. It's really fun to work with and very fulfilling."

Accounts Receivable/Accounts Payable

Keeping up with business

Creative Expressions recently introduced a business applications system of which the Accounts Receivable/Accounts payable herein reviewed is a part. The system includes three other segments: Payroll, Financial System (ledger and journal) and Order Entry/Inventory.Of several such business systems that I know of, this is the only one that is not designed to work with a memory expansion. Using only a single disk drive, the Creative Expressions package seems to be aimed at the small business on a tight budget.

Performance: This accounts receivable/payable program does what it is supposed to do. Namely, it keeps track of the billing that one must do to stay in business. It's a job that few businessmen like, I venture to say, but once the user gets accustomed to how this program operates, the procedure is painless and easy to do.

Of course, it also takes care of one's payables, but that's why our creditors buy accounts receivable programs. Although I will focus on the accounts receivable function of this program, the accounts payable segment operates in much the same way as the receivable.

The program, which comes on one disk, is capable of writing 200 accounts and 400 transactions per single-sided, single-density disk. Because the program is unprotected, the informed user may change the file parameters to take advantage of a double-sided drive. Also,those with multiple disk drives may modify the appropriate program lines to permit operation with two or more drives. The program comes with a three-month limited warranty.

Operating out of a single disk drive involves a large amount of disk switching. I tested the program using a single double-sided disk drive, and to reduce the amount of disk switching I copied the program to a double-sided disk, which left enough room on the disk for data files as well as the program. I was thus able to avoid the necessity of switching program and data files.

Review

Report Card

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

Cost: $125 (diskette)
Manufacturer: Creative Expressions, 6433 Winifred, Ft. Worth, TX 76133, (817)292-8926
Requirements: console, monitor or television, disk drive and controller, Extended BASIC cartridge, printer and printer interface.

The program is entirely menu driven, with the main menu offering the following five options:
1. Receivable/Payable
2. Customer/Vendor
3. Initialize Files
4. Change Company Specifications
5. Exit
Choosing the Receivable/Payable option results in a menu with options to add, change, delete or display records, enter adjustments, enter charges and payments and the production of a var-

iety of receivable/payable reports. The program permits such adjustments as discounts, finance charges, sales/purchase returns, shipping charges and miscellaneous debits and credits. Among the reports are a listing of invoices on file, cash disbursements report, cash receipts report, aging report, receivable and payable reports and invoice reports for all unpaid payables and receivables. The file reorganization portion of this program section removes invoices that have been fully paid to prepare for the next billing cycle. The user also prints customer statements through the portion of the program, choosing to use either program-generated statements or pre-printed statements as he wishes.

Bill Arneson, of Creative Expressions Inc., says that the statement generating portion of the program is designed to be used with the most popular billing forms in use today.

The Receivable/Payable portion of the program is where most of the work actually done. It is arranged in a logical fashion, with prompts for all input.

The Customer/Vendor portion of the program is used to add or delete cus-
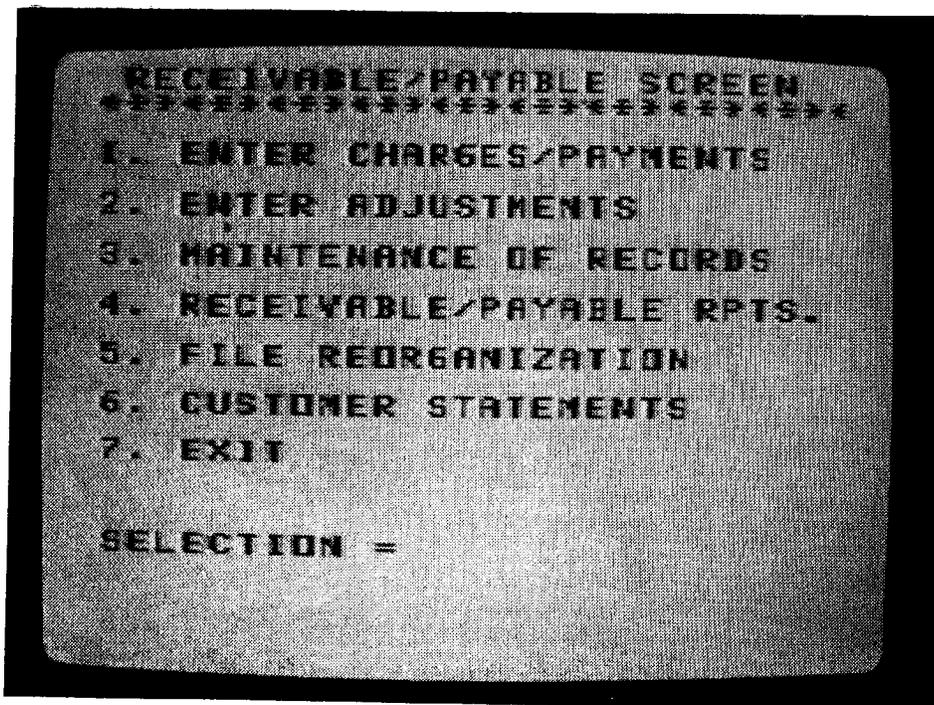
ACCOUNTS RECEIVABLE/ACCOUNTS PAYABLE—

(Continued from Page 13)

tomers and vendors alphabetically or numerically by user choice. It prints labels, too.

There are only a few critical observations that I have to make about this program. One is that it does not have an abort capability that works after a function is initiated. As designed, the only way to interrupt a command once it is initiated is to press Function CLEAR. An abort mechanism would be particularly useful when using a printer. However, this criticism holds true for the TI-Count system by Pike Creek Computers, too.

While the program performs all the math in terms of figuring out the debits and credits and coming up with totals, the user can't include a description line on the statement to indicate what it is the customer is being billed for. The program does print "Thank You" next to payments when using preprinted customer statements. Of course, the user who knows something about programming in BASIC may customize the statements and forms by modifying or adding Print statements to the program.

Whatever limitations there are in this program seem to be due to the fact that it is designed to be used without a memory expansion.

How does this compare to the TI-Counts Accounts Receivable program by Pike Creek? For one thing, the Creative Expressions program is designed to operate independently of any other files or programs, while the Pike Creek program operates out of files created by its general ledger program, which must be purchased separately. Also, while the Creative Expressions program integrates accounts receivable and accounts payable, the user must purchase a separate TI-Count Accounts Payable program to have that function. The TI-Count program is more flexible in terms of printing statements, but it is useless without the general ledger program. Also, one needs no more than one file disk and one program disk for the Creative Expressions program. To get the TI-Count program to do what this one does would take at least three program disks and at least five file disks if you eschew the accounts payable program. Of course,

```
                STATEMENT AS OF 02/28/33
                    ACCT. NO.  103
TO   BLUE RIBBON SHOES        FROM   YOUR COMPANY NAME
     1676 S. OAK                     100 MAIN ST.
     FT. WORTH, TX  76043            ANYWHERE, USA 99999

DATE        INV      AMOUNT       TYPE       BALANCE
----------------------------------------------------
10/21/82 I 017  I   500.00 I CHARGE   I
01/02/83 I 017  I   200.00 I PAYMENT  I
11/29/82 I 017  I   100.00 I PAYMENT  I
02/28/33 I 017  I     2.55 I SHIPPING I
02/28/83 I 017  I ·  30.00 I DISCOUNT I
02/28/83 I 017  I     2.00 I FINANCE  I
         I      I          I          I    174.55
```

```
----------------------------------------------------
CURRENT      .00      OVER 60    .00     TOTAL
OVER 30      .00      OVER 90  174.55    174.55
----------------------------------------------------

               YOUR COMPANY NAME
          RECEIVABLES INVOICE LISTING        PAGE   2
                   02/23/83

CUST NO.      DATE         INV       TYPE        AMOUNT

   INVOICE    207       TOTAL -------             .00
                                               ==========

   400      02/02/83     208      CHARGE        95.00
   400      02/20/83     208      SALES RET     -24.50
   INVOICE   208       TOTAL -------            70.50
                                               ==========

   300      02/16/83     209      MISC DB       10.00
   300      02/15/83     209      CHARGE        900.00
   300      02/28/83     209      SHIPPING      25.00
   INVOICE   209       TOTAL -------           935.00
                                               ==========

   450      02/20/83     210      CHARGE       100.00
   INVOICE   210       TOTAL -------           100.00
                                               ==========

   500      02/20/83     211      CHARGE       100.00
   INVOICE   211       TOTAL -------           100.00
                                               ==========

   600      02/21/83     212      CHARGE       1000.00
   600      02/28/83     212      MISC CR       -100.00
   INVOICE   212       TOTAL -------           900.00
                                               ==========

   551      02/28/83     213      CHARGE       150.00
   551      02/28/83     213      MISC CR       -50.00
   INVOICE   213       TOTAL -------           100.00
                                               ==========

          GRAND TOTAL --------      2620.05
                                   ==========
```

you also have the general ledger functions with TI-Count integrated with the accounts receivable.

Ease of Use: After the normal introductory mistakes and foulups, I found this program easy to operate. This cannot be said for the TI-Count programs, primarily because of the enormous amount of disk-switching that must be done, even with a multi-drive system.

Documentation: The program comes with excellent documentation detailing all the functions as well as providing examples of the many printouts it generates. It includes a lengthy table of contents and comes in an attractive, sturdy three-ring binder.

Value: I found little trouble in learning to use this program. After an hour or so I felt comfortable with it and, in fact, wondered why it wasn't more difficult to use. The more I used it, the more I liked it. I am a sucker for simplicity and ease of use. Those who operate small businesses and have yet to computerize their billing procedures may find this program to be well worth its price in terms of the amount of time it can save at the end of each month. Not to mention that you don't have to be an accountant to use this program.

—Jl

```
                     YOUR COMPANY NAME
                      AGING REPORT                    PAGE   1
                        02/28/83

   DATE        INV       AMOUNT      TYPE       CURRENT    >30    >60    >90

········· ACCOUNT NO.  100      BLUE RIBBON SHOES
   10/21/82    017      500.00    CHARGE
   01/02/83    017     -200.00    PAYMENT
   11/29/82    017     -100.00    PAYMENT
   02/28/83    017        2.55    SHIPPING
   02/28/83    017      -30.00    DISCOUNT
   02/28/83    017        2.00    FINANCE
                                                  .00     .00    .00   174.55
              ACCOUNT TOTAL -----                 .00     .00    .00   174.55

········· ACCOUNT NO.  300      HENSON SUPPLY
   02/15/83    209      900.00    CHARGE
   02/16/83    209       10.00    MICS DB
   02/28/83    209       25.00    SHIPPING
                                               935.00     .00    .00     .00
              ACCOUNT TOTAL -----             935.00     .00    .00     .00

········· ACCOUNT NO.  400      PEN MARKETING
   11/15/82    091      125.00    CHARGE
   02/28/83    091        5.00    FINANCE
                                                  .00     .00    .00   130.00
   02/02/83    208       95.00    CHARGE
   02/20/83    208      -24.50    SALE RET.
                                                70.50     .00    .00     .00
              ACCOUNT TOTAL -----              70.50     .00    .00   130.00

········· ACCOUNT NO.  450      RED'S COMPUTER SUPLY
   12/25/83    205      210.00    CHARGE
   02/20/83    205     -100.00    PAYMENT
                                                  .00     .00    .00   110.00
   02/20/83    210      100.00    CHARGE
                                               100.00     .00    .00     .00
              ACCOUNT TOTAL -----             100.00     .00    .00   110.00

········· ACCOUNT NO.  500      AJAX SHOE SUPPLY
   02/20/83    211      100.00    CHARGE
                                               100.00     .00    .00     .00
              ACCOUNT TOTAL -----             100.00     .00    .00     .00
```

CDC 9409

For a quieter drive

Control Data Corporation makes several floppy disk drives for original equipment manufacturers (OEM). Generally, this means that the drives are built so that other companies, such as IBM, can place them into their microcomputer systems and jack up the price several hundred dollars.

However, there's no law that says the individual user can't obtain a disk drive designed for the OEM market. I purchased the CDC 9409 from a dealer in Austin, Texas. Originally, I was going to buy a Tandon but they had run out of them and were substituting the CDC 9409 for the Tandon TM 100-2, which was reviewed in the February edition of this magazine. The price was exactly the same. In fact, the Tandon and CDC drives are exactly the same in appearance, right down to the shape of the access door. The more pronounced difference I've noticed between the two is that the CDC drive operates much more quietly than the Tandon.

Performance: I've been using the CDC 9409 for about six months. It has performed flawlessly during this time.

The CDC 9409 is a double-sided, double-density 5.25-inch floppy disk drive. It can write up to 250 kilobytes of data to a double-sided, single-density disk. Double this amount for a double-density disk. Using the Texas Instruments Disk Manager II cartridge to initialize disks, one has about 182 kilobytes of storage available on a double-sided disk.

According to the manufacturer, the drive has a service life of five years. It has a mean time between failures (MTBF) of 8,000 hours.

Track-to-track access time is 5 milliseconds.

The drive is equipped with an activity light on the front panel to indicate that it is in use.

The drive is designed to industry standards in terms of compatibility. I found no problem in reading data from disks that were initialized and written-to using a Tandon. Likewise, there was

Review

Report Card

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

Cost: $209 bare drive for peripheral expansion box, includes cable (add about $60 for external drive with chassis and power supply)
Manufacturer: Control Data Corporation, 8100 34th Ave. S., Minneapolis, MN 55440 (612)853-4000
Requirements: console, monitor or television, power supply for external drive, disk drive controller and disk manager software

no problem reading data on the Tandon from disks that were initialized and written-to on the CDC drive.

I've been using the CDC as an external drive. Cabling is industry (and TI)

standard. The manual that comes with the TI disk controller contained all the information I needed to get the drive wired and running. Of course, the CDC drive also fits into the TI Peripheral Expansion Box.

Ease of Use: Connecting the drive to the disk controller is quite straight-forward. The only tool required is a screwdriver.

Documentation: I expected somewhat more in the way of documentation than I got. My CDC came with a four-page brochure that included all of the technical specifications that I was interested in as well as drawings of interface connections and multi-drive configurations. The absence of extensive documentation is probably due to the fact that Control Data Corporation wholesales the drives to manufacturers rather than marketing them directly to end users. The manufacturers thus provide whatever documentation they feel is needed. However, the brochure is all that I needed to make a decision about buying the
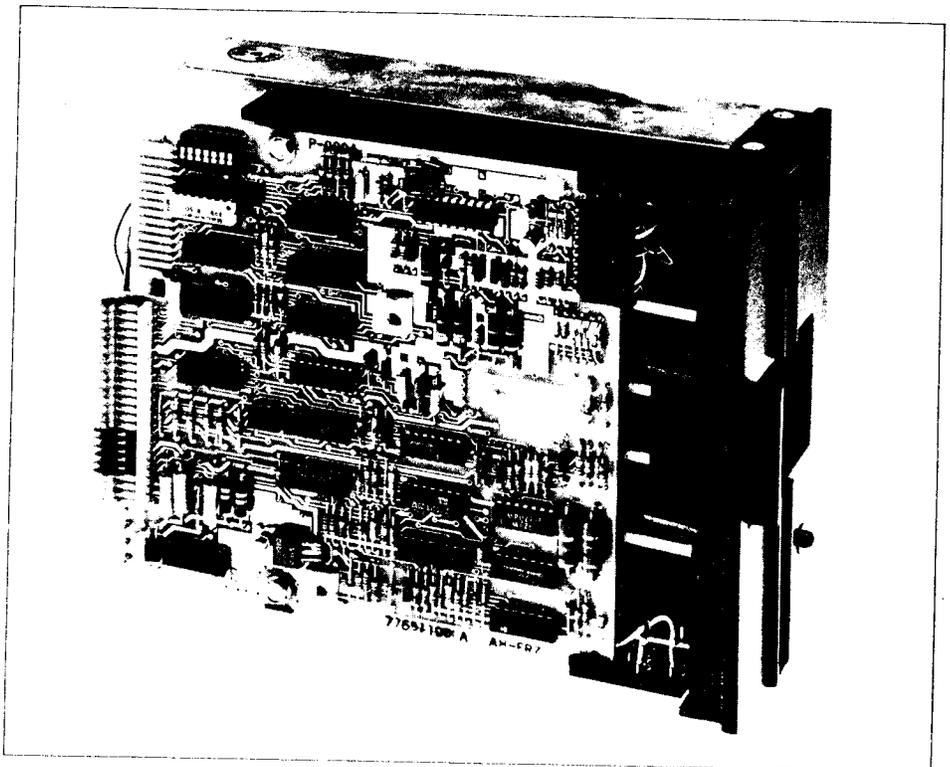
Starship Concord

A venerable space game

Starship Concord is one of the first space games designed to use the features of the TI Extended BASIC cartridge.

And, though space games are getting flashier and faster, Starship Concord remains as something of a benchmark program for those who are on the lookout for quality third-party software.

Coming on the scene after TI's TI-Trek, which was written in BASIC, it makes use of the sprite graphics of Extended BASIC to create a colorful display that depicts the adventures of F.P.S. Concord as it courses through the galaxy in search of the nefarious Denebens.
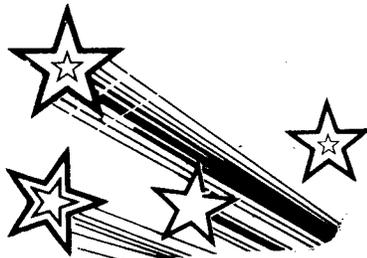
Performance: Essentially a strategy game, Starship Concord has sufficient speed provided by the Extended BASIC programming that the prompts are often ready before the player has decided what move to make next.

The game's graphics include two grids, one showing quadrants and the other showing the sectors within a quadrant. Each is composed of eight columns and eight rows, providing 64 locations within each grid. Within the quadrant grid are numbers indicating the number of Denebens in each. Symbols are used to represent Denebens, the Concord, stars and starbases.

Screen prompts ask the ship's captain to input commands. There are seven commands, including navigation, warp control, phaser control, torpedo control, shield control, repair control and the ship's computer. The computer is used to locate starbases, which are used for refueling, and to aim torpedoes. There is also a vertical column of indicators which provide a visual check on the status of engines, shields, weapons, etc. When the

Review

Report Card

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

Cost: $19.95 (cassette)
Manufacturer: Futura, P.O. Box 5581, Fort Worth, TX 76108 (817)246-6536
Requirements: console, monitor or television, cassette recorder, Extended BASIC cartridge

impulse engines sustain damage, for example, the indicator for impulse engines turns red. When repairs have been made, it turns green.

Every game is different in that the number of starbases and their locations, as well as the number of Denebens and their locations, is randomly selected during initialization. Up to three Denebens may lie hidden in any one sector, waiting for the Concord to appear with its shields low or with less than enough phaser power to destroy them. From a playing standpoint, the more Denebens in the galaxy the better. It is a real challenge to seek and destroy 30 enemy ships in the allotted 30 stardates. Really tough games will also provide only one starbase at which to be refueled. But that's all determined at random.

Ease of Use: The game is not difficult to learn. It loads easily and all instructions are included in the manual.

Documentation: Starship Concord comes with a more than adequate seven-page manual.

Value: Although I've had this game for several years, I still like to play it once in a while. Essentially a game of strategy and not reactions, Starship Concord has been around for quite some time and still wears well against most of the competition. Written by Sam Pincus, it is an intelligently designed game that challenges the old pro as well as the novice.

—JK
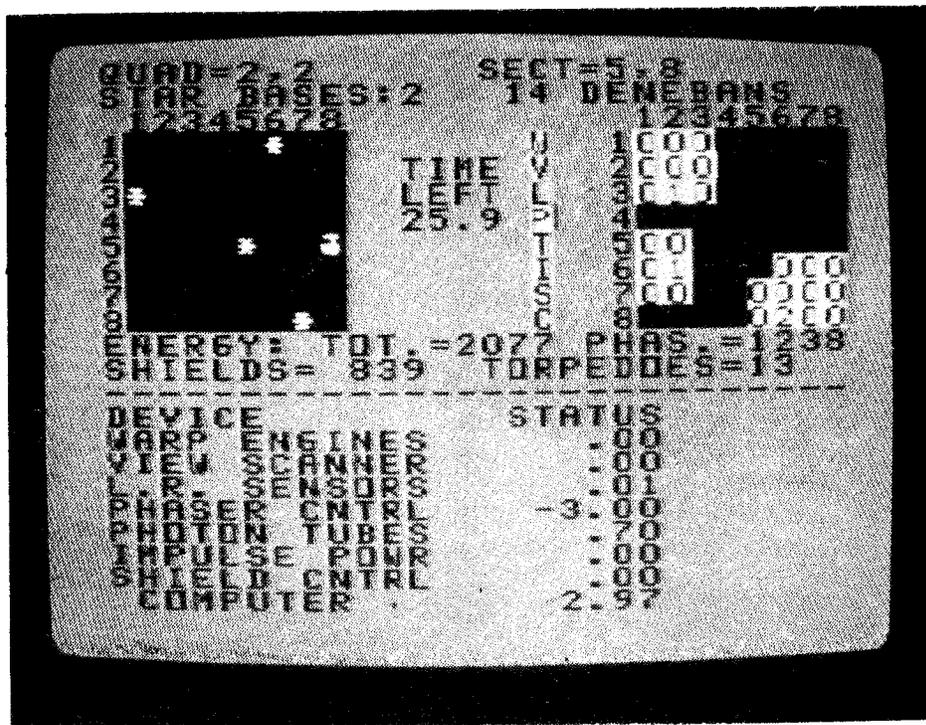
Lost Treasure of the Aztec

Adventures don't get much better

By CHRISTOPHER BOBBITT

The adventure program Lost Treasure of the Aztec is a text-only game designed in the great adventuring tradition of the Scott Adams and Infocom adventures. Built around a rather tried and true theme in adventuring, the search for treasure, this program is flawlessly executed. Its complexity will stupefy even the most expert adventurers for hours on end. The sheer number of commands and objects in this adventure put most other BASIC adventures to shame. It was written by Bob Ulrich.

Performance: To those not familiar with adventures, the adventure is a game where the player must solve a riddle-like problem which has many interacting elements. These adventures often take the form of a quest for something or the exploration of some place out of the ordinary. The player may be asked to explore any place, ranging from an old mansion that is inhabited by a vampire to a strange, airless world in the depths of space. The player may have to deal with strange creatures to obtain even stranger objects to solve an adventure. The adventurer must explore the areas presented by the computer in order to pick out clues and find objects which help to solve the riddle. A good adventure is much like a good mystery novel, the more complex and descriptive, the better. This adventure is very complex, and contains a fair amount of description.

The scenario for this adventure is very intriguing. According to the instructions, the whole adventure begins in 1521. At this time the Spanish general Cortez was marching toward the Aztec capital of Tenochtitlan with his army of thousands. Monteczuma, fearing that the Spanish would take all the gold objects decorating Tenochtitlan, sent out an order which stated that all the treasures were to be hidden from the advancing Spaniards. After much searching the ideal hiding place was found, the treasure was then hidden, and a stone map showing the

Review

Report Card

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

Cost: $16.95 postpaid (disk)
Manufacturer: Mind Game Software, P.O. Box 2155, Scotia, NY 12302
Requirements: console, monitor or television, disk drive and controller, Extended BASIC cartridge.

treasure's location was placed in the city. Consequently, when the Spanish finally entered Tenochtitlan, after slaughtering the less advanced Aztec army, they didn't find nearly the amount of treasure that they expected. Cortez searched the city and couuntryside in vain for the treasure. Many good men were lost in the search parties that never returned. In frustration, Cortez withdrew from the Aztec Empire with most of the Aztec people dead or enslaved. The treasure remained lost among the mountains and valleys of the area that was the Aztec Empire.

The player begins the game at a point more than 450 years after the tragedy. As the adventure unfolds, the player finds that he or she is on a deserted ocean beach. The ship that was to have brought the player to the land of the Aztecs has capsized in a storm. The player escapes from the wreck with a book of matches as his sole possession. This is the situation when the adventure begins. The game description ends with this warning: "Many adventurers have gone before you, but none have ever found the treasure. Some have never returned." More truth than poetry.

Ease of Use: The program is designed to work out of one disk drive. Throughout the game the disk drive constantly turns on and off as data are entered into the main program. The amount of data is immense; the program and the data take up two-thirds of the disk that they reside on. The gargantuan effort expended in writing this program probably isn't measured
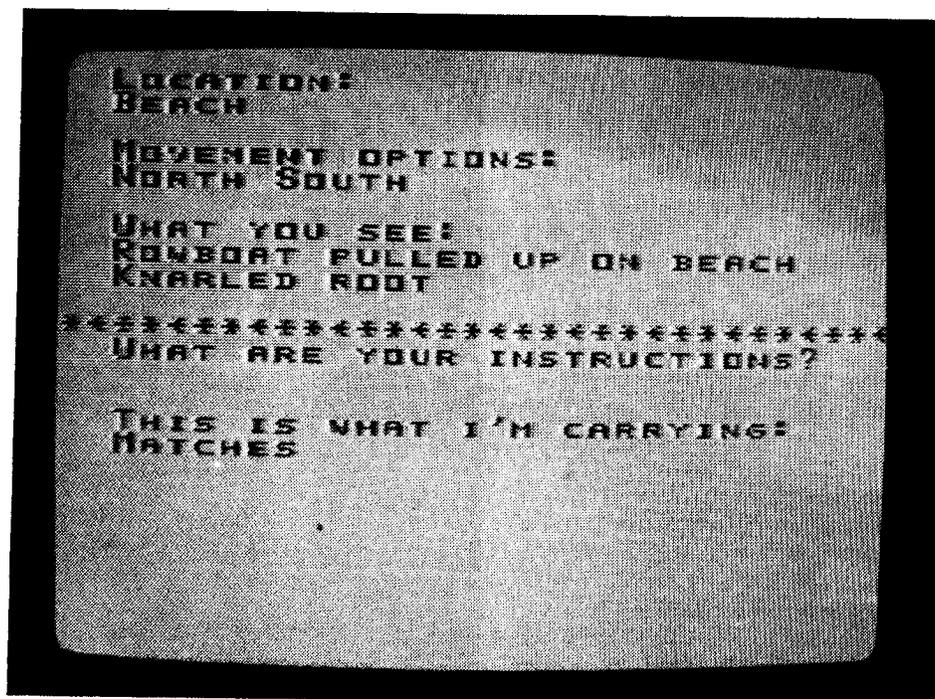
ASW Tactics II

Watch out for submarines

ASW Tactics II is a strategy game the object of which is to destroy an enemy submarine before it sinks your three-ship task force. It was created by Roger L. Johnson, a retired U.S. Navy commander who logged 5,000 flight hours as a helicopter pilot.

Performance: ASW Tactics II is a revision of ASW Tactics I, which runs in BASIC. It starts out with a colorful and patriotic title screen followed by an admonition that the user study the instructions before going into battle. Your task force consists of an aircraft carrier and two escorts. You are the pilot of a helicopter, which is equipped with active sonar, passibe sonobuoys and homing torpedoes. You may also be assisted by a jet airplane that is equipped with a magnetic anomaly detector (MAD).

Before the game starts, you must decide whether to use the MAD. The plane, which passes across the screen randomly, will drop a smoke marker when it passes over the submarine if the MAD is activated.

Having decided this, you must then determine the range of your homing torpedoes. You may choose either 1,000, 2,000 or 3,000 meters. The shorter the range the more difficult it is to hit the submarine.

The game has one main screen. Using nicely done sprite graphics, you have an overhead view of your ships and the sea. Gray clouds pass across the screen, as does the yellow airplane. Your task force steams away in the center of the screen, with wakes trailing behind it.

Your helicopter is controlled by the arrow keys. Movement is incremental so that each time you press one of the keys the helicopter moves forward a short distance. The games uses a wrap-around screen.

Sonar is your principal means of locating the submarine. It is activated by pressing the 1,2 or 3 key. The 1 key makes the sonar effective at 100 feet, the 2 key makes it effective at 200 feet and the 3 key makes it effective at 300 feet. Each time you press a key, a

Review

Report Card

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

Cost: $19.95 (tape)
Manufacturer: DEJ Software, 575 Wisteria St., Chula Vista, CA 92011
Requirements: console, monitor or television, cassette recorder, Extended BASIC cartridge

small reddish wave is emitted. A realistic tone is also produced which degrades as the wave diminishes. The tone is of lower pitch as the depth increases.

You may also drop a sonobuoy which remains stationary. It will alert you if the submarine comes within its range. The buoy is dropped by pressing the "B" key.

You are required to develop your own search patterns as you try to locate the submarine. Since you have a spy aboard the submarine, you may

get a look through its periscope by pressing the number 4 key. This secondary screen gives you a brief view of what the submarine commander sees, which can help you decide where to search for him.

Having encountered the submarine by use of your sonar, a distinctive "ping" results, you may fire a torpedo. You do this by pressing the "W" key and the 1, 2 or 3 key depending on the depth at which the ping occurred. The submarine will take evasive action, so you are not guaranteed a hit.

Of course, while you are searching for the submarine, it is trying to destroy your task force, one ship at a time. You lost if the submarine destroys your fleet. You are declared a winner if you manage to destroy the submarine before it sinks your last ship.

The graphics in this game are well done and sound is put to good use. Sound is used to represent the whirling of the helicopter's rotors as well as the sonar. The sound of an explosion is heard when the sub or a ship is blown up.

Ease of Use: From a mechanical standpoint, the game is easy to play. There are only a few commands to
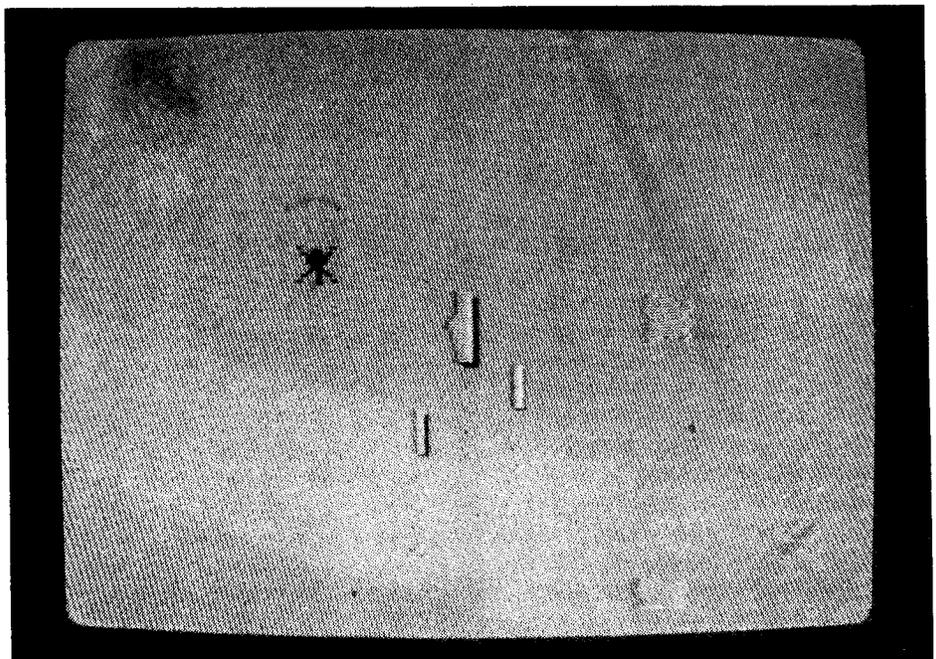
TREASURE—

in programming hours, or even days, but weeks.

The game automatically loads itself when Extended BASIC is selected. The first program loaded contains the title screen and a good portion of the instructions and background material found in the instruction manual. After the instructions have been viewed,, the program then gives the option of beginning the adventure over or continuing a previously saved game. Any person who plays adventure games realizes that a save game feature is a must. This is because most of the good adventures take days, or even weeks, to solve. The disk which contains the adventure has enough space left to store many game files, since each one takes only four sectors out of the more than 100 available. After the option desired has been chosen, the computer then goes on to load the game and the data. If you are loading a saved game, this process can take as long as two minutes. Starting the game from scratch doesn't take as long, only about a minute. When the adventure has loaded, it automatically runs itself

and after a few seconds presents the adventurer's location, what is visible and a query for the player's command. At this point he must type in either a single command, such as "N" to go north, or a two-word command such as "DIG HOLE" or "CLIMB TREE." The two-word commands are usually more descriptive of their function. Because it uses menus and prompts, this program can be easily used without even looking at the instruction manual. Anyone familiar with the Scott Adams adventures will find this program very similar in its style, the type of commands it uses and the way it presents data to the player.

Documentation: The documentation, though sparse, is completely adequate for this adventure. The eight-page manual gives the scenario of the adventure, the loading instructions and a description of the types of commands accepted. The manual also explains the types of errors which may be obtained from improperly loading saved game files, and those that may result from negligence by the user. The only thing missing from this manual which often appears in the instructions for other adventure games is a section containing hints on solving the adventure. With a game of this difficulty level, hints may be crucial to preserving one's sanity. This is not necessarily an oversight, but it may mean the difference between solving or not solving the adventure for a lot of users.

Value: The value of an adventure is hard to determine. Once an adventure has been solved it is useless to the

adventure player. Unlike an arcade game which is slightly different every time, the quest in an adventure never changes. This is the main reason why adventures are so hard to solve in the first place. If the value of an adventure is a reflection of its difficulty, then this is a program with great value. In comparing its difficulty to other adventure games, I believe it is roughly as difficult as the Savage Island adventures in the Scott Adams Adventure Series. At a price of $16.95 this game is a great value for the money in any case. While comparable to more expensive assembly language adventure games, it is priced to compete with adventures in BASIC.

The author responds

As you can imagine, I was very pleased to read the review of Lost Treasure of the Aztec.

A few comments, if I could:

The reviewer mentions that the time to load a saved game is two minutes and starting from scratch about one minute. In point of fact, the times are the same because they use files of the same format. The actual load time is about 1 3/4 minutes.

The question of hints in the manual is something I worried over for quite some time. What I decided to do was to leave the hints out. I have been giving out hints to people who write and ask, provided they pay the postage. The reason I did this is that I didn't want to "give away the store" before a person could get to the candy counter.

Bob Ulrich
Mind Games Software

TACTICS—

know and they are easy to recall. From a strategic standpoint, this can be a very difficult game, particularly if you limit your torpedo range to 1,000 meters. I was not able to destroy the submarine at this range despite making repeated sonar contacts with it.

Documentation: The game comes with three typewritten pages of instructions. It has an easy to grasp chart of key functions and a drawing that shows how the equipment works.

Value: I found AWS Tactics II to be an interesting strategy game. For those who lack the patience to search for an invisible submarine, though, it may become frustrating. The game can go on for quite awhile with very little happening until you make contact with the submarine. Then everything happens very quickly as it attacks your task force. I do feel that the game is somewhat overpriced. But that is an observation I make about many of the games reviewed in these pages.

—JK

CDC 9409—

drive. Everything I needed to get it running was in the disk controller manual.

Value: This drive is a fine value for the price. When computer manufacturers load them into their machines the price automatically goes up, though nothing else changes. I've spoken to individuals who repair disk

drives and they give Control Data very high marks, particularly in the area of quality control.

If I had a choice between a Tandon TM 100-2 or a CDC 9409, the price being about the same, I'd probably choose the CDC. It does everything the Tandon does only much more quietly.

—JK

Newsbytes

Protector available

In last month's Comments column we told you about a program that allows users to protect programs written in BASIC. Here are some details:

The program is written by Andy Blanton and is called "Program Protector." The program is designed to work in console BASIC only. When used with a Mini-Memory cartridge it can protect a console BASIC program under 4 kilobytes long from being listed or edited. Actually the first line of a program will appear on the screen when listed, but that's all. It is thus recommended that the first line be a REM statement. The 32K memory which is needed to protect BASIC programs longer than 4 kilobytes.

Programs that are protected using Protector can be copied by users. After protecting a program it is copied onto disk or cassette.

For more information or to order write A. Blanton, P.O. Box 234, La Verne, CA 91750. The program is priced at $14.95, plus 6 percent sales tax for California residents.

TI makes profit

It didn't take long for Texas Instruments to show a profit after dumping its home computer. The company reported profits of $79.8 million in the first-quarter of 1984, up from $7.1 million in the first quarter last year. The profits amounted to $3.32 per share, compared to only 30 cents per share in 1983. Sales were up, too, climbing from $1.17 billion in the first quarter of 1983 to $1.34 billion in the first quarter this year. The first quarter profit this included 41 cents per share from the sale of home computer inventories. The merchandise had been written off when the company left the home computer market last fall. TI reported losses of $145.5 million in 1983.

Galaxy is here

Microcomputer Games Inc., a division of the Avalon Hill Game Co., has translated its Galaxy space game for the TI99/4A. The company released B-1 Nuclear Bomber for the TI several months ago. A review of it appeared in the February edition of this magazine.

Unlike B-1 Nuclear Bomber, Galaxy requires the Extended BASIC cartridge to operate. From 1 to 20 players may play. Players send their fleets out to explore and conquer the universe, solar system by solar system. Each planet has its own characteristics. Some may have immense industrial development while others may be barren. The defensive capabilities of each varies also. Players may compete against each other or the computer.

For more information, write the company at 4517 Harford Rd., Baltimore, MD 21214 or phone (301) 254-5300.

Cartridge deals

A Lubbock, Texas, company, Sunware Ltd., is offering programmers access to the TI99/4A GROM and peripheral ports by transferring their diskette-based software into a solid state format. Programmers supply the company with their program and the company then reviews it and quotes a cost for conversion. Programs not written in TMS9900 assembler must be converted, according to the company. A price for mass production of the cartridge will also be given, according to the company. The company also offers marketing services for distribution of the cartridges.

For authoring guidelines and other details contact Sunware at Park Tower Bldg., Suite 140, 1617-27th St., Lubbock, TX 79405 or phone (806) 747-2534.

$1 million worth

The Eldorado Trading Group of Palo Alto, California, has taken on more than $1 million worth of TI software, the company says.

Larry Boggs, controller for the company, says they have a full line of TI software and hardware, enough for "through this year and the next."

He says the company has more than 75,000 cartridges in stock, including TI-Writer and Microsoft Multiplan. The company also has peripheral expansion boxes, "everything but the computer."

He notes that "much of the software you mentioned in your May issue as being hard to find, we have."

He says the company is also marketing the Axiom printer, produced by a subsidiary of Seiko. The printer cable connects directly into the side port of the TI.

The company has a toll-free telephone number for ordering. In California, the number is 1-800-248-2224. For other states, the number is 1-800-227-8292.

PEB connector

Anyone who owns a TI Peripheral Expansion Box knows what ugly is. It's also known as the big, black box-end cable that plugs into the side of the computer, linking it to the PEB. A California company called Ten-X Precision is marketing a cable it calls the Ten-X Interconnect System that puts the bulky TI cable out of sight, if not out of mind. One end of the Ten-X cable is plugged into the computer's I/O port or speech synthesizer, and the other end is linked to the TI cable. The user may then place the black box that forms the end of the TI cable behind the PEB so as not to be bothered by it again.

The interconnect system also tilts the TI keyboard at a slight angle which, the company says, improves typing comfort. The unit is unobtrusive, according to the company. The unit comes in two models: one that includes the cable to attach to the PEB cable and a unit that comes without the cable for those who wish only to tilt their consoles. The cost is $43.90 and $14.90, respectively. For more information, contact the company at P.O. Box 163, Concord, CA 94522.

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

Loading tip

Al Curran of Harwich, Massachusetts, has a tip that may put an end to any problems you've had loading programs from cassette.

Curran, who operates Amateur Radio Station WA1WIE, urges users not to do anything violent to the offending cassette recorder. Instead, he recommends you borrow a recorder from someone and load the cassette into it. Then remove the three lines that go from the computer into your recorder and in their place install a line that is attenuated. He says this is necessary to guarantee proper impedance matching. Such lines can be purchased at Radio Shack and other electronic supply stores. This line goes from the output (ear) of the borrowed recorder to the input (mic) of your recorder. Now set the volume and tone levels about halfway on the borrowed recorder. Install a new tape in your recorder and set the levels where you normally keep them for loading purposes. Start your recorder in the record mode, then immediately start the borrowed recorder in the play mode. The program will now be transferred into your cassette recorder.

"You will be pleasantly surprised when you rewind the new tape," Curran writes. Unhook the attenuated line, replace your lines and load the tape into the computer. He says the program should load now.

"I have a tape that I bought with five programs on it and when I tried to load it, it was a disaster. I tried for two nights using all sorts of settings but nothing worked. This little trick was super and I'll bet you get yourself another recorder just to keep for those abominable programs that just won't load," he writes. He adds, "I use my TI99/4A for radioteletype and it has proven to be a flawless computer for almost three years."

Bug debugger

Charles E. Roberts of Springfield, Missouri, thinks TI users shouldn't have to put up with bugs, crawling bugs that is.

He says there's no need to purchase one of those ultrasonic devices that supposedly drive roaches, mice and other critters out of homes. "Your 99 has the capability of producing these high-pitched sounds," he writes. "If you have a tweeter with your hi-fi system that will produce sounds in the range of 25,000 to 44,733 c.p.s. and you can hook up your hi-fi to your television, then you can make your own Bug Debugger by making your 99 play through the same television with the following program:"

```
10 REM
20 REM BUG DEBUGGER
30 REM
40 CALL CLEAR
50 X = 25000
60 Y = 30123
70 Z = 36570
80 FOR LOOP = 0 TO 144000
90 CALL SOUND (-700,X,0,Y,0,Z,0)
100 X = INT (X*1.0075)
110 Y = INT (Y*1.0075)
120 Z = INT (Z*1.0075)
130 IF X > 44733 THEN 170
140 IF Y > 44733 THEN 190
150 IF Z > 44733 THEN 210
160 GOTO 220
170 X = 25000
180 GOTO 220
190 Y = 25000
200 GOTO 220
210 Z = 25000
220 PRINT X; Y; Z
230 NEXT LOOP
240 REM WILL RUN FOR 25 HOURS
```

If you change line 240 to read GOTO 50 the program will run until you stop it.

Extra memory

Anyone who has the 32K expansion memory knows that it provides only about 24 kilobytes of random access memory for actual use by the user. The remaining 8K isn't accessible via BASIC. However, there is a CALL LOAD command that appears to do the trick.

After starting the system in Extended BASIC, enter CALL INIT :: CALL LOAD (-31866,33,0). Then do a SIZE command to see how many kilobytes you've got. It should show that there is about 32,000 kilobytes of program space available. We don't gua-
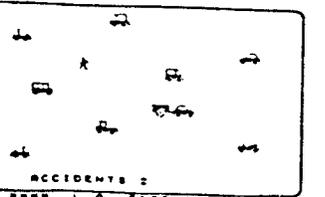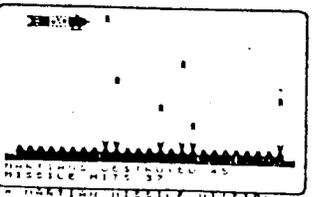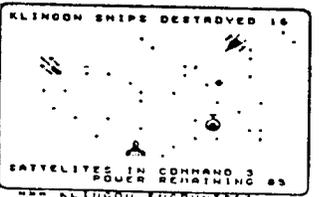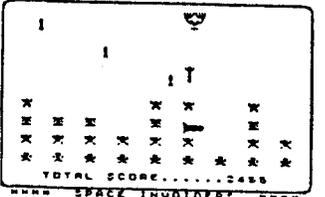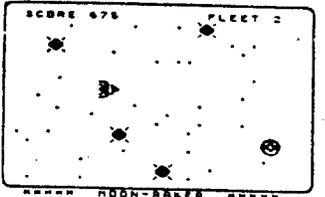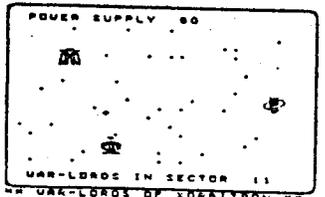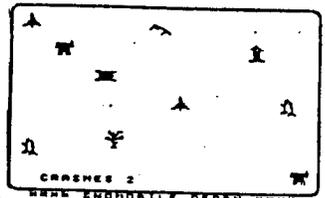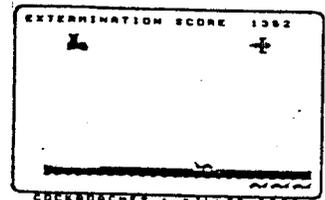
User Notes

rantee what the results will be if you now decide to write a 32K program, so be cautious. (We're told that if you exceed the 32K limit for programs or data the console will lock up.)

64K memory?

This is just for kicks, but there's a CALL LOAD that makes it seem as if your TI has 64 kilobytes of RAM, though we all know that's absurd. It requires the memory expansion to work. Enter CALL LOAD (-31866,160). Then run the SIZE command. It should show that you have 65,535 bytes of program space free. This is not correct, of course.

A different color

Have you ever wanted to change the color of the TI screen, text and cursor in the immediate (programming) mode? According to the Cleveland Area 99/4A Computer Users Groups newsletter, a simple routine entered without line numbers will do the trick. It works only in Extended BASIC.

Here's the routine: FOR I = 0 TO 9 :: CALL COLOR (I,16,1) :: NEXT I :: CALL SCREEN (14) :: ACCEPT AT (1,1): A

After pressing enter, press Function 4. Voila! A screen of a different color. You can change the foreground color by changing the CALL COLOR number and the number in CALL SCREEN.

Disk loader

Here's something else from the Cleveland Area Users Group, a disk program loader that runs out of Extended BASIC.

First, enter the following program:
```
10 DIM PS$ (40),A (16) :: CALL INIT ::
GOTO 25
15 CALL LOAD (-212,J,A (1),A (2),
A (3),A (4),A (5),A (6),A (7),A (8),
A (9),A (10),A (11),A (12),A (13),
A (14),A (15) A (16))

20 RUN "DSK1.          "
```

```
25 OPEN #1: "DSK1:",INPUT ,RELA-
TIVE,INTERNAL :: INPUT #1: D$
30 DISPLAY AT (1,6) ERASE
ALL: "DISK NAME = "; D$ :: R = 3
35 FOR I = 1 TO 40
40 INPUT #1: P$,T
45 IF LEN (P$) = 0 THEN 75 ELSE IF
P$ = "LOAD" THEN 40
50 IF T = 5 THEN 55 ELSE 40
55 IF I < 10 THEN C = 2 ELSE IF I > 9
AND I < 21 THEN C = 1
60 IF I = 21 THEN C = 15 :: R = 3 ELSE
65
65 I$ = STR$ (I) :: DISPLAY
AT (R,C) : I$&" = "&P$ :: PS$ (I) = P$
:: R = R + 1
70 NEXT I
75 CLOSE #1 :: IF I > 20 THEN R = 22
80 DISPLAY AT (R + 2,1) : "CHO-
ICE: " :: ACCEPT AT (R + 2,8)
BEEP SIZE (2) VALIDATE (DIGIT) : YC
85 P$ = "DSK1." &PS$ (YC) ::
J = LEN (P$)
90 FOR I = 1 TO J :: A (I) = ASC
(SEG$ (P$,I,1)) :: NEXT I :: CALL
CLEAR :: GOTO 15
```

According to CAUG, this program will read a disk catalog and build a list of BASIC and Extended BASIC programs to be run. It will list up to 40 programs. The CALL INIT and CALL LOAD lines changes the RUN "DSK1.xxxxxxxxxx" statement so that you don't have to change the load program every time you add or delete a program.

Okay, having entered the program (we recommend you save it under any name just to be safe), enter SAVE DSK1.LOAD,MERGE.

Then enter NEW.

Then enter MERGE DSK1.LOAD.

Then enter CALL PEEK (-212,A,B,C,D,E,F,G,H,I,J) :: PRINT A; B; C; D; E; F; G; H; I; J

Now look for the following numbers to appear on the screen, in this order: 15, 68, 83, 75, 49, 46, 32, 32, 32, 32 (the commas are for punctuation only).

The 15 is the length of the literal (the number of characters) in the RUN statement.

The 68 is a D in ASCII. The 83 is an S. The 75 is a K. The 49 is a 1. The 46 is a period. The four 32s are spaces.

If all of these numbers appeared, you're in the clear. Enter SAVE DSK1.LOAD.

If you didn't find these numbers, you must use the CALL PEEK and PRINT

to find the location of the RUN literal. CAUG recommends that you start at -500 (instead of -212) and go from there by increments of 20 to -1. They suggest you use the Function REDO key and just change the address to be Peeked. If you find the correct address, change the address in line 15 from -212 to the address you Peeked and then save the program.

We added a few lines to the Peek, changing -212 to the variable XX and starting it at -500 in a FOR-NEXT loop using increments of -1 to count down to -1.

Our Peek looks like this: FOR XX = -500 TO -1 :: CALL PEEK (XX,A,B,C,D,E,F,G,H,I,J) :: PRINT XX :: NEXT XX

This saves time, but you've got to keep your eyes open to catch the right set of numbers before they scroll off the screen.

By the way, make sure you've entered 10 spaces in the RUN statement on line 20. Also, if you don't find the right numbers the first time, you may want reload your saved copy of the program and start all over by entering the Peek lines. We found that the second go around worked while the first didn't.

Size in BASIC

Programming in BASIC doesn't mean that you can't find out how much memory you have left. Here's a simple routine to check the amount of memory remaining in the console:
```
80 S + 8
90 GOSUB 100
```
Run these lines at the beginning of your program (assuming the first line of the program is 100) and RUN. When the computer says "MEMORY FULL" type PRINT S. The number that is displayed is equal to the amount of bytes remaining. Of course, you'll need to REM or delete these two lines out before running your program.

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Infocom adds 2 titles to software library

Infocom Inc., which only recently started marketing its adventure and fantasy games for the TI home computer, has introduced two new titles for the TI and other computers.

They are Sorcerer and Seastalker. Sorcerer, a fantasy game, is a follow-up to Enchanter, which was introduced last fall. Seastalker is an adventure game written with the beginner in mind, according to the company.

According to Infocom product manager Michael Dornbrook, "with its focus on magic, the Enchanter series has really given players a new type of challenge."

Dornbrook notes that improvements in programming techniques permit Sorcerer to "understand" a vocabulary of more than 1,000 words. "That cappability allows Sorcerer to add substance to the Zork-Enchanter universe by supplying it with a richly detailed history and geography."

In the Zork trilogy, the company's other fantasy series, the emphasis is on exploration, treasure hunting and solving puzzles through the use of tools and physical effort.

"In Enchanter, and now Sorcerer, players advance toward their goal through the use of magical powers they acquire along the way," Dornbrook says.

He claims that Sorcerer's 1,000-word vocabulary is nearly double the size of any other interactive fiction product.

Infocom says Seastalker can be played by persons as young as nine. It is the first of a series of text adventures that the company plans for young or inexperienced adventurers.

Seastalker is a project of author Jim Lawrence and programmer Stu Galley. Lawrence has written some 60 works of fiction, including a number of ghost-written titles for such series as Tom Swift, The Hardy Boys, Nancy Drew and the Bobbsey Twins. He has also published fiction for juveniles under his own name.

Galley wrote The Witness, an adventure-mystery marketed by Infocom.

Seastalker comes with a portfolio, submarine logbook, decoder, nautical chart and a decal.

Seastalker is priced at $39.95. Sorcerer is priced at about $50 and comes with a manual, data wheel and pouch. Both games require a disk drive.

For more information, contact Infocom, 55 Wheeler St., Cambridge, MA 02138.

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