

TEXAS INSTRUMENTS

The New TI Forum

by Jonathan Zittrain and
Ron Albright

The Year In Review

What? A "year in review" article in the middle of spring? Since we are new to *Computer Shopper*, we thought it best to start off with a short bit about what is going on in the world of TI 99/4A and, by doing so, perhaps give you an idea where we are going.

The first thing we want to do, right off the bat, is to solicit letters. We want to hear from any and all TI 99/4A users with a problem, with a question, or even without a problem or a question. The strength of the TI community throughout our stay in the "computer orphanage" has been the willingness to communicate and give help and advice to other "orphans." Let's keep that going. We hope to serve as an up-to-date conduit for information, views, and reviews. If you have a technical question, we'll answer it. If you have a programming question, a software question, or whatever, likewise. With your input, we can make this column everything we hope it can be. Above all, it will be fun for all. That we promise.

Anyone who thinks that the users of the 99/4A are to be pitied for being so rudely abandoned by the mainstream of the computer industry is to be pitied themselves. The year that just passed was the most exciting, innovative, and fun year in the history of our machine. Let's recap a few reasons why we think this is true.

1985 started on a bit of a discouraging note. It had become apparent that Corcomp would be unable to produce the rumored 9900 upgrade machine (dubbed the "Phoenix") and that we would have to rely on our /4A consoles indefinitely. Just as the "rumor from the West" was dying out, the new "rumor from the East" started. Myarc (of New Jersey), while steadfastly not confirming (if NOT denying) the rumors, would be producing a new, larger, 9900-based upgrade for the TI community. The rumors were eventually picked up by RYTE Data in Canada, which even sold subscriptions to a periodical "fact sheet" for the dream machine. Finally, at the 3rd TI Fair

(sponsored by the Chicago Users Group in November), Lou Phillips, president of Myarc, made public plans for the new machine. While production setbacks have slowed the release, the machine is still expected sometime in early 1986. We won't go through the machine's details since they have been well publicized, but it will, if it arrives, be a real honey.

What about other hardware for the TI 99/4A? Well, how about a 512K memory expansion card (from the same Myarc, 241 Madisonville Road, Basking Ridge, NJ). How about a plug-in console device that will (1) allow you to back-up and modify our cartridge collection, (2) write code in the macros of GPL (Graphics Programming Language), and (3) keep the elusive GROM memory of certain cartridges (like Microsoft's Multiplan) and ROM memory in the device for immediate recall (the Gram Kracker, Millers Graphics, 1475 W. Cypress Ave., San Dimas, CA). Not to mention the incredible prices on surplus hardware for the TI consoles that makes replacement of keyboards, power supplies, RF modulators, and the like cheap and easy (see the pages of *Computer Shopper* for the suppliers). Boy, its tough being an orphan!

You want languages for programming? How about PILOT, small C, and a new Extended BASIC with full graphics commands. Those to go along with our BASIC, UCSD Pascal, Forth, Assembly, and CP/M. Want terminal emulator software? How about Fast-Term, which is Fairware, or 4A/Talk (DataBiotics, P.O. Box 1194, Palos Verdes Estates, CA) both of which support ASCII, XMODEM and TE2 transfer protocols. Need a database? How about PRBase (Fairware). Utilities? Explorer and Advanced Diagnostics (Millers Graphics), XB Detective (Utilitee Software, P.O. Box 7275, Dearborn, MI), Disk Manager 1000 (Fairware), and Disk + Aid (from Thomson D.I.P., 1461 Beach St., Muskegon, MI) will probably fill anyone's needs. Like to use graphics? Try Graphx (available from Thomson

D.I.P.) or TI Artist (Incesbot, P.O. Box 260, Arnold, MD). Can't draw, but need the artwork? Asgard Software (P.O. Box 10306, Rockville, MD) has made Companion I and II for Graphx, and Incesbot and Dave Rose have made Artist's Companion for TI Artist fans (available from Texaments, 53 Center St., Patchogue, NY). Word processing your bag? TI Writer is now possible to use without the hard-to-find TI Writer cartridge through a variety of loaders from Extended Basic or Editor/Assembler. Want to read about technical information or product reviews? We still have two publications devoted completely to the 99/4A users. MICROpendium (product reviews and news; P.O. Box 1343, Round Rock, TX) and Super 99 Monthly (techni-

cal/programming information; 171 Mustang St., Sulphur, LA) are monthly, jam-packed, and on time. Of course, *Computer Shopper* has continued to support the TI owner-base all along. National telecommunication network support? The TI Forum (Compuserve), TEXNET (The Source), and TIIN (Delphi) are flourishing and absolutely brimming over with information, on-line help, and program downloads. To our amazement local BBSs continue to spring up new all around the country. By our count, there are at least eight different BBS systems running on the TI, two are public domain and a few more are Fairware. Life is hard as an orphan. (If you have any questions about the products we mentioned, drop us a line here at the *Computer Shopper* and

we will answer them...we promise!)

What we are trying to convey is that, if you spent 1985 lamenting the demise of your 99/4A investment and moaning about the lack of support for your machine, you must have had your head deeply in the sand. Our community is alive and well, basking in the warmth of mutual support, ingenuity, and plain old "chutzpah." We revel in the incredible tenacity of the TI users who have continued to amaze the industry with their ability to keep the /4A productive two and a half years out of production. Our hats are off to you, gang.

So You Want To Be A Sysop!

Are you really ready to take

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5 New Programs For The TI-99/4A

QS-RAMDISK

Turn your foundation 128K card into a true, 127 file, RAM disk, with no file-size or file-type restrictions. You can have sequential files, large Ex. BASIC programs, etc. All the capabilities of a SSSD disk, only at RAM disk speeds. Read, write and save to the QS-RAMDISK exactly as if it were a regular disk drive, using all the normal BASIC commands. No new commands to learn. Written in Assembly language. The most incredible new program in years. At last you can really use the full capabilities of your 128K card. Save time, save money. Order now! Req: Foundations 128K card, with DSR option (not disk file emulator) only \$49.95

Banner Maker

Print signs in large letters, up to 6" high, either horizontally or vertically. Upper and lower case letters, numerals, punctuation marks, special characters (\$, %, &, *, ?, ! etc.), plus ten pre-defined characters. You can even design your own characters, and then print them in large size. Fast and easy to use. Lots of fun. "Happy Birthday, John!", etc. Req: Any printer, only \$19.95.

Softkeys

Create your own program-

mable function keys! Save time, eliminate typing mistakes. Define ten keys to be any commands you want, up to 140 characters each, e.g. SAVE"DSK1.

or LIST

"RS232.BA = 4800.DA = 8" etc. Thereafter, only one keystroke will instantly enter the entire command. A great time saver. Written in Assembly language. Only \$29.95.

Screen Dump II

A fast, easy, resident, screen dump program. Written in Assembly language. Print the screen, in normal or full-page size, in only seconds, by simply pressing a key. NO programming required. NO hardware modification required. Load it once, then it is always ready for instant use, at any time, from your BASIC or Ex. BASIC program, or from command mode. You control which column the print out will begin in. Print the screen of certain modules, when used with a Load Interrupt switch (sold separately). Req: TI, Epson, Gemini, Panasonic, Canon, or Prowriter compatible printer. Only \$29.95.

Disk Manager IV

The only resident disk

manager program! Can be operated from command mode or from your program! Load it once, then it is always ready for instant use, at any time. No more swapping modules, or loading a special program, just to catalog a disk, initialize a disk, change file protection, etc. Do it all instantly from command mode, or even in your Ex. BASIC program. A great time saver. Also saves wear and tear on your console. Now, with all the capabilities of the disk manager module (except disk tests), including copy a file to an existing disk, and backup a disk (full or selective) to an existing disk. Unfractures files, too! New help command included, plus a menu-driven option to make it even easier to use. Written in Assembly language. Resides in the Assembly language portion of memory, does not reduce the amount of space available for your BASIC program, or disturb it in any way. Works with all disk controller cards. Only \$39.95.

All programs in this article require disk, 32K, Ex. BASIC.

For further information contact Quality 99 Software, 1884 Columbia Rd. #1021, Washington, DC 20009. •

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the dive? To dedicate a computer and a phone line to unknown strangers who will call your house at all hours of the day (and night) to trade information with other strangers?

Bulletin board systems, affectionately known as BBSs, have been springing up at a fantastic rate across the country, and those that cater to the TI99/4A are no exception. One person or a group of people will sponsor a BBS, with a SYSOP (usually the person whose house the BBS is in), or SYStem OPerator, who watches the proceedings of people leaving messages, programs, and other assorted information to each other. BBSs can be specialized around a specific topic (like TI 99/4A computers)

or simply be a general meeting place, one user at a time, for those whose computers are equipped for calling.

Being a BBS Sysop can be a unique and wonderful experience, but there are some pitfalls along the way you should be aware of before you commit yourself to setting up and running a BBS.

First, you will need a dedicated phone line and computer. Many BBSs are up 24 hours a day, and most keep long hours so that many people will have a chance to call in. This means that you will be putting your computer through some marathon sessions.

The TI Peripheral Expansion Box with its fan should be fine for these heavy-duty uses, but the console should also have a fan somehow attached to one of its vents. You've probably noticed how hot the space in front of the cartridge

port can get (I use it to keep my coffee warm), and after hours of use, the plastic will reach its melting point. In any case, do not be surprised if some components fail after a while. You will be using them heavily, so having spare key parts around would be a good idea.

As a Sysop, you will be doing quite a lot of work. You must be sure that the board is functioning properly, and you will also need to keep an eye on messages and program submissions. The legalities of running a bulletin board are still being fought in the courts now, and it appears that Sysops may be responsible for the content of their bulletin boards. This means that a complete stranger can access your board, leave a libelous message, and someone may try to hold you responsible.

That is another characteristic of bulletin boards to be aware of; BBSs tend to bring out the best and the worst in people. The anonymity of the callers can lead to impolite and heated exchanges, while your efforts as a Sysop to provide a quality BBS go unnoticed. In fact, many Sysops have to go to extraordinary means to prevent people from "crashing" their bulletin boards. Some people will program their computers to call and hang up immediately, tying up your phone line and preventing others from calling. Many others, if the chance presented itself, would not hesitate to erase your disks or otherwise incapacitate your BBS. Sysoping can be a thankless task.

On the other hand, sometimes the right combination of people make for a varied and interesting exchange of information--and when a rude caller makes trouble, the other callers will make it known that they do not approve. You can find great satisfaction in knowing that you are helping so many users disseminate useful information. And this happens as often as a Sysop gives up in disgust as callers abuse the system.

Many BBSs like to force new user "registration" before new people are allowed access. A verifiable address and phone number are required, that preventing people from getting away with leaving impolite or libelous messages. In fact, simply requiring a full name will often deter buffoonery.

So, how does a TI 99/4A owner go about setting up a BBS? First, the hardware required:

On top of your TI 99/4A console and monitor, you will need an RS232 card, disk drive, 32K memory expansion, acoustic coupler (modem), and most probably a printer. Still want to be a Sysop?

The RS232 card allows your computer to "talk" to your modem, which in turn talks to your phone line and its caller. A few models of modems are available; you will need the "smart" type. Smart modems can be instructed by the computer to hang up and answer the phone automatically. This is necessary since a Sysop cannot be expected to be present all the time a BBS is running. You will also want to consider what speed modem, meaning how quickly the modem can transfer data over the phone line, you would like. Data speed is expressed in "baud rates" and "bits per second" (actually two different terms), and the two generally accepted speeds are 300 and 1200 baud. 2400 is also becoming available, but a typical BBS can function quite well at 300 baud. Information is transmitted about as fast as a person can read it, and probably no more than half the callers will have modems that can support baud rates higher than 300 baud callers. Whichever speed you choose, your TI 99/4A will be able to adapt.

Depending on just how much information you would like our BBS to store, one or two disk drives are required, as is a memory expansion card. The 128 or 512K RAMdisk cards are excellent for BBS usage since they save wear and tear on your disk drive, but run-of-the-mill 32K cards will serve equally well. A printer is also helpful, giving a hard copy of some of the callers' activities.

After you have gathered together the necessary hardware, you will need appropriate BBS software. What BBS program you choose will have a great effect on its "aura" and usage. And some people like to write their own. In fact, many of the TI 99/4A BBSs available today were for the use of a particular Sysop, who then decided to market the program.

TIBBS by Ralph Fowler is thought by some to be the "original" BBS program for the TI 99/4A. The flagship BBS is in Atlanta, Georgia, and the number is (404) 425-5254. TIBBS retails for well over \$100, so it is not the most economical BBS available. The best benefit of TIBBS is that it has been time-tested and should have very few, if any, errors in its code. The majority of TIBBS is written in TI Extended BASIC, but making additions to the program is difficult because the program takes up most of the available memory. More information on TIBBS can be reached by writing:

Ralph Fowler
P.O. Box 383
Kennesaw, GA 30144

Quite a few BBS programs are "fairware," meaning that they are freely distributed and copied. And if the Sysop finds the BBS useful, he pays a specified amount to the author for the author's programming efforts. TECHIE is an excellent fairware BBS by Monty Schmidt, and has all of the features of TIBBS, including XMODEM file transfers, which are faster than TIBBS's standard Terminal Emulator II transfers. Then again, a special XMODEM terminal emulator is required to take advantage of the XMODEM protocol transfers.

For more information on TECHIE, write:

121 North Blair
Madison, Wisconsin 53703

Scott Darling of Spokane, Washington, has made available his BBS as fairware. The number of his main BBS is (509) 484-6163. More information on his BBS can be found at:

W. 5515 Woodside
Spokane, WA 99208

Scott is also on CompuServe's TI Forum. His ID is 72366,714.

John Clulow and Ron Gries of Ohio have written the public-domain TI-COMM BBS. Information on TI-COMM can be found at:

New Horizons User Group
345 W. South Boundary Road
Perrysburg, OH 43551

TI-COMM includes instructions on building the auto-answer/auto-dial device so that a smart modem is not required.

So, a substantial investment in software is not necessary; the programs are available, or you can write your own. One rough spot is in finding out just when a user has called. And detecting their carrier (and finding out if they have hung up prematurely) must be done through an assembly language routine. Thorough knowledge of assembly is not required, however. Due to space considerations, the other programming pitfalls have to remain uncovered. But the carrier detect is the major problem.

Still want to be a Sysop? It does take dedication and hard work, but it is often satisfying and enriching for both you and your users. Housing a BBS is a true, time-consuming commitment. You will probably want to call some current BBSs to see just how the Sysop controls and adds to the flow of information. Best of luck. And welcome to the select club of TI users who are sharing for the advancement of their machines. ●

Randy's Ravings

by Randy Holcomb

This is my last monthly "Randy's Ravings" column for the TI for the *Computer Shopper*. But, this does not mean that the *Shopper* is dropping TI coverage. It is, rather, an expansion of the coverage that is so vitally needed in the computer community.

Effective with this column two new names will be seen heading the 99/4A coverage: Ron Albright and Jonathan Zittrain. You may already know these folks from the TI Forum on CompuServe, and Ron recently wrote a book called *The Orphan Chronicles* which I hope to review as soon as I get it (I will still periodically do a TI piece every now and then as I see fit, and will cooperate with Ron and Jon to make sure that we don't duplicate or overlap material.) So in the future, if you have any questions, comments or suggestions this new column is your new resource for TI 99/4A Information. Dick Evans is doing a very nice job doing coverage for TI Professional owners and will continue on in that stream. Both Dick and myself can also be reached on the TI Information Network on Delphi, and I will still field 99/4A questions there. Dick's Username is ELLISCO, and mine is RANDYH.

For those of you who have sent me mail with SASE's that I did not return, they will be forwarded to a very energetic TI owner in California, Teresa Masters, president of the Los Angeles 99/4A Users Group, who will do her best to get this backlog ironed out and get

your questions answered.

Why am I "dropping" out? I'm not really dropping out of my coverage, but I have reached a stage where my own personal needs require a new outlet, and I have found it with my (gasp) Atari 520ST. I have been talking to other individuals, and I have found that a lot of folks who previously had a computer are buying Atari's, while first-time buyers are swooning over the Amiga. Why this is happening I don't know. My own opinion is that should you decide to upgrade outside of the /4a, I think you'll find the Atari a nice choice if you aren't too hot about the rest of the world (read: MS-DOS and Apples.) Please don't take this as my effort to convert you over to a new machine - I still find the TI 99/4A superior in many ways and I have NO intentions of dumping my /4A! For many people the 99/4A will be all the computer they will ever need. However if you really need to upgrade and go beyond the capability of /4a, then you should give some serious thought to the Atari ST Series.

Right now, as you are reading this a renaissance of the Home Computer is beginning and people are once again rediscovering the delights of having a home computer. The reasons are as wide and diverse as the people are who use them. It is important to remember that there are many people who own TI computers and have no idea where to look for peripherals, software, and so

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on. Many of these people are first time users and they may not know about a local user group in their area. Therefore they are forced to rely upon mail-order firms to obtain the items they need to make their systems useful. For most of the old timers the following information will be a repeat of things they have heard and seen before, but since many people are seeing this for the first time, I want to share with you some extremely important information regarding purchasing items thru the mail.

Things to check before sending your money. One of the first things to do, and perhaps the most important, is check with other TI users that you know and with your local users groups. Also inquire on the commercial networks (CompuServe, Source, Delphi, etc.) and local BBS for information on how the particular com-

pany does their business. Ask if customers are satisfied with the service obtained from the company. For quite a while a few firms have engaged themselves in very questionable activities regarding sale of software, ranging the gamut from selling public-domain software to outright piracy. As an example, a retail outlet in my area sold copies of TI Forth for \$25. TI Forth was given FREE to those users groups registered with TI at the time that TI distributed the "Care" packages to user groups. It seems ridiculous to pay \$25 for something that was basically given away for free (even at cost to duplicate the disk and manual the charge would be well under \$25) - but many novices are not aware of this fact.

Purchasing items thru the mail. Most of the dealers in the TI community are very honest and want your return business. However, there are some dealers who prey upon the un-

knowing and will take advantage of you. To protect yourself, here are some basic guidelines to follow when dealing with mail-order outfits:

1) Use a money order, check or credit-card for your purchase. Using a check or money order will at least give you proof regarding the fact that you sent them money, and also foreces the selling party to take specific action if an order cannot be delivered within a 30-day period (per the FTC rules.) Also, read the fine print for details about surcharges on credit-card purchases (this issue alone has generated much debate over its legality in many parts of the country), any additional shipping and handling charges, and so on. Finally, make a copy of the order form or letter that you send in for future reference. The February issue of *Consumers Reports* does a nice job in explaining how to approach mail-order outfits. If you deal with one of our mail-order advertisers and

you run into trouble please let us know! (See our "Publisher's Statement on Honesty" which is in the front of the magazine by the contents page.)

If you buy software thru the mail, make sure that the dealer you buy it from is authorized to sell the product. It has come to light that a software "grey market" is emerging which could put you in a bind. If you can order software DIRECTLY from the publisher, do so, even if it means paying a higher price. Ordering direct from the publisher usually insures that you will be placed on the vendor's mailing list for future updates and/or bug fixes, plus (at least for now) it's pretty rare that a software author will not sell directly to the public; at least in the TI 99/4A community.

Speaking of selling software, selling your own software has gotten quite tricky and nasty as of late, hence the growth of the "shareware/freeware" concept, whereby "donations" are given to the authors of a program package when a person feels that the program acquired is of useful benefit to him. Not all freeware programs are entirely successful; sometimes a freeware package that you get may be missing documentation or a key programs that make the package work. Fortunately, most of the freeware code floating around is not copy-protected, therefore you can put the code on a "master" system disk and have it ready without having to swap disks.

If you want to have a 3rd party sell your software then its time to do some serious thinking and consult a lawyer before you sign anything. This goes without saying because of the rampant piracy present. Also, be wary of "consignment" agreements and establish a method of being able to easily identify legal copies of your software without the pirates knowledge and make it passive and (perhaps) separate from any copy protection scheme that you may (or may not) want to incorporate. More than likely itchtification may not stop the "casual" pirate, but it can be useful should someone go into full-scale piracy, as proof in a legal suit. Having the individuals sending in a registration card is also useful, providing that the same guidelines above are followed. Of course, you can always go into business for yourself and sell your wares direct as a part-time activity, which (if successful) could lead to other greater things.

Tying Up Loose Ends

I am pleased to report that newsletters from the Delaware Valley Users Group, the Charlotte TI 99 Users Group

and Mid-South 99ers, as well as the Central Arkansas Forth Interest Group are winding their way here to the *Shopper* and from what I've seen so far looks promising. One of my dreams (unfulfilled) would be to develop a centralized database containing a complete cross-reference of articles published in the many newsletters from around the country which could be made available on one of the major networks. If the articles were placed on disk and sent to a central location for processing this could make retrieving information for a specific topic real easy and at minimal effort. If there is enough interest from the User Groups newsletter editors and from you, the users drop me a line here or any of the networks I frequent (CIS: 73137,3263; Delphi: RANDY-H, GENie: RHOLCOMB) and we'll take it from there and see if there is enough interest in pursuing this item further.

When BYTE bites, it BITES!

I am still receiving mail from our mention in Steve Ciracia's feedback column, and it's coming from around the world asking for technical assistance and in locating peripherals and products. Your best bet is to contact your local TI Exchange Center to obtain a list of local users groups which are one of the best sources of information. The *Computer Shopper* is still one of the best places to look for many pieces of equipment, but unfortunately very few dealers take out ads telling you that they have TI-specific peripherals. So until the dealers see the light, look in the back of our classified section for systems for sale/wanted and don't dawdle - items there won't last very long! If you have a local dealer who sells TI 99/4A equipment and supplies have them contract our sales staff for our rates.

By the time you read this the Third-annual TI-Fest West in Los Angeles (March 1st and 2nd at the Shrine Exposition Hall) would have come and gone, so watch the next month's issue for an update on what went on there. For you East Coasters, the TI Computer Owners' Festival (TICOFF) is slated for March 15th at the Roselle Park High School in Roselle Park, NJ, just south of Newark, about 2 1/4 hours from the Christiana Mall and near a Route 22 exit off the Jersey turnpike. The New England 99 Fayuh (Honest, folks, that's what it's called!) hits Lexington, MA, on Saturday, April 5th at Diamond Junior High School (off Route

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hard disk booted, DOS came up, and I got a prompt. All the diagnostic LEDs on the mother board went out, and I was in business.

I could then run all kinds of software (like the benchmarks in the Feb. issue) at speeds unheard of before. For example, MicroSoft WORD, (one of the most lethargic WPs I've ever seen) was scrolling like a whole new program before my eyes...for about 5 minutes!

Then...CRASH!!!!...the whole mess either went berserk or locked up. If I shut the machine off and turned it back to 4.77, it would boot and run fine at the lower speed. If I let the machine sit off for quite a while, could come back, boot at the higher speed and run for another 5 minutes, and then (again) CRASH!

Why Doesn't It Work?

The CPD module speeds up the entire system clock, so a lot of parts (not just the CPU) are running at higher speeds than they are certified for. All of the internal chips of the 150 are only rated at 5Mhz or so. They would work at the higher clock speed until they get good and warmed up (which takes about 5 minutes), and then... CRASH!!!!

If you are very fortunate, you will get a machine where all the internal chips are "over spec" and able to handle the higher 6.66 Mhz clock. If you are like most people that I've talked to, your 150 probably has several chips that are just not capable of handling the higher speeds. If so, there appears to be a possibility of

replacing some of them with chips rated at higher clock speeds.

It seemed to me that the "culprit" could be either the 8088, one or more of the 8000 series support chips, the RAM chips, or possibly the BIOS EPROM chips. I have tried replacing the 8088 with an 8 mhz V-20 version. It ran just like the stock 8088, everything was fine for about 5 minutes and then....(you guessed it)...Crash!!! So, I assume that the 8088 isn't the culprit (or at the least the only culprit). I took out the hard disk controller (CPD suggests that certain hard disk controllers can cause problems) and ran the machine as a "floppy only" system. Well, it didn't help. The thing still went....(here it comes)...CRASH!!! I also replaced the standard RAM chips with prime guaranteed 120 ns. chips. It had no effect on whether the system crashed or not.

Two things I was unable to do might also help. If you replaced all the support chips with 8 mhz versions, it might solve the problem. If that doesn't solve the problem, the last thing to look at is the BIOS EPROMs. It may take "re-burning" them into faster version EPROMs to solve this problem. If these things don't solve the problems then I think it would be best to give up on the whole thing!

CPD's "Customer Service" (or Lack Thereof)

Even though they fulfilled my request for a review sample to test, I, too, was a little disappointed with CPD's customer service. They do not provide a phone number for

service support and are very slow in filling orders and answering letters. They claim that the overwhelming response for the Time Works module has swamped their resources. The apparent reason for this is that CPD is actually a "homebrew" operation run by Heath/Zenith hobbyists. While there is a tendency to excuse a "hobbyist," CPD needs to realize that it's customers deserve better service for their money.

I had some of the same problems that Ted Robinson describes, and wrote CPD for help. I didn't get a response for several weeks. When it did come, it merely said, "... currently researching this problem....it is possible to run the basic machine as fast as 7.4 Mhz...initial testing functioned very well at that speed."

For now, if you are starved for speed, I recommend that you stick with adding a "V" chip or try the CPD Time Works board, on a *guaranteed money-back basis*, only. If your particular machine can run the higher speed with no problem, you've got a inexpensively upgradable machine. If not, it may be less expensive to add a new CPU board (in the long run).

For what it will cost you to replace all the chips on your CPU and RAM board with higher spec chips, you could probably buy a "stand alone" co-processor board. You could also probably buy the (true) 8 Mhz CPU board for the 158 for less money. These are both possibilities that I am exploring and will report on in future articles (as well as some other speed-up boards that are "in the works"). ●

Real Estate continued from page 189

properties. Handles unlimited number of properties. Can be used by investors and property managers. IBM PC, XT, AT - 192 KB req. - Introduced: 1984 - Cost: \$385.

REAL-E-DATA, INC. 214-860-1373 * Real-A-Pro

Residential real estate office management system. Handles inventory control, sales analysis, performance reports, general ledger, agent billing, check writer, accounts payable and employee payroll modules.

IBM PC - 128 KB req. - Sample diskettes avail. - Copies sold: 200 since 1981 - Cost: \$1,250

REAL ESTATE AGENT COMPUTER SERVICE 515-867-8042 * Utility Programs

Aids the agent/broker in qualifying home buyers. Features amortization schedules, buyer/seller proceeds, rent vs buy, residential ownership analysis, commercial investment, residential refinance analysis, wrap-up analysis, and depreciation schedules.

IBM PC - 64 KB req. - Sample diskettes avail. - Copies sold: 200 since 1979 - Cost: \$85

REAL ESTATE APPLICATIONS SOFTWARE, INC. 516-879-9331; 800-645-4860 * SUPERVAL

Real estate valuation and analysis program which facilitates discounted cash flow forecasts of income producing properties for 5-50 years. Features include automatic calculations of lease rollovers on a monthly basis, with new base rents, new escalation provisions (including porter wage formula), leasing

commissions and tenant improvement cost; before and after tax analysis including present values and internal rates of return; future equity fundings; multiple mortgages with participation formulas; ground rent with participation formulas; varied multi-year entries for revenue and expense items; resale based on equity cap rate, overall cap rate or specified amount; reports with user definable labels; and intergration with Lotus 1-2-3. IBM PC, XT - 128 KB req. - Sample diskettes avail. - Copies sold: 100 since 1984 - Cost: \$950

REAL ESTATE INVESTOR, INC. 215-389-1957

*RENTMAN for the Real Estate Investors and Property Manager Property management system. Manages 10,000 properties, vendors and chart of accounts, depending on storage and memory capacity. Programs include property, depreciation, partnerships, mortgage amortization, constant payments, tenant, rent receipts and other deposits, chart of accounts, vendor, income and expense statements, checkbook management and year-end processing.

IBM PC, XT - 128 KB req. - Sample diskettes avail. - Copies sold: 85 - Cost: \$1,895

*RENTMAN/Property Manager Property management package. Manages up to 10,000 properties. Includes Property, Tenant, Rent Receipts, Chart of Accounts, Vendors, Income and Expense Statements.

IBM PC, XT - 128 KB req. - Sample diskettes avail. - Copies sold: 80 since 1984 - Cost: \$950

THE REAL ESTATE SOFTWARE HOUSE 707-664-8677

*The Property Manager

Addresses the needs of the residential and commercial property manager. Operates on a cash rather than accrual basis tracking on master bank account and unit account and provides a constant working balance. Property managers with many different accounts typically use one major operations account thru which money is disbursed and received, and then transferred into the individual relevant property accounts. IBM PC - 256 KB req. - Sample diskettes avail. - Copies sold: 2,800 since 1978 - Cost: \$1,495

REAL ESTATE SOFTWARE, INC. 301-488-1523

*The Real Estate Investment Analysis System Investment and financial analysis of income-producing real estate. Consists of six independent programs that include REAP for single-owner real estate analysis, REAPX for multi-owner real estate, LEASE for commercial office building income and expense projection, DEPREC for mixed-use depreciation, MORTGAGE for analysis of both conventional and non-conventional loans and IRR for present value and internal rate of return.

IBM PC - 128 KB req. - Sample diskettes avail. - Copies sold: 50 since 1982 - Cost: \$1,500

*The Real Estate Syndication Analysis System Economic forecasting of one-tier real estate limited partnerships. Handles periodic payments, syndication fees, preferences incomes, coverage and repayment of operating deficits, mortgage participation and leasing co-ops. Variety of formulas are available for the distribution of profits and losses. IBM PC - 128 KB req. - Sample

diskettes avail. - Copies sold: 13 since 1983 - Cost: \$1,500

*The Two-Tier Syndication Analysis System Economic forecasting of two-tier real estate limited partnerships. Accommodates and unlimited number of lower tier partnerships. Handles operating and funding expenses and the upper tier. IBM PC - 128 KB req. - Sample diskettes avail. - Copies sold: 3 since 1983 - Cost: \$2,500

REALDATA, INC. 203-255-2732; 203 838-2670

*Commercial/Industrial/Development Applications for SuperCalc, Multiplan and Lotus 1-2-3. Provides project cost analysis, lease tracking, and annual income and expense statement. Monitors up to 32 rental units per property. IBM PC - 64 KB req. - Introduced: 1982 - Cost: \$100

*On Schedule

Month-by-month cash flow planning for real estate developers with

projects built and sold in stages. Requires SuperCalc, Multiplan or Lotus 1-2-3. IBM PC - 64-512 KB req. - Introduced: 1982 - Cost: \$195

*Real Estate Overlays for Multiplan and Lotus 1-2-3

Ten year sensitivity analysis for income producing real estate. Includes annual operating statement, loan amortization schedule and internal rate of return calculator. IBM PC - 64 KB req. - Copies sold: 2,000 since 1982 - Cost: \$150

*Residential Real Estate Models for Multiplan and Lotus 1-2-3

Provides mortgage qualifier, residential rent vs. buy analysis, comparative market analysis and mortgage payment chart. IBM PC - Introduced: 1982 - Cost: \$100

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Randy's Ravings continued from 190 128/95, outside of Boston.) It is being sponsored by the Boston Computer Society TI Users Group. For the latest information on this you can call their BBS at (617) 331-4181 (300/1200 bps, 24 hours.)

Other TI News Navarone Industries has been acquired by another company and has been relocated to Texas. Their new Phone number is (214) 437-1118. Navarone produces software for the 99/4A, with Disk Fixer their best-known item.

In Closing It's been quite an experience doing a monthly column for and about TI Computer and their users. With Ron and Jon coming aboard it will strengthen what was started when Black Friday hit and TI disappeared as support. So far, we have done the best we could given the circumstances, and yes, we have fallen down on a number of occasions. But it is important to emphasize that even this media is just not a one way street. For every one letter there must be at least 10 or 20 other people who read this section and who could provide some insight or could have a particular area explored further. In many respects, this is a job for more than just one person, and that need has now

been recognized. And once again I must state that I am not "dropping" out of TI coverage. But myself, Ron and Jon can only do so much. The rest of what needs to be done: for new users and experts alike, has to

coe from you. It's sorta like the old saying that "We have done so much with so little for so long that we can do practically anything with nothing forever." Guess what? There's still ore to do. Watch us. ●

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