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MICROpendium

Covering The TI99/4A Home Computer And Compatibles

Volume 2 Number 4 May 1985 $1.50

Gift horses

See page 18

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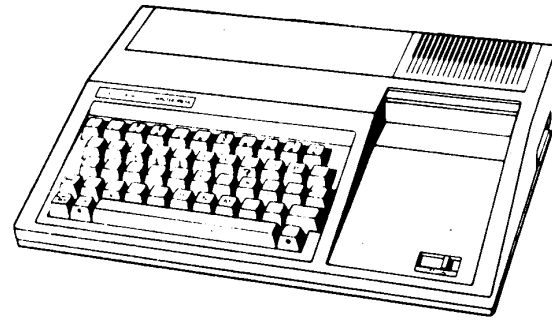

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Contents

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Laura Burns ..... Editor

Coming Next Month

—A look at the Z80A card (we hope)
—A survey of the best software for the TI that money can buy
—More PRK tricks

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Table of Contents

Group aids disabled

C-CAD helps people with special needs to get the most out of their computers ..... Page 12

Gift horses

A survey of some of the best freeware for the 99/4A ..... Page 18

PRK files' mysteries revealed

The key to everything you always wanted to know about personal recordkeeping ..... Page 26

Reviews

Character Sets and Graphics Design ..... Page 30
Draw 'N Plot ..... Page 31

Freeware (or nearly so)

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

Newsbytes

PEB cooling fans, a BBS that does a quick search, and a new Data Base Management manual from Navarone ..... Page 34

User Notes

For people in a hurry, you can speed up data to the cassette recorder and also speed up XBASIC ..... Page 35

Classifieds ..... Page 38

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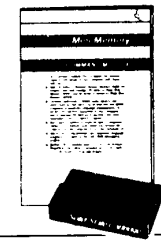
This software cartridge adds memory to your system. Totals 14K of memory (6K of GROM, 4K of ROM, 4K of RAM). Mini Memory includes a built-in battery, permitting programs and data stored in RAM to be retained even if module is removed from console.



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Comments

Mum's word on new computer

There are no spokesmen for the new computer that is supposed to be displayed at the June Consumer Electronics Show. The manufacturer, who continues to request anonymity, says no one has been authorized to speak for the company. That some information is being disseminated about it is more the result of hypothesis than hard facts. And the outlook for more information is bleak until the June CES. The manufacturer notes, with some irony, that MICROpendium will not be in a position to publish anything definitive about the new machine until after the CES because the final decisions about what will be shown won't be made until the CES starts. Talk about tight deadlines. Not even the final decision about whether to market the machine is likely to be made until after the CES.

No matter what you read about this machine, here or elsewhere, it should be taken with a grain of salt. One example: the new machine was supposed to incorporate TI's new ADVP chip. At last word, after several revisions, TI decided not to produce the chip. That left the manufacturer looking for a suitable substitute.

Another example: one source told us that the machine was in the beta testing stage in February. According to the manufacturer, beta testing has not started.

Incidentally, the nameless manufacturer anticipates showing three keyboards at the show.

SETTING THINGS STRAIGHT

In my haste to publish a review of CorComp's 9900 Micro Expansion System last month I made an error that cannot be overlooked. I bemoaned the condition of the manual that was sent to me with the box, taking CorComp to task for producing such a shabby manual for such a fine machine. Had I not misplaced the cover letter that came with the manual I would have viewed things differently. CorComp wrote me that the manual I was provided was not the final version that would be sent out with the machine to purchasers, that the actual manual had not been received from the printer.

My assumption is that it will be similar to CorComp's disk controller and RS232 manual, both of which rate an "A" in my book. Let me state unequivocally that my evaluation of the manual should be ignored, at least for now.

In order to avoid this sort of problem from being repeated, I'm delaying publication of our feature on Texnet/The Source until next month. It needs a little more work and I'd rather get it right the first time than publish a correction the following month.

FOUNDATION UPDATE

Foundation Computing is finally delivering its Z80A card. The first batch of orders was processed in mid to late April. Orders for the company's 80-column card, however, were not expected to be filled for several weeks. According to Bill Hunter of Foundation, the company had to decide which card to deliver first and chose the Z80A card. Obviously, we had not received our Z80A card in time to provide a report on it, as promised in last month's MICROpendium. Incidentally, Foundation says the CP/M card will operate with floppy disk drives that use 96 tracks per inch, as well as those that offer 48 tracks per inch. Drives used with the 99/4A use 48 tracks per inch. At 96 tracks per inch, users should have about 800 kilobytes of unformatted disk storage available. We hope to have a hands-on report in the June edition.

48 PAGES IN JUNE?

We were deluged with advertising this month but couldn't adjust quickly enough to absorb it. Thus, you see before you more advertising than ever before. If this amount of advertising holds next month, we expect to add another eight pages to the magazine. This would result in our first 48-page publication. We're excited by the prospect. Keep the articles and reviews coming, we will have a place for them next month.

BIG BLUE FOLLOWS TI?

It appears that even IBM has found a market it couldn't crack. The company's PC Junior computer apparently ran into trouble in the consumer market and has made its exit. We're not surprised. The Junior started out with enough handicaps to kill most microcomputers—who can forget the Chiclet keyboard and single disk drive capacity? The high renewal rate among subscribers of MICROpendium tells us that home computer users are sticking with the machines they originally invested in. Even those who have purchased a second (non-TI) system tell us that they aren't giving up on the TI. They continue to subscribe, even though they have become a two computer-brand hobbyist.

—JK

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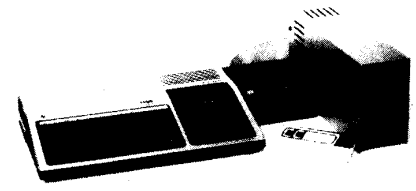

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Feedback

Teacher's problem

Help,.....help. I have a MAJOR PROBLEM with the use of my TI99/4A. I can't find two pieces of software that I need desperately.

I teach school and the two programs that I need are ones that would allow me to keep my grades on the computer and also allow me to write tests and then print out multiple versions of the same test. [Such programs] are available for the Apple and I was wondering if you knew of any source that might have these available for the TI. Employees who have written such programs, magazines, user groups, or any source would be just fine. The bottom line is getting the programs.

I have spent the last four months in this search, and have had zero success as of this date. I have reached the point of switching machines. I really like the 4A, but I need a machine that can do all the things I need it to do. I'm currently using the word processor to write and store tests in addition to lesson plans and activities for my economics and government classes.

I have [contacted numerous sources] with no success. I have called all the phone numbers for software companies the TI toll-free number person gave me. Did TI ever write a prototype that was never marketed? I need help. I've reached a dead end. Please save my sanity and my 99/4A.

Ken Stephens
Greenwway High School
Glendale, Arizona

Sticking with TI

I have been using my TI for over two years and will keep it until something better for my purposes comes along. My primary needs are for word processing and spreadsheets for doing quotations and business letters. The TI-Writer is the only word processor program on the market that gives me the speed and flexibility for writing quotations because it allows setting up value tables and can access and load entire files or sections of files.

I have looked at all the word processing programs on the market and none can match the speed of the TI program for my needs. Wordstar 2000, Cut and Paste, Bank Street Writer, etc. are all too slow and clumsy. If someone would come out with a TI-Writer program that would run on an Apple or IBM or their clones I might consider investing in another machine. Until that happens, I'll stick with the 99. By the time you read this my company will have given me an IBM PC XT that I don't even want. I have tried the IBM and have come to the conclusion that it will take me at least 50 percent longer to do what I am doing on a 99. This is progress? I know many sale engineers such as myself have standardized on the 99 because of its ease of use and flexibility. We have all come to the conclusion that the 99 was the only machine that suited our needs three years ago. Sadly that is still true today.

Ron Borst
Mt. Penn, Pennsylvania

Pirates are killers

I would like to address a problem that is continually plaguing our fantastic computer. This problem is piracy.

As readers of this magazine are aware, I am currently marketing three programs that are considered by many to be pretty good software, not the ripoffs that people have mentioned to me that come down the pike. Contrary to popular piracy beliefs, my software is not public domain and is not supposed to be distributed by unauthorized people. I know, however, that my software has entered the piracy pipeline and is now in the hands of many people who have not gotten it legally. I would like to say to the people who are doing it: "I hope a burglar breaks into your house and steals something that is very valuable to you. It is the same thing you are doing to me!"

I started this business on the idea that I had some programs that I thought were pretty good and might be of some value to other people. I have ideas for quite a few more programs written in Assembly and Pascal. I bought the P-System with hopes that software would be available for it some day. So far nothing has happened, so I will be writing some myself. So you folks that have purchased the P-System, don't give up hope.

I decided to market my utility programs with the idea that it is very nice to have all of your utility type programs on one disk. That way you don't have to keep swapping disks in and out of disk drives. With that in mind, I did not spend the time to protect the programs. I felt it more worthwhile to TI owners that I spend my time writing programs they could use to help them than it would be to spend weeks trying to outsmart the criminals. So much for good will. The low lifes have decided to take it upon themselves to distribute my software illegally. I even went as far as including the source code to my programs so people might be able to learn Assembly Language a little easier.

I would like to repeat a comment that was made to me by a pirate that approached me at the TI Faire in Chicago in November 1984. He told me that his pirating of software, that someone had spent many hours writing, **stimulates** the market. How can software piracy stimulate a market? All it does is contribute to the premature DEATH of a computer. He told me that if people get software, they will buy hardware. HOGWASH. The only thing that piracy accomplishes is to make programmers like me say "H—! with it." At that point you have just created a major void in the area that

(Please turn to Page 10)

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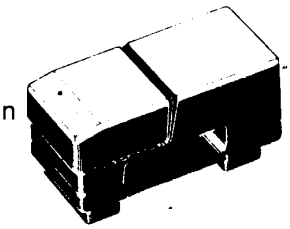
This 4-module and 4-volume instruction book series retailed at $219.80 when introduced in 1982. **TEX-COMP** has them all and is selling this entire set at the unheard of price of **$19.95**

Speech Synthesizer Required



The above 4 modules are designed to work with the TI Speech Synthesizer so that all lesson words are pronounced.

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WHERE DO I SELL ROBOTICS?

Tau Ceti, Alpha Centauri, Sirius... We could list several star systems with a favorable robotics trade, but circumstance is often the final determinator. Distance and fuel price, for instance. Or tax rates. In fact, this is just the beginning! Expected product availability, past dealings, and other cargo in your hold all play a part in your decision. As a Class 'C' trader, you depend on careful planning and meticulous attention to detail. Your survival may well depend on your ability to weigh the facts and read between the lines.

'Cargo Run' is an economic adventure set in the galaxy of the future. As a galactic trader, you explore the worlds that make up the Galactic Traders Union, buying and selling various cargos and staying one jump ahead of your creditors. A good eye, sharp wits, and an entrepreneurial spirit are a must!

Cargo Run is available for the Apple //+, //e, and //c and for the TI99/4A. TI version requires extended basic (disk also requires 32K). 'Cargo Run' can be purchased from your local retailer or directly from Redwick ($29.95).

REDWICK

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Feedback

(Continued from Page 8)

makes computers tick, software. If programmers say "H—! with it," there will be no new and better software and with that people will get rid of their machines and go with another model. Then there you have it. THE PREMATURE DEATH OF A COMPUTER DUE TO THE SELFISHNESS OF PEOPLE WHO THINK THEY ARE STIMULATING THE MARKET.

I would like to say that the only reason this computer has held on for so long is because of the goodwill and grace of the honest people. Thank God there are more of them than there are low lifes.

I would like to make a plea to the pirates out there. Software for the TI computer is already very low priced. Better quality software is coming out regularly and the price stays low. Why do you folks find it necessary to try and ruin a good thing? If the TI was not around, you would be paying big bucks for software for other machines. Why are you trying to KILL this computer? I really don't understand it. The mad TI exodus rush is over and software, quality software, is again available for the computer. Why don't you folks try contributing to the long life of this machine?

I would like to mention that if someone purchases my software legally, they get full update and technical support as well as a money-back satisfaction guarantee. I don't know of any software company for any computer that offers that. To all of you honest TI users, think about that when you are offered a pirated copy of my software. If you buy it from a pirate, you will get no support as well as no guarantee. I don't know of any pirates who guarantee the stuff they steal.

Finally, we don't want to prove the industry right by letting the pirates kill our machine. So ignore the pirates and try to support those people who are working to make one of the most powerful home computers SURVIVE!

Donald M. Thomson
M & T Utilityware
Muskegon, Michigan

Heat sinks

In the March 1985 User Notes, Wayne White of Los Angeles wrote that the black and "silver" 99/4A has blackened steel heat sinks. This is incorrect. In fact, lightly scratching the black heat sinks reveals a shiny aluminum surface beneath. These heat sinks are not attracted to a magnet. The black heat sinks are aluminum dyed black. These heat sinks are superior because roughened black surfaces radiate heat most rapidly of all surfaces. Thus he recommends removing the better heat sinks for a less expensive and shiny heat sink, a poorer radiator of heat. Furthermore, it is simple to add a 1800 ohm resister in series with an LED to keep that feature.

However, you are correct in cautioning readers about making changes in hardware.

Sidney P. Harris
Bayside, New York

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

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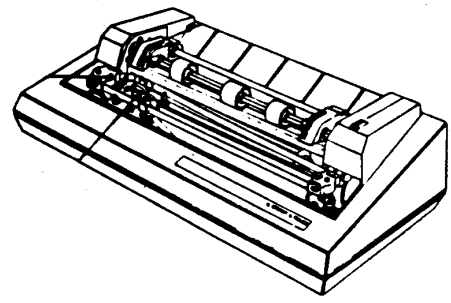

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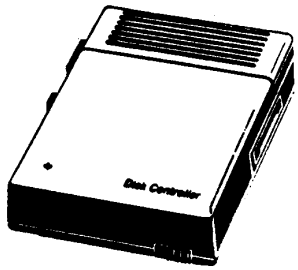

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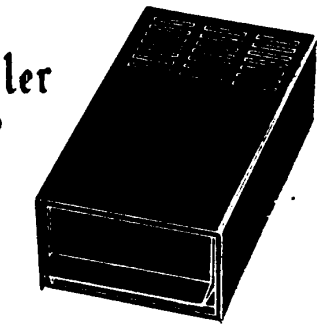

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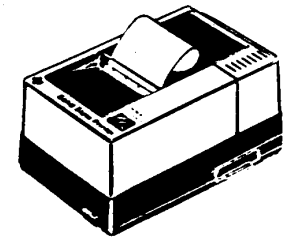

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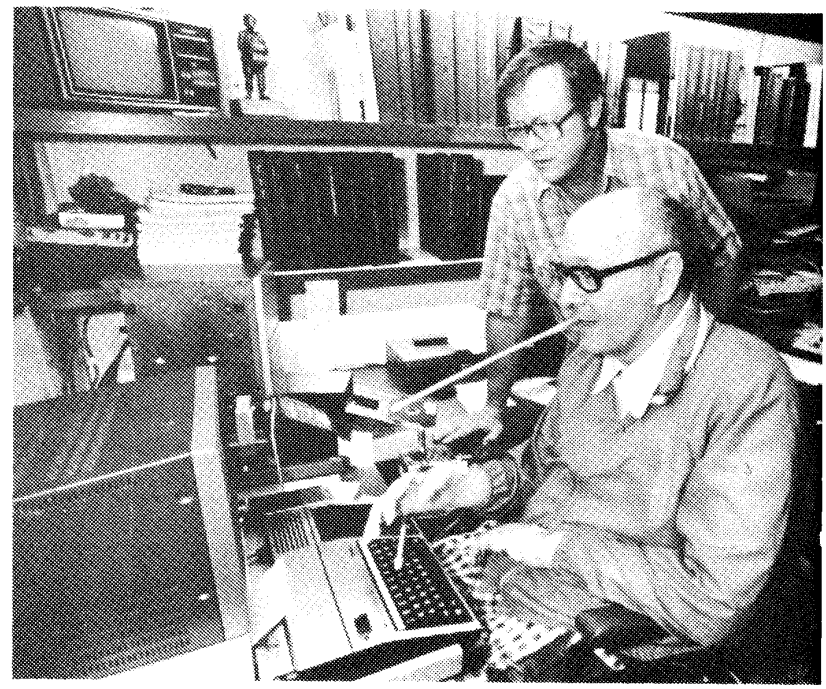
Group aids disabled

By LAURA BURNS

Jack Kishpaugh and some of the people he knows have made modifications to their computers with "strings and lucite, masonite and Elmer's glue."

Necessity, just like the old proverb says, has been the mother of their invention.

Kishpaugh is a quadriplegic. About 3½ years ago, he was on the board of directors of the National Paraplegia Foundation, and he entered a contest sponsored by Johns Hopkins University on Personal Computing to Aid the Handicapped. He was one of the winners with his modifications to the TI99/4A.



Jack Kishpaugh with Russell Hollingsworth, a computing faculty member from Tarrant County Junior College and a C-CAD board member (Photo—Dallas News)

"At the national finals I had a great opportunity to see how computers of all kinds could help people with all kinds of disabilities," he says.

Today, he is associated with the Center for Computer ASsistance to the Disabled in Arlington, Texas (between Dallas and Forth Worth).

Persons with any type of disabiity, or their relatives, may contact C-CAD, 2501 Avenue J, Arlington, Texas 75011, or call 817-640-6613 (Metro).

Texas Instruments Corp. will assist a disabled person who submits a written request fully outlining a statement of need and including a return address and phone number.

Kishpaugh, however, says that TI forwards requests to C-CAD. The TI address is Texas Instruments, Attention Greg Nesteby, P.O. Box 53, Lubbock, Texas 79408. Kishpaugh had nothing but praise for TI's cooperation with the group. Members have all kinds of machines, he says, but at least half are TI users.

He can operate his computer with either an orthotic splint attached to his right wrist or with a mouth stick. On his 99/4A, the shift, control and function keys operate like the alpha lock key, because "when you have to press two keys at one time you have to lock one key up."

Kishpaugh uses a number of commercially produced aids. The Myarc WDS100 Winchester disk drive (which is no longer being produced) "makes all the difference in the world." It saves him loading and unloading floppy disks, which he does horizontally.

"My TI expansion box stands on end," he says. "This makes the drive horizontal. I can load and unload disks from two file drawers with a mouth pick."

Input from disabled users has resulted in many changes to equipment that have become standard.

"Manufacturers of computers have been very responsive in their human engineering, and in many cases, many things we do will not inconvenience a able person," he says.

The Navarone Widget, which slide in the GROM port and allows up t three cartriges to be plugged in at once is a convenience to persons such a him, he notes, with the reset butto right on top.

"Navarone let us experiment withi before it became generally available, he notes.

Sliding the cartridge up the ram and pushing it into the GROM por was what he had to do before th Widget was available.

"With Navarone, you don't have t change very often," he notes.

He says that many computers no have the power supply switch on top s it can be operated with a mouthpiec

(Please turn to Page 14)

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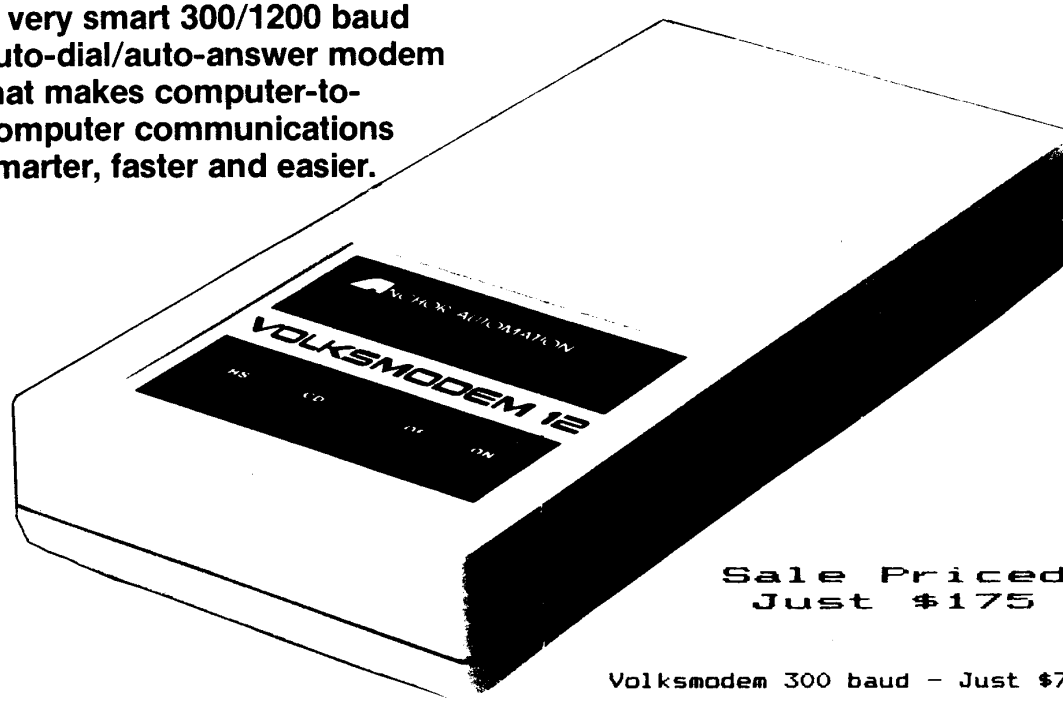

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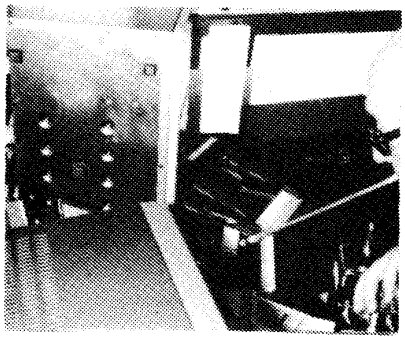
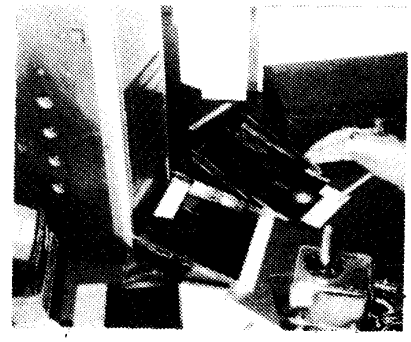
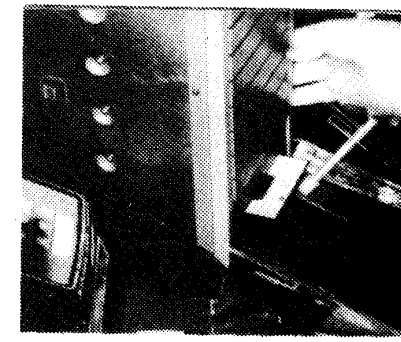


With his peripheral expansion box placed on its side,





Jack Kishpaugh is able to insert disks horizontally, using a ramp.

(Continued from Page 12)

"We (disabled persons) deserve credit for some of these innovations," he says. Another innovation he mentions is status lights which allow a person to check whether peripheral devices such as printers are turned on, "so you don't have to wheel yourself all over the room."

Employability is the key goal of C-CAD, Kishpaugh says, citing cases such as a man who has been totally paralyzed from the neck down who runs a collection agency from his bed with a mouth stick, and the writer with cerebral palsy who, with special software, can write up to 500 words with two- and three-letter codes.

"This has speeded up her text generating ability 45 percent," Kishpaugh says. "As she learns more codes, it will speed it up even more."

The C-CAD office is staffed only part-time, but callers may leave messages on the answering machine, he notes. Callers outside the Dallas/-

(Please turn to Page 20)

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C-CAD—

(Continued from Page 14)

Forth Worth metro area are asked to leave an address rather than a telephone number. C-CAD sends a questionnaire to them, asking "a modest contribution of $15."

After the questionnaire is returned, it is given to "someone in their area of disability," he says.

The board of directors includes two blind members, a person with muscular dystrophy and the dean of the Department of Special Education at The University of Texas at Dallas. C-CAD also helps persons with speech and hearing disabilities.

"A lot of times, when a person becomes disabled and they see us, it is a worse disability than they have," Kishpaugh notes. "When we show them what can be done, it gives what a health professional says a lot of credibility."

Paint 'n Print is released by Navarone

Navarone Industries released their new Paint 'N Print graphics cartridge in April, designed to operate on a single console requiring only a joystick or trackball.

The program is said to provide the ability to save pictures to either cassette or disk and to magnify sections of the picture so that the user can gain control over each tiny pixel for fine resolution work.

The program is designed to print out the user's "works of art" in color with the Axiom GP-700 color printer. It will also print a shaded black-and-white on the GP-100 graphics printer.

The Paint 'N Print cartridge retails for $39.95. Further information can be obtained from Navarone Industries, Inc., 19968 El Ray Lane, Sonora, CA 95370 or (209) 533-8349.

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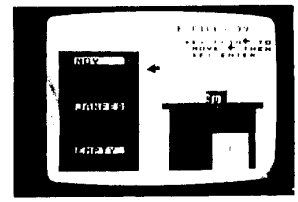

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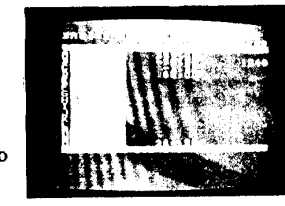

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Gift horses

A survey of some of the best freeware for the 99/4A

By RON ALBRIGHT

Where can you get a full-featured word processor, two disk copiers, two disassemblers (one Extended BASIC, one Assembly Language), a screen-graphics development system, a utility to help list multiple-statement program lines and program variables and a state-of-the art terminal emulator, all for less than $80.

Well, you just have to look around and discover the greatest phenomenon to hit the "orphanage" since users groups! It's called "share-ware," "fairware," "radical distribution" or, most commonly, "freeware." What is it? Well, when a talented programmer completes what he considers a valuable program he has the option of marketing his program by himself or another party and expend money for advertising and production, certainly not easy for an individual. Or, he can declare his product "freeware" and leave the distribution and advertising to others. The philosophy of "freeware" states that you have developed what you think is a marketable and valuable program, you want to share it with all and you rely on the honesty of others to reimburse you for your efforts. Users can acquire the program through you or copy from a friend and, if they think the program is inherently valuable, they should forward reimbursement to you. The concept is certainly unique to our community but it is proliferating of late. I plan to briefly review a few of the programs available through freeware (certainly not claiming an exhaustive list) and, by doing so, encourage you to participate in this venture and support the producers in this venture. If we don't support these programmers, the "experiment" will fail and we will ALL be at a great loss both in products and, in my opinion, self-esteem.

I have the following freeware products and will confine my review to them:

Disk Copiers

1. MassCopy—Steve Lawless ($10)
2. Super Disk Duplicator—Tom Knight ($10)

(Please turn to Page 19)

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(Continued from Page 18)

Disassemblers

1. X_DISASM—Frederick Hawkins ($10)
2. Disassembler—Marty Kroll Jr. ($10)

Utilities

1. Neatlist—Danny Michaels (up to $10)
2. TK Writer—Tom Knight ($7.50)
3. Sprite Builder—John Tayler (up to $10)

Emulators

1. Fast Term—Paul Charlton ($10)

MASSCOPY—Steven Lawless

To my knowledge the first large-scale freeware venture. This "disk cloner" has gone through several versions and is now presented as VERS 3.0. It still has features that the "high-priced spreads" lack—copies to two drives at once, copies proprietary and "short-sectored"(e.g., initialized to 35 tracks instead of 40) disks, initializes the copy disks and has on-disk documentation and runs from any of the "usual" three cartridges (i.e., XBASIC, Editor/Assembler, Mini-Memory). One of the TRULY unique features of MassCopy is that it makes use of the 128K card from Foundation and will copy a disk in (get this!) ONE PASS!

SUPER DISK DUPLICATOR—Tom Knight

One I'm almost positive you haven't seen! This little beauty is a new one from the man most famous for TK Writer (see below). It is a nifty utility which has a feature heretofore seen only with Nibbler (a commercial $35+ copier). SD will start and stop copying at the sectors you specify! You set the start sector and stop sector (input in HEX) and away it goes! Will not initialize a disk and copies to one drive only. Versions for three cartridges. As fast as any. Copies proprietary and "funny sectored" disks. Smartly, has documentation on disk.

X_DISASM—Fredrick Hawkins

Another one I'm fairly sure you haven't ventured upon, but another pearl! In an ocean of opinion that holds that "if it isn't Assembly Language, it isn't any good," this program/programmer proves the fallacy of this thought. Written in Extended BASIC, this is as full-featured a disassembler utility as you can find in ANY language. It allows output to three files besides the screen and OPENing and CLOSing them at any time. Output is in convenient D/V 80 format. Further, the output can be formatted in any three outputs: Assembly listing (jumps decoded to an absolute address), Standard screen (compacted for printer output) and Compilable source (provides a blank space for labels and DEFs and option for any address in memory (except GROM). "Bells and whistles" include a disk catalog and a HEX-to-DEC converter. The documentation comes from the author in a 21-page pamphlet which is well written and FULL of hints and tips. While limited in speed, this program is absolutely superb!

(Please turn to Page 22)

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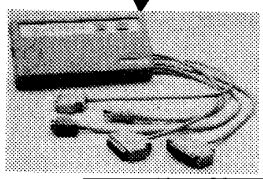

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INVENTORY

This diverse program provides for both inventory and order entry management. Inventory allows for creation and maintenance of up to 1500 inventory items, including part numbers, descriptions, five different prices, and eight other options. Order entry allows for invoicing, posting to AR and GL, pick tickets, stock status, sales journals, and others. Of course, printouts of all transactions and journals are available.

MAIL LIST

Mail List virtually eliminates costly labor expense and the tedium of constantly dealing with a mailing list. ML offers 11 fields of data input relating to each name as defined by User. Mail List employs search function, zip code and alpha sorts, accesses TI Writer, has a 40 column text mode, edits data before entry, and many additional functions. This mail list does just about anything imaginable for data manipulation.

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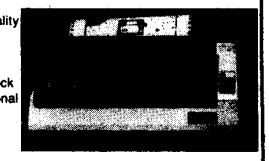

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Requires custom printer cable. **(UNI 110)**

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Requires custom printer cable. **(UNI 110)**

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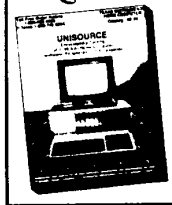

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Requires: Memory Expansion, Disk System

PHM 3113 ..... **$39.95**

GIFT HORSES—

(Continued from Page 19)

DISASSEMBLER—Marty Kroll Jr.

This 100 percent Assembly Language full-featured disassembler has the following features: disassembles in either mnemonic instruction, text or data format; outputs to screen, printer or disk (in convenient D/V 80 format); output of SOURCE file can be directly assembled with Editor/Assembler; uses the REF/DEF table to compare entries and, if match is found, entry name is placed in the comment field; operand for jump instructions are relocatable. A marvelously efficient AL programmers' utility and debugging device. It is currently available for downloading from CIS and the TI Forum.

NEATLIST—Danny Michael

A pure utility—a programmer's program—an Extended BASIC user's dream come true! All these superlatives apply to this program. Neatlist is well-described in its name—it takes a jumbled, multistatement, multivariabled XB program and produces a line-by-line listing to printer (or disk) in clear and even user-prompted format (e.g., only the lines you want, special printer codes sent to printer). FURTHER, the program gives you a variable reference for your program producing either a simple list of the variables used OR a variable list AND the lines that contain them; variables in subprograms are listed separately from those in the main program. Full Assembly Language speed, and includes the fully-commented source code. Documentation is extensive and on disk. If you send for this pearl and forward an initialized disk, Danny will also probably send his amazing public domain screen dump which is better than **ANY** commercial dump on the market today—free!

TK WRITER—Tom Knight

What can you say about a program which enables you to load a $100 word processing program from XB when you previously had to switch cartridges to the TI Writer cartridge? This loader will load the EDITOR, FORMATTER or UTILITY functions of TI Writer without the cartridge. There is a small trade-off: since the EDITOR program requires access to the TI-Writer cartridge to "Show Directory," you are unable to use this function when the word processor is loaded without the cartridge. CAUTION: If you do try to use "SD" and have a night's work in memory and unsaved, KISS IT GOODBYE! "SD" will return you to the XB title screen. Also, to load another of the TI-Writer programs (e.g., go from EDITOR to FORMATTER) you have to reload the TK WRITER loader. Admittedly tedious, but if you want to save the cartridge-swapping, it is well worth it! And if you think that is a problem with Tom's code, remember the $30 program on the market that does the same thing has the same inherent problem! Source code for the program is in our Forum (XA3) and it can be reassembled for use with the E/A or MiniMem cartridges as well. Once the TI-Writer programs are loaded by Tom's marvel, they function EXACTLY (except for SD) like they are running with the cartridge—absolutely no difference.

SPRITE BUILDER—John Taylor

This program is the closest thing to a perfect program I have yet to see. John has been writing, revising and expanding this program for well over two years. It is full featured with optional speech to read the CHAR CODES to you, writes CHAR codes to disk in MERGE format for use in your own programs without having to rewrite the program lines and has 22 active keys to turn your graphics in any direction, inverse the image and even do animation by placing sprites in the on-screen view boxes and watch them alternate images. The program now features Assembly Language routines to handle the previously-slow displaying and recalculation of the 64-decimal CHAR codes after manipulating the graphics characters; thus, you can invert the image and the code is recalculated in about three seconds! As an added bonus, John provides a set of 127 predefined graphics characters from apple to spiders designed by Pam Taylor, his artist wife! Thus, this is a full programming system for graphics generation. If you use graphics, this program will make it (FINALLY!) easy.

FAST TERM—Paul Charlton

I have to tell you about this program, though the details are a bit sketchy. The program IS available for downloading RIGHT NOW on CompuServe's TI Forum. It is a 100 percent AL full-featured telecommunications emulator which features reliable data transmission up to 9600 baud, spooling to printer, toggle 40-80-column displays, a WINDOW-BACK function allowing you to page back through your downloaded files (like TEII, but up to 12K of data!), a 12K buffer which can be opened and closed to accept data wihtout erasing the buffer (allowing selective data entry

(Please turn to Page 24)

Paul Charlton, 1110 Pinehurst Court, Charlottesville, VA 22901
Frederick Hawkins, 1020 N. Sixth St., Allentown, PA 18102
Tom Knight, 7266 Bunion Dr., Jacksonville, FL 32222
Marty Kroll, 218 Kaplan Ave., Pittsburgh, PA 15227
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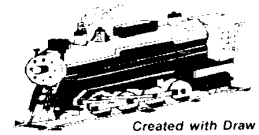

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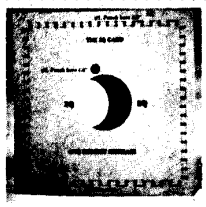

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GIFT HORSES—

(Continued from Page 22)

into the buffer), full ASCII uploading facility. This emulator is THE MOST full-featured emulator I have seen, and, best of all, Paul plans continued updating with adding true TEII transfers and the updates will be available for $3.50! It is as good as PTERM now and promises to be better soon.

Here's the "sketchy" part: The program is available now on CIS free for the downloading, but Paul is at school and is unable to accept disks/postage for copies of the program unless $10 comes with the disk. He wants to share the program but just doesn't have time with school to copy a lot of disks without the accompanying money. I suggest you get it from CIS or write Paul for additional information about the program before you send disks. It is worth getting!

Well, there you have it, a capsule summary of some of the best software available for our machine. Best of all, you can try it before you "buy it"! Get the programs from the Forum, a friend, a users group or the programmer and try them out. IF you like them (how could you NOT?) send the programmer his just deserts—what he suggests or what you think it is worth. BUT SEND SOMETHING! Even a postcard saying "I love your program. I'm broke! If and when I get the money, I'll repay you—but for now, THANKS!" would mean a lot to these "givers." But if you don't respond, guess what these talented guys will be doing this time next year? They'll be programming for IBM or Apple at $50 to $500 a program instead of "giving" their art away! For all our sakes, DO SOMETHING! Keep programmers programming—show them they are appreciated!

Wrong number for BBS reported

Author Ron Albright writes us that in his article "Touring the Boards," which appeared in the March MICROpendium, he listed the home phone number of the Sysop, Steve Flanagan, rather than the number for the Long Island BBS.

Flanagan's mother, he tells us, is tired of the phone ringing. The real number for the Long Island BBS is (516) 475-6463.

Also, it was an error to say that TI-BBS was written and sold through the Chicago Users Group. Actually, it was written by, and is sold through, TI-West, data line (312) 766-2797 or voice line, (312) 860-7075.

SST Expanded Basic Compiler System

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A second benchmark program appeared in the November 1984 issue of the MICROpendium (page 22). This program took:

209.4 seconds in *TI BASIC*
219.6 seconds in *TI EXTENDED BASIC*
7.2 seconds in *TI FORTH*
4.9 seconds in *WYCOVE FORTH*

2.5 seconds in *SST BASIC* or *EXPANDED BASIC*

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PRK BASIC offers file translations

By LAURIE SMITH

It is a simple task to write a program to store, sort, retrieve, summarize and print data for one application. After a while, though, you may find yourself with dozens of similar programs and dozens of different files hiding away on disks somewhere. At this point, the user of a Personal Record Keeping module can be a very wise decision. Suddenly one very versatile program which does not have to be located on a disk can take care of many different tasks. Saving all PRK files on one disk is simple and efficient.

If you are one of the many people who have a PRK module, there may be some additional bonuses in store for you. If you insert the cartridge and select TI-BASIC, there are some special subprograms available which can be very useful.

Anyone who has a PRK module and is considering buying the Extended BASIC cartridge for its ACCEPT AT and DISPLAY AT commands may want to reconsider. These commands, which eliminate scrolling caused by the use of the PRINT statement, are available under PRK BASIC.

For example, if you wanted to display the question "DO YOU WANT TO PLAY AGAIN?" on row ten at column 2 and accept a response at column 29, you could use:

```
100  CALL D(10,2,26,"DO YOU WANT
TO PLAY AGAIN?")
110  CALL A(10,29,1,c,v$)
120  IF C < > 1 then 110
130  IF V$="Y" THEN 500
140  IF V$="N" THEN 600
150  GOTO 110
500  REM PLAY AGAIN
600  STOP
```

Another useful bonus of the PRK module involves the use of an already established PRK file. If you would like to access a PRK file in a BASIC program it can be done using

(Please turn to Page 27)

```
10 REM   THIS PROGRAM TAKES A PRK FILE AND WRITES TWO DATA FILES WHICH CAN BE AC
CESSED IN TI BASIC
20 REM   THE FIRST IS A HEDER FILE, THE SECOND IS A DATA FILE
30 REM   WRITTEN BY TEXAS INSTRUMENTS WITH PERMISSION GIVEN TO SHARE
40 REM   CONTRIBUTED BY
50 REM   LAURIE H. SMITH
60 REM   SPARTANBURG SC
70 REM   BEFORE RUNNING, EXECUTE THE FOLLOWING:
80 REM   CALL FILES(1)
81 REM   CALL P(10000)
82 REM   NEW
89 REM   CHANGE PRKFILE IN LINE 100 TO YOUR FILE'S NAME
90 REM   ****************
100 CALL L("DSK1.PRKFILE",C)
110 IF C=0 THEN 540
120 OPEN #1:"DSK1.PRKHEADER",SEQUENTIAL,INTERNAL,OUTPUT,VARIABLE
130 CALL H(1,5,0,F)
140 CALL H(1,5,0,F)
150 CALL H,1,6,0,R)
160 PRINT #1:F$,FR
170 PRINT F$,F,R
180 FOR I=1 TO F
190 CALL H(1,9,I,F$)
200 CALL H(1,10,I,T)
210 CALL H(1,11,I,W)
220 IF T<>1 THEN 250
230 S=S+W+1
240 GOTO 260
250 S=S+9
260 CALL H(1,12,I,D)
270 PRINT #1:F$,T,W,D
280 PRINT F$;T;W;D
290 NEXT I
300 CLOSE #1
310 OPEN #1:"DSK1.PRKDATA",SEQUENTIAL,INTERNAL,OUTPUT,VARIABLE S+2
320 FOR I=1 TO R
330 PRINT I
340 FOR J=1 TO F
350 CALL H(1,10,J,T)
360 IF T=1 THEN 430
370 CALL G(1,I,J,C,D)
380 IF C=0 THEN 400
390 D=-9.9999999999999E+127
400 PRINT #1:D,
410 PRINT D;
420 GOTO 480
430 CALL G(1,I,J,C,F$)
440 IF C=0 THEN 460
450 F$=" "
460 PRINT #1:F$,
470 PRINT F$;" ";
480 NEXT J
490 PRINT #1:" "
500 PRINT
510 NEXT I
520 CLOSE #1
530 STOP
540 PRINT "ERROR IN LOADING PRK FILE!!"
550 STOP
```

PRK FILES—

(Continued from Page 26)

some special PRK BASIC commands to translate the file.

For example, suppose you put a mailing list on a PRK file and would like to print it on labels. Using the PRINT command under PRK, only a very awkward format will result. If, on the otherhand, you translate the PRK file to a BASIC data file, it is fairly simply to write a program to

(Please turn to Page 28)

```
10 REM  THIS PROGRAM TAKES A HEADER FILE AND A DATA FILE AND WRITES A PRK FILE
20 REM  THIS PROGRAM WAS WRITTEN BY TEXAS INSTRUMENTS, BUT PERMISSION WAS GIVEN
 TO SHARE IT
30 REM  CONTRIBUTED BY LAURIE H. SMITH
40 REM  SPARTANBURG, SC
80 REM  ****************
100 OPEN #1:"DSK1.PRKHEADER",SEQUENTIAL,INTERNAL,INPUT ,VARIABLE
110 INPUT #1:F$,F,R
120 PRINT F$,F,R
130 CALL H(0,1,0,F$)
140 FOR I=1 TO F
150 INPUT #1:RECI:F$,T,W,D
160 PRINT F$;T,W,D
170 CALL H(0,9,I,F$)
180 CALL H(0,10,I,T)
190 IF T=4 THEN 220
200 CALL H(0,11,I,W)
210 IF T<3 THEN 230
220 CALL H(0,12,I,D)
230 NEXT I
240 CLOSE #1
250 OPEN #1:"DSK1.PRKDATA",SEQUENTIAL,INTERNAL,INPUT ,VARIABLE
260 FOR I=1 TO R
270 PRINT I
280 FOR J=1 TO F
290 CALL H(1,10,J,T)
300 IF T=1 THEN 380
310 INPUT #1:D,
320 PRINT D;
330 IF D=-9.9999999999999E+127 THEN 360
340 CALL G(0,I,J,D)
350 GOTO 440
360 CALL G(2,I,J,D)
370 GOTO 440
380 INPUT #1:F$,
390 PRINT F$;" "
400 IF F$=" " THEN 430
410 CALL G(0,I,J,F$)
420 GOTO 440
430 CALL G(2,I,J,F$)
440 NEXT J
450 INPUT #1:F$
460 PRINT F$
470 NEXT I
480 CLOSE #1
490 CALL S("DSK1.NEWFILE",C)
500 IF C THEN 520
510 PRINT "ERROR IN SAVING PRK FILE!!"
520 STOP
```


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Tex-Comp has two new products

A new terminal emulator and a new word processor are now available from Tex-Comp.

The company now offers TE 4 Plus and 99-Writer II. Each of these two programs is available for $19.95 postpaid from the California-based company.

TE 4 Plus is said to be an all new high-speed terminal emulator which is written in assembly language with a full menu-driven protocol setup, including port number, baud rate (110 to 9600), parity, stop bits, data bits and full or half duplex and automatic line feed.

According to Jerry Price of Tex-Comp, incoming text can be saved in a 24K buffer (built-in) that can be dumped to disk or printer with user-selected record length and optional filtering of line feed and other control characters.

"It also has the capability to upload text files from a disk drive and also simultaneously to receive incoming text on the computer and printer," Price said. "A true lowercase character set is also built in."

Price said the program loads on Extended BASIC, Editor/Assembler or Mini-Memory.

TE 4 Plus was developed by Starsoft, the developer of the Nibbler copy program.

Price called 99-Writer II, a "second-generation of TI-Writer. We have taken the original TI-Writer, added all the upgrades that TI has subsequently released and then further refined the upgrades with custom character sets, including true lower case. In addition, it loads with a menu-driven assembly language program on Extended BASIC, Editor/Assembler or Mini-Memory, eliminating the need for any Ti-Writer module."

He said the self-contained program is fully compatible with Dragonslayer's 99/4A Spell Check proofreading program, and "comes with brand-new, user-friendly documentation."

PRK—

(Continued from Page 27)

print it on labels.

Or, suppose you would like to print a report with some special titles and totals. This is also possible. Or you could combine two PRK data files into one file. You could even prepare a PRK file for use in another program.

The following is an example of a PRK file, a stamp collection record, which is translated to a data file and then printed in a special format. In this case, the PRK cartridge could print ony 80 columns of information one one line, Using the print program, a printer with condensed print could print the entire record on one line.

Before running the first program, the following three BASIC commands must be executed: CALL FILES(1), CALL P(10000) and NEW.

Then load the program. You must make the necessary changes to accomodate your PRK file. In line 100, change PRKFILE to the name you used for the file, In my case, I called it DSK1.STAMPS. (Use CS1 if using a cassette file.) Note that after the program runs, you file will be a data file called DSK1.PRKDATA If you want it to have a different name, change line 310. For my purposes, I delete the file DSK1.HEADER. It can be useful if you do not know the file layout, but it is easier if you know what you are working with.

Software Specialties closing out games

Software Specialties Incorporated in Evergreen, Colorado, is having a closeout sale on all its TI software.

Glen H. Groves, president of the game-making company, says that "sales really dropped. We are trying to get out what we can."

He notes that the company experienced a lack of support "possibly because of the type of product we have. I talked to some people with games who are having similar problems."

He says he hopes some TI games will continue to be manufactured.

"I love that little machine," he says.

He notes that he and his wife started a business on the TI computer about 1980.

"We managed to convince oil companies we could keep inventories of seismic data," he says. "That went crazy. We quit our jobs and expanded."

Data compiled on TIs was sent to an Apple after a while, he says, because of the double-sided, double-density disks. They also began keeping mailing lists for doctors, keying them on TIs and storing them on the Apple. They continued this and the game manufacturing until recently.

"We just recently sold that (data) part of the business," Grove comments. "We're doing just a few small mailing lists on the TI."

They have taken salaried jobs again, he says.

Games available are TI Toad, Burger Builder, Midnite Mason and Micro Pinball, all assembly language, available on disk using Memory Expansion and Extended BASIC to load. Midnite Mason is also available in cartridge. The games are $10 apiece. To order write Software Specialties Inc., Box 3304, Evergreen, CO 80439.

Myarc card has personality

Myarc Inc. can sell users a "personality card," the same card available with the Winchester hard disk. The personality card is used to interface a hard disk drive with the TI peripheral expansion box.

(Please turn to Page 32)

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Character Sets and Graphics Design

Software with lots of characters

By ROGER KELM

Some strange things have been happening lately. I got an advertisement in the mail. Nothing new in that. What made this occurance unusual was that it was offering software for the TI99/4A computer.

The software was called "Character Sets and Graphics Design." It could be ordered from Dave Rose, 2781 Resor Road, Fairfield, OH 45015-5053. The cost was $17.95.

More unusual was that I actually ordered the merchandise. But the event that made the entire episode truly unique was that I received the goods in about one week and I had sent a **personal** check! That was the first of a number of very favorable impressions.

When I opened the package I was surprised to find:

1. A written 90-day guarantee.
2. A clearly written letter explaining what I had received and how to put it to use immediately.
3. A statement to the effect that if I accidentally erased any of the disks to merely return it/them for a free replacement.
4. A handwritten receipt and "Thank You."

I have never heard of anyone in the software business treating a customer that way. But I am sure I could get used to it.

The Software is supplied on three 5¼" diskettes in a sturdy plastic mailer. One disk contains detailed instructions. Simply load it, follow the prompts and your printer proceeds to print out 10 pages of clearly written instructions. The other two disks are a Program disk and a Data disk.

Review

Report Card

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

Cost: $17.95

Manufacturer: Dave Rose, 2781 Resor Road, Fairfield, OH 45014-5053.

Requirements: Console, memory expansion, Extended BASIC, disk drive or cassette recorder, printer.

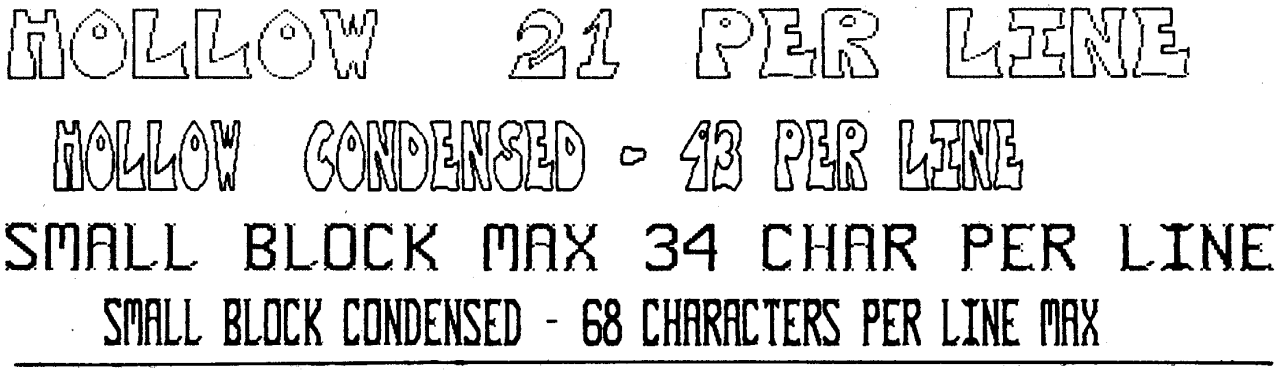
The programs include 10 type styles (fonts) as well as a Graphics Design Program to design your own fonts. The program also will enable the user to design pictures and picture frames. The pictures and frames may be printed together or separately. This will permit the user to create framed messages or posters.

The program disk was so "friendly that I was able to create a fairly decent poster on the first try without reading the instructions beforehand! Messages may be printed line by line, centered or not. Because of the way a message is entered, the user may visually justify or otherwise position entries on a line as desired.

There are several sample files provided by the author that let the user print out a picture right away. As the user progresses, original creations may be done and saved to disk for future use. Although I have used some faster graphics creation programs, none were as precise as this one. The creation process involves reserving the proper size array and then mapping, bit by bit, one 8x8 square at a time. The process is time-consuming but simple. It may be easily edited.

The real power or versatility in the picture mode is that any picture (created or called up from the disk) can be printed: As is, double size, reversed (black becomes white and vice versa), swapped (left for right) or inverted, an option to use "other" printer parameters (i.e. from Epson to Prowriter, etc.

The Frame program allows the creation of almost any size frame. A menu offers two options: 1—All the same (block design) and 2—All different. Frames can be printed alone or attached to pictures. If the user has a



Draw 'N Plot

Commanding graphics

By KEN CHANDLER

There was a time not long ago when graphics programs for the TI99/4A were few and far between. The few that could be found were expensive and difficult to use. One of the first of a new breed of easy-to-use, cheaper graphics programs on the scene was Draw 'N Plot. With it, you can create drawings, graphs, designs and illustrations, print them on a printer, save them to disk or send them via a modem to another computer. The thing that made Draw 'N Plot unique, though, was the ability to use a new set of graphics commands from within a program. In this sense, Draw 'N Plot is like a computer language such as BASIC or Logo. Although there are now a plethora of graphics programs on the market, Draw 'N Plot is still one of the few that offer this feature.

Performance: This software loads 11 Assembly Language subroutines into expansion memory where they reside, ready to be CALL LINKed from an Extended BASIC program. These routines use a 6,144 byte area of memory as a plotting surface with dimensions of 256 dots horizontally (X-axis) by 192 dots vertically (Y-axis). Coordinates (0,0) are at the bottom left corner of the screen. The routines use the bitmat mode of the TMS 9918A video processor and use a large chunk of memory. Because of this, your program must not be larger than 17,000 bytes or the plot may overwrite your program.

The subprograms are: GCLEAR—clears graphics area; MOVE—moves "pen" to different location on plot; DRAW—same as MOVE but draws as it moves; LABEL—allows you to add text to your drawing; SHOW—displays plot on screen; EDIT—used to draw on screen with joystick; GDUMP—dumps plot to printer; GSAVE—dumps plot to disk or other RS232 device; GLOAD—loads previously saved drawings; CIRCLE—draws circle; SQUARE—draws square.

Additionally, the EDIT subprogram, which is menu driven, has options to write or erase a line, draw a straight line between two points, draw fast or slow, draw circles and squares, fill in a bounded area and change the foreground and background colors. All this can be done in real time, on the screen, with a joystick.

For programmers, the ability to call these graphics routines from withing programs can be a boon. You could really jazz up your programs with graphics. The GDUMP subprogram would allow you to print screens automatically. You could call in screens from disk periodically and mix text and graphics. This would be much easier than laboriously defining graphics using CALL CHAR statements. Also, because these subroutines are written in Assembly Language, the graphics are faster and far superior to what you could do from Extended BASIC.

However, no program is perfect and I can suggest some enhancements. Screen colors cannot be changed dynamically (you must go back to the MENU) and the whole drawing must be one foreground and one background color. This makes for some pretty dull drawings. Also, there are no provisions for changing

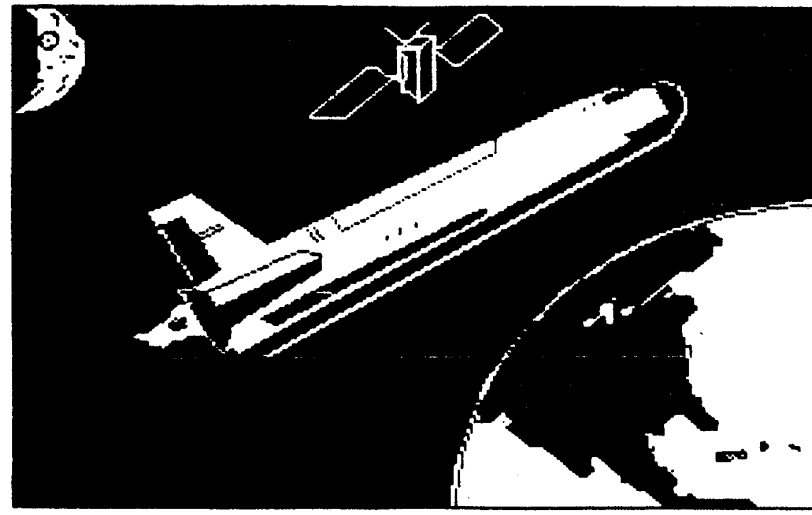
(Please turn to Page 32)

Review

Report Card

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

Cost: $39.95
Manufacturer: Quality 99 Software, 1884 Columbia Rd. #500, Washington, D.C. 20009
Requirements: Console, monitor, disk, memory expansion, Extended BASIC; joystick, printer optional



C.G.S.D.—

(Continued from Page 30)

picture in memory and wants it framed, he can leave the picture, create the frame character design, go back to the menu and print the picture with frame. The user needs to create only one design for #1 or for #2 create the design for the top left, top middle, top right, left middle, right middle, left bottom, middle bottom and right bottom each in an 8x8 block.

The program then AUTOMATICALLY calculates the size of frame that is needed and attaches it to the picture in memory and prints it. The middle portions of the top, sides and bottom are duplicated as needed to fit the picture.

Characters (letters, etc.) may be created bit by bit also: Anything the user can dream up that fits in three blocks across by four down. Up to 70 characters per character set may be designed. Dave Rose has provided some incentive to do some actual font creating. He has stated that anyone sending him a **NEW** character set will receive another diskette from him FREE when he gets enough sets to put on a diskette!

When you order Character Sets and Graphics Design, be sure to tell Rose whether you are ordering the cassette or diskette version and what type of printer you have (Epson and compatibles or Prowriter and compatibles. Also, don't forget your check for $17.95. It is well worth every penny!

I have had my "C.G.S.D." (as they are labeled) disks almost two weeks. I have found them to be easy and fun to use. I have often dreamed of seeing my printer turn out such "professional" looking titles, pictures and posters since I bought it. At last my dream has come true!

DRAW 'N PLOT—

(Continued from Page 31)

the characteristics of the printout such as size, rotation and inverse. You could get around this limitation by preprogramming your printer for different print modes, but that is a Band-Aid solution.

Ease of Use: The software is supplied on two different disks, a Program Disk and a Data Disk. Loading the software is a little out of the ordinary—you insert the Program Disk, select Extended BASIC, and the title screen and loader are loaded. You then are instructed to remove that disk and to insert the Data Disk. The subroutines are then loaded into memory. The disks are copy-protected, so making a back-up copy is out.

The program is menu driven and easy to use, although it is not for small children. You must learn certain key presses to use the EDITOR. Also, since most of the subroutines are used mainly from within a running program, you should be a proficient programmer to realize the most benefit from this software (although I must admit you can have some fun with the EDITOR and a joystick). The print routine works on TI, Epson, Gemini, Panasonic and Prowriter printers and is very fast.

This software can use enough memory to compromise the use of some large, string-oriented programs. Your Extended BASIC program should be limited to about 17,000 bytes and only two files may be open at a time. Also, some of the subprograms may use up to 12,000 bytes of VDP RAM (where string data from your program is stored), so you could bomb your program if you are not careful.

Quality 99 Software sells a companion piece of software called Chart Maker. It works with Draw 'N Plot to create bar graphs and pie charts from you raw data. The price is $29.95 (ouch!). I have not reviewed this piece of software.

Documentation: Written documentation for the software is skimpy, consisting of six pages of subprogram descriptions. There are no examples and descriptions are brief. Of course, this seems to be the norm for a lot of software. You should have no trouble figuring out how to use the program.

Value: The value of this software depends on your need for graphics. If you just want something to draw pictures with, there is other, comparable (in some cases, better) software available. Every month we hear new announcements of graphics software with even more features.

If, however, you are a programmer and want 11 more graphics commands at your disposal, then Draw 'N Plot is for you. Your own imagination will determine how useful the program is for you.

Considering value for your money, I think Draw 'N Plot is priced a tad on the high side, especially when you consider that Chart Maker is an additional $29.95. Back when it was introduced, the price was reasonable, but there is much more competition now for your hard-earned dollars. Isn't that nice, for a change?

MYARC—

(Continued from Page 28)

With this card, according to Lou Phillips of Myarc, you "don't get the black box (Winchester disk drive)." Users get the manual, floppy disks and personality card for $250.

Phillips notes that both the 1001-05 board and the 1002-05 board are available from Western Digital and that such a board costs about $200. He estimates that providing a power supply and chassis will cost $650.

Phillips notes that as the personality card is not one of Myarc's standard items, they do not maintain them in stock but will produce them as they receive orders. He estimates that this will take a week to 10 days after the order is placed.

For further information, contact Myarc Inc. P.O. Box 140, Basking Ridge, NJ 07920.

Forth help

Several readers have had trouble loading TI-Forth using a Percom disk drive and controller. Any readers who may have suggestions as to how to solve this problem are encouraged to submit a User Note.

Readers with Percom peripherals say that Forth will not boot.

Freeware (or nearly so)

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

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

Software updates

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

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

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

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

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

Free access library

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

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

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

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

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

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

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

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

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

Free utilities

Danny Michael, of Route 9 Box 460, Florence, AL 35630, has a freeware screen dump and a program called Neatlist.

The screen dump is written in assembly language and is unprotected. It requires XBASIC and works with Epson/Gemini-type printers. The program includes instructions and fully commented source code.

Neatlist is an assembly language utility for XBASIC programmers. Neatlist produces an orderly listing of programs that can be a time-saver in debugging and modifying programs. The program allows the user to set margins for program listings as well as starting and ending line numbers. Listings include easy to read program lines and a list of variables used in the main and subprograms. If you like it, he says, you may pay him for the program, but not more than $10. If you don't like it, "you keep it anyway," he says. He asks that you give copies of the program to others. Send one disk for each program. Or send $5 for each program and he will supply the disk, mailer and postage.

Free craps game

Ramsoft Enterprises, 1501 E. Chapman Ave., Suite 338, Fullerton, CA 92631, is offering its Computer Craps game as Freeware. The game formerly sold for $14.95. The game requires XBASIC and expansion memory. Instructions are included as a file that can be read by TI-Writer.

On cassette

Robert D. Temple, 602 E. Franklin St., Kenton, Ohio 43326-2015, is offering several small programs in console BASIC. The programs are used in state lottery games to pick either 3, 4 or 6 numbers completely at random using the RANDOMIZE and RND commands. Another program picks every possible combination of numbers in Lotto-type games. Send a cassette for the programs.

Cape Cod Golf

Harry P. Richard, 5 Sandstone Dr., Burnt Hills, New York 12027, is offering Cape Cod Golf as freeware. The game is on cassette and runs out of console BASIC. The game previously retailed for $14.95. Send $2 to cover the cost of the cassette, postage and mailer.

Free routines

Silver Wolf Software, P.O. Box 4242, Santa Rosa, California 95402, is offering a collection of assembly language routines written for the NORCAL TI99/4A User Group. The utilities include a routine to save and recall an entire screen of text, a routine that creates lowercase letters with true descenders and a complete chart of ASCII characters, alongside their code values. The routines require XBASIC, disk system and memory expansion. Send a disk with return mailer and postage.

Tax templates

Mike Conway, 911 Dover Dr., South Bend, Indiana 46614, is offering 1984 federal income tax templates for Microsoft Multiplan as freeware. Users are asked to send a disk to Conway with return postage and mailer. He will transfer the files to the disk and return it. The spreadsheet files include Form 1040, Schedules A, B, D, W, Tax Rate Schedule and Sales Tax Table. Use of a printer is optional. Conway says that users may send him a donation of $10 if they think the templates are worth it. "In any event, you are requested to give copies of the software to your friends," he says.

Sprite Builder

John Taylor, 2170 Estaline Dr., Florence, AL 35630, is offering Sprite Builder as freeware to TI users. The program is used to design double-sized sprites. An Extended BASIC-assembly language hybrid, the program requires a disk drive, expansion memory and Extended BASIC. A speech synthesizer and printer are optional.

Those who order must send either two single-sided or one double-sided disk. Included are a cassette version and disk version of Sprite Builder, disk and cassette documentation that may be called to the screen or dumped to a printer, fully commented assembly language source code and 115 pre-defined sprite patterns that the user may modify or merge with existing programs.

Sprite Builder has 22 active functions which are accessed with a single key press. These functions include turning a dot on or off, setting automatic cursor movement, complete color control, retrieving previously defined sprite codes, saving sprite codes, animating up to four sprites, generating hexidecimal codes and rotating the sprite. Sprite

(Please turn to Page 34)

Newsbytes

Cooling fans

Douglas Davis, operator of the WCN (for Warren Communication Network) BBS in Sylmar, California, says he has a number of very quiet PEB replacement cooling fans, ready to install, at a cost of $25.

Purchasers may call the BBS, which operates on the TIBBS system, at (818) 361-9294 from 6 p.m. to 9 p.m. Pacific Standard Time, and Davis says he will send the fans UPS.

Purchasers may write Davis at WCS, 12882 Montero Avenue, Sylmar CA 91342.

'Cargo Run' game

"Cargo Run," a trade simulation game for the TI99/4A and Apple 2+, IIe and IIc, has been released by Redwick & Company.

The game requires the user to take the helm of a Lalande Asteroid Duster and carefully guide the ship through the peril-ridden worlds which make up the Galactic Traders Union.

As a Galactic Trader (Class "C"), the user must interpret the economies of 12 star systems while buying and selling commodities and exploring the unknown. The trader must deal with fluctuating fuel prices, high tax rates, fickle buyers and war-ravaged worlds. New traders soon become aware of their growing debt and their responsibility to make timely loan payments.

The TI version of "Cargo Run" requires Extended BASIC. The disk version also requires 32K memory expansion. The company has announced that it will make discounts available to user groups. Cost of the game is $29.95. "Cargo Run is available through dealers or from Redwick & Company, P.O. Box 441256, West Somerville, MA 02144.

New DBM manual

Navarone Industries has released a new manual for their Data Base Management system.

The company began shipping the DBM system to TI99/4A users last fall

"A lot of our customers had difficulty learning to use the DBM system because the manual was poorly written," says Chuck Humphreys, company president.

Company officials feel that the problem has been overcome with the new manual, which they say is professionally written with easy-to-follow instructions for designing a data base and creating custom reports.

"It's extremely difficult to develop and market software for an orphan computer, but we feel our DBM system is the best data base program available and we want our documentation to reflect the same high quality as our software," Humphreys says. "We learned a lot from our mistakes, and used the feedback from our customers in writing this new manual."

A Navarone spokesperson said copies of the new manual were to be sent to all current DBM system owners beginning May 1. All DBM systems sold after that date will contain the new manual.

The DBM System software retails for $59.95. More information can be obtained from Navarone Industries Inc., 19968 El Ray Lane, Sonora, CA 95370 or (209) 533-8349.

Magazine source

The "Guide to Computer Magazines" by Francis Amato, has been published by the Steve Davis Publishing company at $9.95.

A subject index lists magazines by type of computer. MICROpendium is one of ten TI magazines listed. However, except for TI Logo Source and TI Professional Computing (for the TI Pro), the other magazines listed deal with TI as only one of many subjects covered.

Not directly listed under TI, but of possible interest to some users, are magazines directed toward special interests such as particular programming languages, or for particular business applications.

To order, write Steve Davis Publishing, P.O. Box 190831, Dallas, Texas 75219.

BBS search

Bay City Electronics now has a keyword search routine on its BBS at (415) 364-8517. This routine, according to Terry Hibdon of Bay City Electronics, enables a user to search for any product and the BBS finds in in 17 seconds.

Hibdon said he had TI99/4A silver consoles in stock, new and under warranty, which he planned to sell for $99.95.

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.

FREEWARE—

(Continued from Page 33)

Builder generates MERGEable CALL CHAR statements on disk that can later be merged into a program.

The design screen consists of a 16 x 16 block grid and four smaller blank screen areas stacked on the right side. As you create a design on the large grid, the sprite appears on one of the small screens in actual size, allowing you to see exactly what it will look like before it is finished.

Those who wish to obtain the programs without sending disks and prepaid return mailers may do so by sending $5 for a double-sided version or $7.50 for two single-sided disks.

Texnet freeware

Texnet, the Texas Instruments electronic network operating on The Source, offers some 250 downloadable programs at no charge to Source subscribers. For more information, write Texnet at Soft Mail Inc., P.O. Box 745, Rockwall, TX 75087.

Anyone wishing to have a Freeware announcement included on this page may do so by submitting a copy and brief description of the program, and a note indicating that it is in the public domain, to MICROpendium. The notice will appear monthly, subject to approval by the publisher. Freeware announcements will continue to be published until withdrawn by the person submitting it.

User Notes

Save a screen recall a screen

Ever want to save and recall entire screens while operating in Extended BASIC? Sure would save a lot of time, wouldn't it?

Being able to save and recall entire screens is helpful and the following routines are provided courtesy of Ed York of the Cin-Day (Ohio) Users Group. The routines were written by Ken Hopkins and John Clulow. They require a disk system, expansion memory and Extended BASIC to operate.

The accompanying three assembly language routines may be entered using TI-Writer or Editor/Assembler. Key them in exactly as they appear and then save them to disk under their appropriate names: DSRLNK, SAVSCR and RECSCR.

To use them, enter Extended BASIC. Then enter CALL INIT to prepare the expansion memory for use. Then enter the following:
CALL LOAD("DSK1.DSRLNK", "DSK1.SAVSCR","DSK1.RECSCR")

Executing this command will load the three routines into memory. To save a screen, enter the following:
CALL LINK("SAVSCR","DSK1.FILENAME",SC) where DSK1.FILENAME is the destination and name of the screen you are going to save and SC is the screen color to be used with the screen. (This color seems to be most important when saving graphics rather than text.)

Now, when you want to load the screen back into memory, entering the following:
CALL LINK("RECSCR","DSK1.FILENAME") where FILENAME is the name of the screen you saved using the SAVSCR routine. A screen is loaded in about three seconds in this way.

The most obvious advantage of using these programs is to greatly increase speed when using graphics with your Extended BASIC pro-

(Please turn to Page 36)

DSRLNK

```
00128        A0000B0000B0000B0000B0000B0000B0000B0000B0000B0000B00007F3BBF    0001
A0012B0000B0000B0000B0000B0000B0000B0000B0000B0000B0000B00007F3AFF    0002
A0028B0000B0000B0000B0000B0000B0000B0000B0000B0064B2000B2EAA7F363F    0003
A003EC0018C0042BC17EB53E0C003ABC020B8356BC240B0229BFFF8B04207F286F    0004
A0054B2028B0C1B0983B0704B0202C000EB0580B0584B80C4B1306B04207F2EFF    0005
A006AB2028BDC81B9801C003CB16F6BC104B1352B0284B0007B154FB04E07F2A2F    0006
A0080B83D0BC804B8354BC804C0008B0584BA804B8356BC820B8356C000A7F2A7F    0007
A0096B02E0B83E0B04C1B020CB0F00BC30CB1301B1E00B022CB0100B04E07F2B4F    0008
A00ACB83D0B028CB2000B1332BC80CB83D0B1D00B0202B4000B9812C003D7F2B1F    0009
A00C2B16EEBA0A0C0022B1003BC0A0B83D2B1D00BC092B13E6BC802B83D27F26CF    0010
A00D8B05C2BC272BD160B8355B1309B9C85B16F2B0985B0206C000EB9CB67F271F    0011
A00EEB16EDB0605B16FCB0581BC801C000CBC809C0006BC80CC0004B06997F269F    0012
A0104B10E2B1E00B02E0C0018BC009B0420B2028B09D1B1604B0380B02E07F2E5F    0013
A011AC0018B04C1B06C1BD741BF3E0C003AB03807F6FDF                        0014
5003EDSRLNK7FCEEF                                                     0015
:       99/4 AS                                                       0016
```

RECSCR

```
008FE        A0000B0F00B0500B1000B0000B0823B0000A000BA001CB00007F346F    0001
A001EA083EB0007B0000BC80BC001CB02E0B20BA8D820C0000C000BB02007F2C4F    0002
A0852B0000B0201B0001B0202C000BB0420B2014B0200B0F80B0201C00027F355F    0003
A0868B0202B0A00BB0A0C000BB06C2B0420B2024B0206B0F89BC806B83567F2C2F    0004
A087EB0420B2532B0008B0200B0F81B04C1B0420B2028B0241BC000B02817F304F    0005
A0894B0000B1308B0961BC001B0204B0F80BC804B831CB0420B2034B02007F2FAF    0006
A08AAB1000B0201C001EB0202B0823B0420B202CBD820C083EB837AB04C07F2C6F    0007
A08C0BD020C083FB06C0B0220B0700B0420B2030B04C0BD020C0840BD8207F2D8F    0008
A08D6C0840B83D4B06C0B0220B0100B0420B2030B0200B0000B0201C001E7F31BF    0009
A08ECB0202B0820B0420B2024B02E0B83E0BC2E0C001CB045B7F4D9F              0010
50842RECSCR7FD04F                                                     0011
:       99/4 AS     SCREEN                                            0012
```

SAVSCR

```
0092A        A0000A0020B0F00B0600B1000B0000B0823B0000A002B7F46EF    0001
A003CB0000A003EA085EB0007B0000BC80BC003CB02E0C0000BD820C00207F2E0F    0002
A086EC002BB0200B0000B0201B0001B0202C002BB0420B2014B0200B00007F34CF    0003
A0884B0201C003EB0202B0820B0420B202CBD820B837AC085EB04C0B02017F2D9F    0004
A089AB0002B0420B200CBC060B834AB0281B4001B1A0AB0281B4010B1B077F2DDF    0005
A08B0BD020B834BB06C0B0600B06C0BD800C085FBD820B83D4C0860B02007F297F    0006
A08C6B1000B0201C003EB0202B0823B0420B2024B0200B0F80B0201C00227F32DF    0007
A08DCB0202B000AB04C4BD120C002BB06C4BA084B0420B2024B0206B0F897F2B0F    0008
A08F2BC806B8356B0420B2532B0008B0200B0F81B04C1B0420B2028B02417F2EFF    0009
A0908BC000B0281B0000B1308B0961BC001B0204B0F80BC804B831CB04207F2EBF    0010
A091EB2034B02E0B83E0BC2E0C003CB045B7F801F                             0011
50862SAVSCR7FCF2F                                                     0012
:       99/4 AS     ROUTINE                                           0013
```

User Notes

(Continued from Page 35)

grams. Memory usage is also reduced. Screens recalled with the RECSCR routine appear complete with color, character patterns, sprite motions, sprite shapes and positions intact. After a screen is loaded, it may be treated as if it had been generated by the existing program.

XBASIC speedup

C. Paul Stehling of Santa Fe, New Mexico, writes: If your Extended BASIC programs are executing too slow you may have the old version (100) of Extended BASIC. To find out just type CALL VERSION (X) :: PRINT X into your computer while in Extended BASIC and if 100 appears you have the old version.

Here's the fix, though memory expansion is required to make it work: If your program does not use sprites, just add this line to the beginning of your program to disable them: CALL INIT :: CALL LOAD(-31878,0)

If your program uses sprites add this line: CALL INIT :: CALL LOAD (-31878,n) where n equals the highest sprite value uses. Also, if your program uses the statement CALL DELSPRITE(ALL), change it to CALL DELSPRITE(1,2,...n) where n equals the highest sprite value in the program.

TI in Singapore

The recently formed Texas Instruments Enthusiasts of Singapore (TIES) is in the process of recruiting new members to enlarge its activities, according to Colin Lee, TIES secretary.

"We welcome and invite any information and assistance," Lee writes.

Address for the group is TIES, P.O. Box 698, Tiong Bahru, Singapore 9116.

(Please turn to Page 37)

Designer

George Wentzel writes: For those enjoying a Panasonic KX-P1091 printer, our Extended BASIC program should make for easier designing of specialized characters. Line 170 is for use with the Kantronics TI-99 Hamsoft printer interface and should be changed for other interfaces. The program prevents entering adjacent dots as required by the printer.

As an added note, changing Line 170 from "PP" to "PIO" will do the trick for most parallel printers. The arrow keys move the cursor up and down, and left and right on the grid. The period key turns a point on the grid on and the "O" key turns it off.

```
10 ! DOWNLOADABLE CHARACTERS v1.6 xb by George & Martha Wentzel  4-13-85
20 CALL CLEAR :: CALL SCREEN(13):: FOR I=1 TO 8 :: CALL COLOR(I,16,13):: NEXT I
:: CALL CHAR(64,"3C7E7EFFFF7E7E3C"):: DIM D$(40),P$(40)
30 FOR I=1 TO 12 :: CALL VCHAR(I,5,ASC(SEG$("DOWNLOADABLE",I,1))):: CALL VCHAR(I
,8,ASC(SEG$(" CHARACTERS ",I,1))):: NEXT I
40 FOR R=1 TO 8 :: FOR C=1 TO 9 :: DISPLAY AT(R*2,C+9)SIZE(1):CHR$(111):: D(R,C)
=0 :: NEXT C :: NEXT R
50 R,C=1 :: DISPLAY AT(22,1):"^^E  <^S  >^D  v^X  @^.  o^O": :" Finished"
60 CALL KEY(0,K,S):: IF D(R,C)=1 THEN 90 :: IF D(R,C-1)=1 OR D(R,C+1)=1 THEN 80
70 IF K<>46 THEN 80 ELSE DISPLAY AT(R*2,C+9)SIZE(1):"@" :: D(R,C)=1 :: GOTO 60
80 DISPLAY AT(2*R,C+9)SIZE(1):" " :: DISPLAY AT(2*R,C+9)SIZE(1):"o" :: IF S=0 TH
EN 60
90 IF K=70 THEN 110 :: R=R+(K=88)*(R<8)-(K=69)*(R>1):: C=C+(K=68)*(C<9)-(K=83)*(
C>1):: IF K=79 THEN D(R,C)=0
100 GOTO 60
110 DISPLAY AT(19,1):RPT$(" ",168):: FOR C=1 TO 9 :: FOR R=1 TO 8 :: V=0 :: IF D
(R,C)=1 THEN V=2^(8-R)
120 N(C)=N(C)+V :: NEXT R :: D$(H+1)=D$(H+1)&STR$(N(C))&"," :: P$(H+1)=P$(H+1)&C
HR$(N(C)):: N(C)=0 :: NEXT C
130 DISPLAY AT(17,1):H+1: :D$(H+1):: NH=H+1
140 DISPLAY AT(24,2):"Alter  Next   Print   Quit" :: CALL KEY(0,K,S):: IF S<1 TH
EN 140 :: IF K=81 THEN END
150 IF K<>65 THEN 160 ELSE D$(H+1)="" :: GOTO 50
160 IF K=80 THEN 170 :: IF K<>78 THEN 140 :: H=H+1 :: GOTO 20
170 CALL CLEAR :: OPEN #1:"PP" :: FOR I=1 TO NH :: CH=255-I :: PRINT #1:CHR$(27)
&"y"&CHR$(CH)&P$(I);
180 PRINT #1:CH;" ";CHR$(CH);" ";RPT$(CHR$(CH),3);"   ";D$(I):: PRINT #1 :: NEXT
 I :: CLOSE #1 :: CALL CLEAR :: GOTO 140
```

User Notes

(Continued from Page 36)

Saving time

John R. Witham of Prospect Park, New Jersey, writes: Your February 1985 issue had a file time saver routine for the cassette recorder, but I feel the routine below is good for all data types by just using a counter loop and a comma input pending.

First you must know that each numeric variable is 8+1=9 bytes, no matter how large, and a string variable is one byte per character or space in the string plus one byte. It will take nine seconds per record for a 64, 128 or 192 size record.

```
I0 OPEN 1:----FIXED 192
20 Z=0
30 PRINT 1:N,
40 FOR 1=1 TO N
50 Z=Z+1
60 IF Z=20 THEN 90
70 PRINT 1:T(I),
80 GOTO 110
90 PRINT 1:T(I)
100 Z=0
110 NEXT I
120 PRINT 1:N
130 CLOSE 1
```

Users would input the file organization and type in place of the long dashes in line 10.

The comma in line 30 holds the data in the computer while line 50 sets up the counter. Line 60 determines when to release data to the cassette. Line 90 sends the data to cassette and line 100 zeroes out the counter. Line 120 releases data to the cassette if under the counter number (Z).

Word wrap

The following program comes from the Pittsburgh Users Group. It is a subroutine that provides automatic word wrap capabilities. Lines 100-160 are a brief program that demonstrates what the subroutine (lines 6970-7190) do. The subroutine may be used in BASIC or XBASIC.

```
100 REM *SAMPLE MAIN
PROGRAM *
110 CALL CLEAR
120 W$="THIS IS A TE
ST.  THIS IS A TEST.
SEE WHAT HAPPENS WIT
H A VERY LONG WORD S
UCH AS HIPPOPOTAMUSE
S."
130 PRINT W$ :: ::
140 PRINT "NOW, SEE
THE AUTO WORD WRAP:"
::
150 GOSUB 7000
160 END
6970 REM *SUBROUTINE
FOR AUTOMATIC WRAP
6980 REM *USES W$ FR
OM MAIN PROGRAM
6990 REM *USES THE V
ARIABLES L, Y1, B$(1
-4)
7000 Y1=28
7010 L=LEN(W$)
7020 I=1
7030 B$(I)=W$
7040 IF L>Y1 THEN 70
70
7050 PRINT B$(I)
7060 RETURN
7070 B$(I+1)=SEG$(B$
(I),1,Y1)
7080 B$(I+2)=SEG$(B$
(I),Y1+1,L-Y1)
7090 IF SEG$(B$(I+1)
,Y1,1)=CHR$(32)THEN
7140
7100 B$(I+2)=SEG$(B$
(I+2),Y1,1)&B$(I+2)
7110 B$(I+1)=SEG$(B$
(I+1),1,Y1-1)
7120 Y1=Y1-1
7130 GOTO 7070
7140 PRINT B$(I+1)
7150 I=I+2
7160 L=LEN(B$(I))
7170 Y1=28 7180 IF L
>0 THEN 7040
7190 RETURN
```

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1984

B-1 Nuclear Bomber	February
Tandon TM-100 Disk Drive	February
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Database 500	February
Star Trek	March
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Mail-Call	March
Prowriter 8510 Printer	March
Monthly Budget$ Master	April
Budget Master	April
Home Budget	April
Thief	April
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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
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Lost Treasure of the Aztec	June
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Game of Wit	July
Pole Position	July
TE-1200	August
Tower	August
Galactic Battle	August
Galaxy	August
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Wizard's Dominion	September
Anchor Automation Mk XII Modem	September
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ZORK I	October
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9900 Disk Controller Card/Manager	November
Super Bugger	November
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Learning 99/4A Assembly Language Programming	December

1985

Super Sketch	January
Foundation Computing 128K Card	January
PTERM-99	January
TI-Runner	January
Super Extended BASIC	February
Beginning Assembly Language for the TI	February
ZORK II	February
Morning Star CP/M Card	March
WDS/100 Winchester Disk Drive	March
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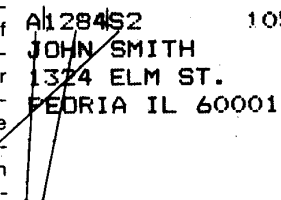

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