

Contributions to UNOFFICIAL are very much welcome. We like to print a variety of programs which will be helpful, fun, educational and mind puzzling for other UNOFFICIAL readers. Programs submitted must be on tape only. Disk programs can be handled, but they take more time to get to. We do not have time to 'key in' programs that are submitted on paper. All programs must be accompanied by a detailed instruction guide, and an editorial commentary for all other information that you feel is necessary. The more written the better. All correspondence must be typed, or hand printed. We do pay for quality submissions, based on several criteria. Remuneration is small at the moment, but will

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SUBMITTING MATERIAL

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increase as circulation does. Those wishing remuneration must so state when making submissions.

For more detailed information on making submissions, please send a SASE to Submission Information, UNOFFICIAL 99/4(A), P.O. Box 651, Clute, Texas 77531.

Good luck !!!!!

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EDITORIAL.

While I was at Texas A&I University studying for my degree, I had to take one more English class than the two basic ones I had already struggled through. Since I could not get into a Chaucer class I chose a general literature class. One of the books that I had to buy was one that had 101 short stories. Aside from the ones that I had to read I came across one that came back to me recently.

The story is called 'The Bound Man' by Ilse Aichinger. The story is kind of strange because it never tells you the why and how of the man becoming bound. In the morning, the man is out in the country side, he finds himself all tied up with rope and no way out. He soon finds out that the rope is not so tight enough that he has no movement, but not enough slack to give him total freedom. With that partial freedom he soon learns how to 'walk' but not without falling over a good few times.

The story goes on and he joins up with a circus. In the circus he learns to push his limitation of movement to its maximum and so doing becomes a star in his own right. Many people, the story states, do not believe that the man has the ropes on him all the time, while others do.

Yes now he could cut the ropes that are about him, but with his new found 'freedom' he has found a certain something.

The story has a sort of sad ending, but you will have to read the book to find out what it is.

Now how similar that is to how some of us -including myself- feel when we fully realize just how limited we are in using the standard TI BASIC. We trip up, stumble, and complain about the shackles that TI has put about us. Unfair I think. For only a few dollars more I could have the world! Well at least EXTENDED BASIC.

But just like the Rope Man in the story if we start learning, pushing

out, exploring, and trying alternative ways the limitation becomes a pearl of great price.

Of course there are several things that you will never be able to do unless you have the EXTENDED BASIC, but do not limit yourself just because you do not have it.

On another line... While I was visiting San Antonio earlier this year I paid the local 'Toys R Us' shop. Aside from their usually competitive prices I found a Consumer Information Sheet on home computers. That is what I call user friendly. On one side was a short write up on home computers and a list of the most common terms used in 'computer talk'. On the other side of the paper was a comparison between the Commodore Vic-20, Texas Instruments TI-99/4A, and the Atari 400. As you may guess they are all closely priced.

The categories under comparison were memory (ROM), memory (RAM), input, output, language, communications capability, software, and a miscellaneous.

This type of help by a large company can only help the TI P.C. Our computer showed its true colours in every way, and I felt proud of it, and learned just how far behind are the competition really is.

Again on another line... I had just received a computer magazine from England. You can see the different style in the writing and advertisements. And talking about advertisements there was one from Texas Instruments. The ad was very similar to the design and layout to those you see in the States, but without Bill Cosby.

The ability of TI to come out with an ad campaign of such blah is amazing. I am at a loss to understand the logic behind such a low key approach in selling a good quality product, at the right price, in such a dog eat dog market place. I see ads of the Vic-20 all over the place in many configurations and quietly wonder which company handles the TI ad contract. That company must either be held back by TI, or by themselves. What ever is the problem I hope it goes soon.

###

HUGE ELEK-TEK DISCOUNTS ON TI-99/4A Home Computer System



TI-99/4A Keyboard
Less Mfr. Rebate
Final Price

\$300.00
100.00
200.00



TEXAS INSTRUMENTS
INCORPORATED

Model	Name	Mfr. Sugg. Ret.	Elek-Tek Price
CONSOLE			
PHC 004A	TI-99/4A Home Computer (incl. RF Modulator)	450.00	300.00
PERIPHERALS			
PHP 1200	Peripheral Expansion Box	249.95	180.00
PHP 1220	RS-232 Card	174.85	130.00
PHP 1240	Disk Controller Card (One Disk Manager module packed with each Disk Controller)	249.95	180.00
PHP 1250	Expansion System Disk Drive (Disk Drive Controller required)	399.95	285.00
PHP 1260	Memory Expansion Card (32K RAM)	299.95	215.00
PHP 1270	P-Code Card (32K RAM Memory Expansion required)	249.95	180.00
PHP 1500	Solid State Speech™ Synthesizer	149.95	110.00
PHP 1600	Telephone Coupler (Modem)	224.95	163.00
PHP 2500	TI 80 Column Impact Printer	750.00	500.00
PHP 2300	VCR Controller	399.95	290.00
PHP 2400	P-Code Peripheral	49.95	38.00
PHA 2100	RF Modulator (TV Adapter)	399.95	320.00
PHA 4100	10" Color Monitor	34.95	28.00
OPTIONAL ACCESSORIES			
PHA 1100	Wired Remote Controllers (Pair)	9.95	8.00
PHA 1950	Thermal Paper (2 Pack)	14.95	12.00
PHA 2000	Dual Casing Cable	19.95	15.00
PHA 2010	Monitor Cable	99.95	85.00
PHA 2020	Audio Adapter (Headphone Jack)	99.95	85.00
PHA 2310	Panasonic VCR Controller Cables	99.95	85.00
PHA 2320	Sony Video Controller Cables	99.95	85.00
PHA 2330	Pioneer Video Controller Cables	99.95	85.00

Model	Name	Mfr. Sugg. Ret.	Elek-Tek Price
APPLICATION PROGRAMS			
Home Management/Personal Finance			
PHM 3006	Home Financial Decisions Command Module	29.95	24.00
PHM 3007	Household Budget Management (Data storage system is required)	39.95	32.00
PHM 3012	Securities Analysis	54.95	44.00
PHM 3013	Personal Record Keeping (Data storage system is recommended)	49.95	40.00
PHM 3016	Tax/Investment Record Keeping (Disk system is recommended)	69.95	56.00
PHM 3022	Personal Real Estate (Data storage system is recommended)	69.95	56.00
PHM 3044	Personal Report Generator (Data storage system is recommended)	49.95	40.00
PHM 3111	TI Writer (32K Memory Expansion required)	99.95	75.00
PHM 3113	Microsoft™ Multiplan™ (32K Memory Expansion required)	99.95	75.00
PHD 5001	Mailing List	69.95	56.00
PHD 5003	Personal Financial Aids	19.95	16.00
PHD 5021	Checkbook Manager	19.95	16.00
PHD 5022	Business Aids Library—Finance Management (Extended BASIC Command Module is required)	39.95	32.00
PHD 5024	Business Aids Library—Inventory Management (Personal Record Keeping or Statistics Command Module is required)	69.95	56.00
PHD 5027	Business Aids Library—Invoice Management (Personal Record Keeping or Statistics Command Module is required)	69.95	56.00
PHD 5029	Business Aids Library—Cash Management (Extended BASIC Command Module is required)	39.95	32.00
PHD 5038	Business Aids Library—Lease/Purchase Decisions Cassette	69.95	56.00
PHT 6003	Personal Financial Aids	14.95	12.00
PHT 6038	Business Aids Library—Lease/Purchase Decisions	59.95	45.00

Model	Name	Mfr. Sugg. Ret.	Elek-Tek Price
Educational/Personal Enrichment			
Command Modules			
Texas Instruments Packages			
PHM 3002	Early Learning Fun	29.95	24.00
PHM 3003	Beginning Grammar	29.95	24.00
PHM 3004	Number Magic	19.95	16.00
PHM 3005	Video Graphs	19.95	16.00
PHM 3008	Video Chess	69.95	56.00
PHM 3010	Physical Fitness	29.95	24.00
PHM 3020	Music Maker (Data storage system is recommended)	39.95	32.00
PHM 3021	Weight Control and Nutrition (Data storage system is recommended)	59.95	48.00
PHM 3040	TI LOGO (Memory Expansion is required)	129.95	75.00
PHM 3054	Touch Typing Tutor™ (Available for TI 99/4A only)	39.95	32.00
PHM 3109	TI Logo II™ (32K Memory Expansion is required)	129.95	75.00
Scott, Foresman Reading and Math Packages (Developed by Scott, Foresman)			
PHM 3015	Early Reading (Solid State Speech™ Synthesizer is required)	54.95	44.00
PHM 3043	Reading Fun (Solid State Speech™ Synthesizer is recommended)	54.95	44.00
PHM 3046	Reading On	54.95	44.00
PHM 3047	Reading Roundup	54.95	44.00
PHM 3048	Reading Rally	54.95	44.00
PHM 3082	Reading Fight	54.95	44.00
PHM 3027	Addition and Subtraction I (Solid State Speech™ Synthesizer is recommended)	39.95	32.00
PHM 3028	Addition and Subtraction II (Solid State Speech™ Synthesizer is recommended)	39.95	32.00
PHM 3029	Multiplication I (Solid State Speech™ Synthesizer is recommended)	39.95	32.00
PHM 3049	Division I (Solid State Speech™ Synthesizer is recommended)	39.95	32.00
Scholastic Packages (Developed by Scholastic, Inc.)			
PHM 3059	Scholastic Spelling—Level 3 (Solid State Speech™ Synthesizer is required)	59.95	48.00
PHM 3060	Scholastic Spelling—Level 4 (Solid State Speech™ Synthesizer is required)	59.95	48.00
PHM 3061	Scholastic Spelling—Level 5 (Solid State Speech™ Synthesizer is required)	59.95	48.00
PHM 3062	Scholastic Spelling—Level 6 (Solid State Speech™ Synthesizer is required)	59.95	48.00
Addison-Wesley Computer Math Games (Developed by Addison-Wesley Publishing Co.)			
PHM 3083	Computer Math Games I	39.95	32.00
PHM 3088	Computer Math Games VI	39.95	32.00
Milken Home Math Series—K thru 8th grade (Developed by Milken Publishing Co.)			
PHM 3090	Addition	39.95	32.00
PHM 3091	Subtraction	39.95	32.00
PHM 3092	Multiplication	39.95	32.00
PHM 3093	Division	39.95	32.00
PHM 3094	Integers	39.95	32.00
PHM 3095	Fractions	39.95	32.00
PHM 3096	Decimals	39.95	32.00
PHM 3097	Percents	39.95	32.00

Model	Name	Mfr. Sugg. Ret.	Elek-Tek Price
Texas Instruments Packages			
PHD 5007	Teach Yourself BASIC	34.95	28.00
PHD 5009	Music Skills Trainer	29.95	24.00
PHD 5011	Computer Music Box	19.95	16.00
PHD 5018	Market Simulation	19.95	16.00
PHD 5019	Teach Yourself Extended BASIC (Extended BASIC Command Module is required)	24.95	20.00
PHD 5020	Music Maker Demonstration (Music Maker Command Module is required)	14.95	12.00
PHD 5023	Baseball Statistics (Extended BASIC Command Module is required)	24.95	20.00
PHD 5026	Bridge Bidding I	29.95	24.00
PHD 5030	Speak & Spell™ Program (Solid State Speech™ Synthesizer is required)	29.95	24.00
PHD 5031	Speak & Math™ Program (Solid State Speech™ Synthesizer and Terminal Emulator II are required)	29.95	24.00
PHD 5039	Bridge Bidding II	29.95	24.00
PHD 5041	Bridge Bidding III	29.95	24.00
PHD 5042	Speller Writer (Terminal Emulator II Command Module and Solid State Speech™ Synthesizer are required)	29.95	24.00
PHD 5067	Beginner's BASIC/Tutor	29.95	24.00
MECC Packages (Developed by Minnesota Educational Computing Consortium)			
PHD 5076	Matrix and Counting™ (Extended Basic Command Module is required)	29.95	24.00
PHD 5079	Elementary Economics	29.95	24.00
PHD 5080	Elementary Math and Science™ (Extended BASIC Command Module is required)	29.95	24.00
PHD 5081	Astronomy (Extended BASIC Command Module is required)	29.95	24.00
PHD 5082	Word Beginnings™ (Extended BASIC Command Module is required)	29.95	24.00
PHD 5083	Exploring™ (Extended BASIC Command Module is required)	29.95	24.00
PHD 5084	Math Practices™ (Extended BASIC Command Module is required)	29.95	24.00
PHD 5085	Science Facts™ (Extended BASIC Command Module is required)	29.95	24.00

Available in Fourth Quarter 1982
 † Developed by Scott Foresman
 †† Developed by Milton Bradley—The Attack, Blast, Hustle, ZeroZap, Connect Four and Yahtzee are trademarks of Milton Bradley
 ††† Developed by Microsoft™, Inc. Multiplan™ is a trademark of Microsoft™, Inc.

Model	Name	Mfr. Sugg. Ret.	Elek-Tek Price
APPLICATION PROGRAMS CONTINUED			
Education/Personal Enrichment Continued			
PHD 5086	Natural Science™ (Extended BASIC Command Module is required)	29.95	24.00
PHD 5087	Social Science™ (Extended BASIC Command Module is required)	29.95	24.00
PHD 5088	Teacher's Tool Box™ (Extended BASIC Command Module and printer are required)	29.95	24.00
PHT 6007	Teach Yourself BASIC	29.95	24.00
PHT 6009	Music Skills Trainer	24.95	20.00
PHT 6011	Computer Music Box	14.95	12.00
PHT 6018	Market Simulation	14.95	12.00
PHT 6019	Teach Yourself Extended BASIC (Extended BASIC Command Module is required)	19.95	16.00
PHT 6026	Bridge Bidding I	24.95	20.00
PHT 6031	Speak & Math™ Program (Solid State Speech™ Synthesizer and Terminal Emulator II are required)	24.95	20.00
PHT 6039	Bridge Bidding II	24.95	20.00
PHT 6041	Bridge Bidding III	24.95	20.00
PHT 6042	Speller Writer (Terminal Emulator II Command Module and Solid State Speech™ Synthesizer are required)	24.95	20.00
PHT 6067	Beginner's BASIC Tutor	24.95	20.00

Model	Name	Mfr. Sugg. Ret.	Elek-Tek Price
Entertainment			
Command Modules			
Texas Instruments Packages			
PHM 3009	Football	29.95	24.00
PHM 3018	Video Games I	29.95	24.00
PHM 3023	Hunt the Wumpus	29.95	24.00
PHM 3024	Indoor Soccer	29.95	24.00
PHM 3025	Mind Changers	24.95	20.00
PHM 3030	A-Maze-Ing	24.95	20.00
PHM 3052	Tombstone City 21st Century	39.95	32.00
PHM 3053	TI Invaders	39.95	32.00
PHM 3054	Car Wars	39.95	32.00
PHM 3057	Munch Man	39.95	32.00
PHM 3042D	Tunnels of Doom (2 Diskette Games Included)	59.95	45.00
PHM 3042T	Tunnels of Doom (2 Cassette Games Included)	59.95	45.00
PHM 3058	Alpinist™	39.95	32.00
PHM 3110	Chisholm Trail	39.95	32.00
PHM 3112	Parsec	39.95	32.00
Milton Bradley Packages (Developed by Milton Bradley Company)			
PHM 3031	The Attack™	39.95	32.00
PHM 3032	Blastoff™	24.95	20.00
PHM 3033	Blackjack and Poker™	24.95	20.00
PHM 3034	Hustle™	24.95	20.00
PHM 3036	ZeroZap™	19.95	16.00
PHM 3037	Hangman™	19.95	16.00
PHM 3038	Connect Four™	19.95	16.00
PHM 3039	Yahtzee™	24.95	20.00
Adventure International Packages (Developed by Scott Adams)			
PHM 3041D	Adventure (Private Adventure Cassette Game Included)	49.95	40.00
PHM 3041T	Adventure (Private Adventure Cassette Game Included)	49.95	40.00
Gabriel Industries Packages (Developed by Gabriel Industries)			
PHM 3067	Orion™ (Developed by Gabriel Industries)	39.95	32.00

Model	Name	Mfr. Sugg. Ret.	Elek-Tek Price
Texas Instruments Packages			
PHD 5002	TI Trek (with optional speech)	14.95	12.00
PHD 5010	Mystery Melody	14.95	12.00
PHD 5015	Oldies But Goodies—Games I	19.95	16.00
PHD 5017	Oldies But Goodies—Games II	24.95	20.00
PHD 5025	Saturday Night Bingo (Solid State Speech™ Synthesizer is required)	29.95	24.00
PHD 5037	Draw Power (Extended BASIC Command Module is required)	24.95	20.00
PHD 5057	Tombstone City 21st Century (32K Memory Expansion and Extended BASIC Command Module are required)	19.95	16.00
PHD 5058	TI Invaders (32K Memory Expansion and Either Extended BASIC or Editor/Assembler Command Module are required)	19.95	16.00
PHD 5060	Munch Man (32K Memory Expansion and Either Extended BASIC or Editor/Assembler Command Module are required)	19.95	16.00
Adventure International Adventure Series (Developed by Scott Adams) (PHM 3041D required)			
PHM 5046	Adventureland	29.95	24.00
PHD 5047	Mission Impossible	29.95	24.00
PHD 5048	Voodoo Castle	29.95	24.00
PHD 5049	The Count	29.95	24.00
PHD 5050	Strange Odyssey	29.95	24.00
PHD 5051	Mystery Fun House	29.95	24.00
PHD 5052	Pyramid of Doom	29.95	24.00
PHD 5053	Ghost Town	29.95	24.00
PHD 5054	Savage Island I & II	39.95	32.00
PHD 5056	Golden Voyage	29.95	24.00

Model	Name	Mfr. Sugg. Ret.	Elek-Tek Price
Texas Instruments Packages			
PHD 6010	Mystery Melody	9.95	9.00
PHT 6015	Oldies But Goodies—Games I	14.95	12.00
PHT 6017	Oldies But Goodies—Games II	19.95	16.00
PHT 6025	Saturday Night Bingo (Solid State Speech™ Synthesizer is required)	24.95	20.00
PHT 6037	Draw Power	19.95	16.00
Adventure International Adventure Series (Developed by Scott Adams) (PHM 3041T required)			
PHD 6046	Adventureland	29.95	24.00
PHD 6047	Mission Impossible	29.95	24.00
PHD 6048	Voodoo Castle	29.95	24.00
PHD 6049	The Count	29.95	24.00
PHD 6050	Strange Odyssey	29.95	24.00
PHD 6051	Mystery Fun House	29.95	24.00
PHD 6052	Pyramid of Doom	29.95	24.00
PHD 6053	Ghost Town	29.95	24.00
PHD 6054	Savage Island I & II	39.95	32.00
PHD 6056	Golden Voyage	29.95	24.00

Model	Name	Mfr. Sugg. Ret.	Elek-Tek Price
OTHER APPLICATION PROGRAMS			
Command Modules			
PHM 3001	Demonstration	69.95	58.00
PHM 3011	Speech Editor (Solid State Speech™ Synthesizer is required)	44.95	36.00
PHM 3014	Statistics (Data storage system is recommended)	49.95	36.00
PHM 3026	Extended BASIC	99.95	75.00
PHM 3035	Terminal Emulator II	49.95	40.00
PHM 3055	Editor/Assembler	99.95	80.00
PHM 3058	Mini-Assembler	99.95	80.00
PHM 3045D	SMU Electrical Engineering Library (2 Diskettes included)	149.95	120.00
PHM 3045T	SMU Electrical Engineering Library (10 Cassettes included)	149.95	120.00
PHD 5004	Programming Aids I	14.95	12.00
PHD 5005	Programming Aids II	24.95	20.00
PHD 5006	Math Routine Library	29.95	24.00
PHD 5008	Electrical Engineering Library	29.95	24.00
PHD 5012	Programming Aids III	29.95	24.00
PHD 5013	Graphing Package	19.95	16.00
PHD 5016	Structural Engineering Library	29.95	24.00

WHAT COMPUTER ?

I shall try and be as honest as I possibly can as I write this. But which computer to buy is a kind of forgone conclusion if you are reading this. But for your friends that have not made up their minds, let them read this.

I shall assume that you already have made up your mind that you want a computer. If you have not we are at an impasse. OK so you have decided that you need one, but which one.

Maybe the first question you should answer is just how much money can you really afford? If you have a wife and family you better add in the question of how much money will my wife let me spend?

The amount of cash available will determine the range of your choice. Also look at it with this in mind; just how much do you spend on night out with your wife or girlfriend? If you are into meals, movies, and clubs then you could well say goodbye to \$50.00 - \$75.00. Also if you are a heavy smoker think of the computer system you could have if you did not smoke.

If you still can not see where the cash will come from remember that the Sinclair ZX81 is as low as \$89.00 !!

Once the money is out of the way answer the question of who will be using the computer? The reason for this question is that a computer is tough and usually well made, but there is a limit to the use and abuse that the machine can take. Computers do not like peanut butter and jelly sandwiches as well as your kid brother or baby girl. Nether does the computer need to drink the latest diet soda to stay thin. I hope you get the point.

If you have young people who will be using the computer then you better plan on getting a computer that can handle joy sticks. I doubt if the computer will be for all work and no play: do you?

The main reason for joy sticks is

to stop the hammering on the keyboard that will happen if you have no sticks. No the joy sticks are not usually as fast in responding as are the keys, but they are cheaper than buying a new keyboard.

So far you have decided on a price range and who will be using the computer. Now exactly what are you going to do with this machine? Are you going to play games, use it in your business, help educate your family, or use it as a glorified calculator?

For heavy business work you had better look at the programs that you can buy. Such as spread sheets, invoice in and out, wage calculations, and keeping track of merchandise. The computer of your choice had better be able to handle all this; and more.

In educational areas you had better look at the quality of the programs. Make shure that what you are buying is not a second rate flop priced high and in nice wrappings. Educational programs must be that, educational. However, to be educated can and should be fun for your kids. The wider the choice the better, and also look into structured programs.

If games are all you are after then you had better look into buying a game machine and not a computer.

The choice of what your price range is, who will be using it, and what you want the computer for should help you in getting a short list of possible computers. Remember that no machine does it all, unless you are willing to pay for it.

Other points to think about are :-

- 1) Expandability. Can the computer expand up as you have more money, or are you limited to what you can buy.
- 2) Memory limitations. 16K just will not make it with some applications.
- 3) Does it need a monitor or can you use your TV set.
- 4) Can it have a speech synthesizer added.
- 5) What about the quality of the colours shown on the screen. Do they look clean and sharp.
- 6) Just how detailed can you get in showing a circle on the screen. If the circle looks too 'boxy' you know the graphic quality is low.

- 7) Is the keyboard a real keyboard as you would expect on a typewriter or does it have small square keys that do not feel like much, or even does it have a membrane keyboard. This last one -membrane- has no keys but an area you press that acts the same as a key.
- 8) What about servicing your computer if something goes wrong.
- 9) Is the shop that you bought your computer able to help you with your questions

- 10) Is there a publication and/or a local user group near by.
- This is not all, but some of the questions that you need to think of. Of course I hope that you buy a TI P.C. as I feel that it is an excellent computer, But that is my view on these questions. Happy hunting.

###

COMPUTER APPRENTICES WORKSHOP

Back at the workshop things have been busy. I hope that you have managed to wander through all that was said in the last issue and now have a good idea on how to deal with numbers and equations.

A computer is not just a glorified hand calculator, it has versatility. This versatility comes in the form of the ability to manipulate letters, words or even whole sentence.

you may wonder if this is of any importance. The answer may depend on your point of view. With the ability to manipulate words about you now have a small word processor. Now do not get carried away by such big words. I am talking word processor more in a figurative than a literal way.

Before going any further it is time to do some programming. Type in...

```
100 A$="THIS IS YOUR FRIENDL
Y COMPUTER"
110 B$="I CAN DO HANDLE WORD
S FAIRLY WELL"
120 C$="BUT I HAVE A HARD TI
ME WITH NUMBERS"
130 PRINT A$&B$&C$
140 END
```

If you run this program you should see the words come out right after each other. This is called concatenation. That is the joining of two or more letters (or words) together. The only problem with what is printed on the screen is that the words are broken on the right hand side of the screen. To get around this, type in the words carefully so that there is no word that cuts the 32nd spot. I had better put that another way. The print line is 32 characters long and if you have a word that occupies positions 32 and 33, the word will be split at that point.

Avoiding splitting words can make a program look sharp and more readable. If you do not believe me see how many bought or professionally written programs split words.

Try this...

```
100 A$="THE QUICK BROWN FOX
JUMPED OVER THE LAZY D
OG"
110 PRINT A$
120 END
```

See what a difference the gap between 'jumped' and 'over' makes. You

should remember this little trick in making your programs a little better to read.

String expressions can be manipulated by using the command SEG\$. Several examples will show you exactly what I mean.

```
100 A$="THIS IS AN EXAMPLE,  
BUT NOT ALL THAT CAN BE DONE  
."  
110 PRINT SEG$(A$,1,7)&SEG$(  
A$,28,22)  
120 PRINT :SEG$(A$,1,7)&SEG$(  
A$,25,7)  
130 END
```

You should get a printing like this...

THIS IS ALL THAT CAN BE DONE.

THIS IS NOT ALL

The SEG\$ works like this. SEG\$ stands for SEGment, or part there of. By using the SEG\$ command you are stating that you want a part of something. The first field inside the parenthesis is the field you are interested in. A\$ in this case. The number 1 (one) states that you want to start at character one in the field A\$. the third part of what is inside the parenthesis is the length of what you are interested in. In this case 7 (seven) characters.

Stated again, you want to get a SEGment of string A\$, starting at the first character for a length of seven characters. That relates to...

THIS IS

The '&' sign is to tell the computer that you wish to join two strings of characters together. You can only do this with characters, not numerical numbers.

The second field turns out to be from A\$ but starting at character

twenty eight and for a length of twenty two characters. This is...

ALL THAT CAN BE DONE.

Concatenating the two together you get what we said above. That is...

THIS IS ALL THAT CAN BE DONE.

This looks so different from what was said when we wrote string A\$. This is one of the powers of string manipulation. Let us look at another aspect of this power. Enter this...

```
100 CALL CLEAR  
110 A$="THE QUICK BROWN FOX  
JUMPED OVER THE LAZY DOG."  
120 INPUT "<ENTER> YOUR SEAR  
CH WORD ":B$  
130 LE=LEN(A$)  
140 LF=LEN(B$)  
150 FOR K=1 TO LE  
160 IF B$=SEG$(A$,K,LF) THEN  
200  
170 NEXT K  
180 PRINT "WORD NOT FOUND."  
190 END  
200 PRINT "WORD FOUND."  
210 END
```

You have the ability to search for words in a string, sentence, paragraph or even in a book. With this search you can then look for words and, once found, change them. To do something like that would take quite some overhead and would not be really worth it as that will put you into word processing. There are enough word processors in the world and more coming out as the weeks go by.

Is string handling of any worth then? I think so more for business applications than the average run or the mill program. Even in TI BASIC you have the necessary tools to have fun and explore the word of string handling.

The commands that the TI P.C. has that you will use are :-

(being a number) into a numerical number that you can do mathematical calculations with. Two examples follow that I hope illustrate what I mean...

```
100 CALL CLEAR
110 INPUT "<ENTER> YOUR NAME
":A$
120 INPUT "<ENTER> YOUR ADDR
ESS ":B$
130 IF ASC(SEG$(B$,1,1))<48
THEN 200
140 IF ASC(SEG$(B$,1,1))>57
THEN 200
150 X=POS(B$," ",1)
160 C=VAL(SEG$(B$,1,X))
170 PRINT "ARE YOU SURE THAT
YOU LIVE AT ";C
180 INPUT D$
190 END
200 INPUT "DOES YOUR HOUSE H
AVE A NUMBER ? ":Q$
210 IF Q$=CHR$(89) THEN 120
220 GOTO 190
```

In the example above I am getting the number of the house from your response in B\$. To get the number I first must make sure that you have a number, once determined I then have to get the number and show it to you for conformation. Line 190 would be where the program continues, but for my purpose it is the end.

I had to use several little tricks to do what I wanted, and this is the case when manipulating words, sentences and paragraphs.

```
100 CALL CLEAR
110 INPUT "<ENTER> YOUR NUMB
ER ":A$
120 X=POS(A$,".",1)
130 IF X=0 THEN 300
140 LE=LEN(A$)
150 B$=SEG$(A$,1,X-1)
160 C$=SEG$(A$,X,LE)
170 CALL CLEAR
180 PRINT "YOU HAVE ";B$;" W
HOLE NUMBERS."
190 PRINT "AND ";C$;" AFTER
THE DECIMAL POINT."
200 D=VAL(B$&C$)
210 E$=STR$(D)
```

```
220 PRINT "THAT IS ";D
230 PRINT "THE QUICK BROWN
FOX JUMPED OVER THE ";E$;" D
OG."
240 END
300 LE=LEN(A$)
310 B$=A$
320 C$=""
330 GOTO 170
```

This is more a finger exercise in what you can do with a number, be it whole or a number with fractions. The program works 'better' with a number that has fractions. Notice that 'D' and E\$ are the same to look at, but only 'D' has the ability to be used in a mathematical setting.

Let me try and make some sense to all this string manipulation.

The places where you would need string manipulation are somewhat limited when dealing with BASIC. Mainly because BASIC does not lend itself to this task too well. Not to say that you can not do it, but in a large program a faster language would be more advantageous. The first alternative language that comes to mind is ASSEMBLY. However for small programs, where time is not a constraint, BASIC is fine.

Now where would you be needing the ability to manipulate strings. The first idea that comes your way might be when writing something. But you have word processors to do all that, so where? How about file editing. Say you have a file full of names, addresses, phone numbers and S.S. numbers and you want to find all your friends that have a S.S. number with 55 in the middle. I.E. 123-55-7300. With your ability to work with strings you could devise a program to do it. I suppose most of the needs would be more of a business type program, and you bought the TI P.C. for fun and games. If this was the case then you may forget this column and read no more.

How does the ability of the TI BASIC in string handling compare to other computers.

Basically the TI P.C. does its job well. I looked at ASC, CHR\$, LEN, POS, SEG\$, STR\$, and VAL. Of course there

ASC This command will give you the ASCII value of a specific letter or number. Maybe the best use of this command is with the HCHAR and VCHAR commands. But do not get limited with those two commands.

But as usual there is always something interesting that you can do to spice up a program. Spicing up programs does not mean that you go all out to fool a person who is interested in the program, but more to do a boring and common item in a different way. But dot using an over kill. Look at this...

```
100 CALL CLEAR
110 INPUT "WHAT IS YOUR NAME
? ":A$
120 INPUT "ARE YOU SURE ? ":
B$
130 IF ASC(B$)=89 THEN 140 E
LSE 110
140 PRINT "WELL DONE";A$
150 END
```

In line 120 you could enter YES or 'Y' or even YEH. It would not matter since the command ASC will return the number of the first character in the given string. In this case the string was B\$ and what we were looking for was the character 'Y' and nothing else.

CHR\$ This command is more the opposite of ASC than anything else. Last time we were interested in getting a number from a character, now we are after the character from the number. Look at this short program...

```
100 CALL CLEAR
110 Z$=CHR$(87)&CHR$(104)&CHR$(97)&CHR$(116)
120 X$=CHR$(65)&CHR$(114)&CHR$(101)
130 W$=CHR$(89)&CHR$(111)&CHR$(117)
140 V$=CHR$(68)&CHR$(111)&CHR$(105)&CHR$(110)&CHR$(103)
150 U$=CHR$(72)&CHR$(101)&CHR$(114)&CHR$(101)
160 PRINT Z$&X$&W$&V$&U$;"?"
170 END
```

You could always do the yes/no this way...

```
222 IF A$="Y" THEN 888
```

Try writing it as...

```
222 IF A$=CHR$(89) THEN 888
```

Not much in it, but the latter has a more elegant look about it -big deal?

I assume that the command LEN does not fool anyone. It is one of the few commands that are self explanatory. I have used it enough for anyone to get the hang of it.

POS The actual use of this command eludes me at the moment. I have never found a need in any of my programs. That does not mean that there is no use for it, just that I have not found one. But try this program for an illustration...

```
100 CALL CLEAR
110 Z=X=0
120 A$="THE QUICK BROWN FOX
JUMPED OVER THE LAZY DOG"
130 LE=LEN(A$)
140 B$="E"
150 PRINT B$;
160 FOR I=1 TO LE
170 Z=POS(A$,B$,I)
180 IF Z=0 THEN 230
190 IF Z=X THEN 220
200 PRINT Z;
210 X=Z
220 NEXT I
230 END
```

In this program I am searching for the numerical location of all the letter 'E's in the string A\$. By using the two print statements I can get a listing of all of them. Maybe it has some value in a program, one day.

STR\$ & VAL These two are related in as much that one is the alternate of the other. STR\$ converts a number to a string that has the same appearance as the number, and VAL changes a string

are computers that have some odd commands like DATE\$ or STRING\$ but these are more of a supplement to the ones I have already stated. All the other commands are nice to have but not necessary.

The command POS is not a common command. The only other computer I could find -out of ZX81, Radio Shack Color Computer and Model II, and IBM P.C.- was the IBM P.C. But you expect only the best for that kind of money. The IBM P.C. called POS by another name, but it did the same job. This name difference is one of the problems with not having a definite standard for the BASIC language.

The other command that is different was SEG\$. TI saw fit to combine LEFT\$, RIGHT\$, and MID\$ all into one command. I do not think the TI P.C. owner loses anything by having SEG\$ and not the other three commands. The only problem that I have found is remembering what the other three commands do when translating a program

into TI BASIC.

The three commands (LEFT\$, RIGHT\$ & MID\$) are the most common among all the other small personal computers. One major exception -by reason of numbers sold- is the Sinclair ZX81. This computer uses a technique called "slicing" in getting a portion of a string. This same computer has one other major difference, it does not use ASCII code. This may not seem much to write about but to some it is. Mr. Sinclair devised his own code in the ZX81 but installed ASCII in the new ZX Spectrum computer. Not using the ASCII code is a limitation because it eliminates a great deal of programs that could be used. Also you limited to the hardware you can buy.

Those are about the only differences worth mentioning. I hope you now have enough to go out and conquer the string manipulating step and go on to bigger and better thing.

###

PRESS AND PAPER REVIEW

The popular computing press is replete with odds and ends that do apply to the TI P.C. but the expense of buying all the magazines that you would to read all these little odds and ends would be great.

As far as I can see magazines fall into three groups -my simplification.

1. Magazines that are directed at a certain computer or computer family. This family would be so closely related that the magazine does not look like a composition of several unrelated parts.

2. Magazines that cater for several different computers and has

projects and programs that can be applied to only one or two computers.

3. The magazine that is directed at the electronics person -remember the computer came from the electronics people- and has computers as an extension of projects or helps you understand what goes on inside a computer. But computers are not the main thrust of the magazine.

All this reading is time consuming, expensive, and -more importantly- your wife will not stand for it. For more on how wives feel about their computer husband read TIME magazine, August 30, 1982 page 30. We

at UNOFFICIAL hope to cover what you need to know for the TI P.C.

Starting off this issue are two articles about the P-System. The first one is to be found in the PC Magazine October 1982, written by Thomas H. Woteki and Alan Freiden, and starting on page 74. PC Magazine is the magazine for the IBM PC computer.

This article is designed as an introduction to the UCSD P-System to those who are not shure what it is and does. One of the statements that catch the eye is "The P-System is more than an operating system. It is a comprehensive programming environment conducive to the development and execution of programs." And then the article proceeds to tell you why the P-System is so good. The article lets you know how good the editor is -and this will be bore out in the next review. Woteki and Freiden explain that the central concept of the P-System is the hypothetical machine called the p-machine. This is where the TI P.C. comes in. The faithful TI P.C. can be this 'p-machine' just as well as can the IBM PC that this article is talking about; that is why this article is of some interest to the TI P.C. owner.

The article written by Woteki and Freiden is followed by one from Softech Microsystems which markets the UCSD P-System for the IBM PC. This article is more of a factual list about the P-System and covers such items as who has the P-System, command and programming languages, and other interesting facets of the P-System. An informative and well balanced article.

I am stuck with telling you about what is available for the IBM PC as a roundabout way is letting you know about the TI P.C. In this case it is a word processor and can be found in Computers and Electronics January 1983, and starting on page 65. Power Text by Beaman Porter Inc. is a word processor for the IBM PC but uses the UCSD P-System extensively. An interesting quote is "This is unique only to the nonPascal world since users of the UCSD Pascal have long known that the UCSD Editor is one of the powerful editors. It lacks only one essential

subsystem to make it into a complete word-processing package."

The rest of the article lets you know about the pros and cons to Power Text.

If you read these two articles you get the feeling of the power in the UCSD P-System.

And now onto something different. In the February issue of the IEEE Spectrum magazine is an advertisement from TI for the all new Compact Computer 40 -called the CC 40. The CC 40 looks like a Sharp or Radio Shack hand held computer except it has more to offer. Read more about the CC 40 and the TI In 1983 articles.

Getting back to the real press, the January 3, 1983 issue of TIME was largely devoted to the computer under the title of Machine of the Year. This title of Machine of the Year is the Man of the Year accolade but given to a machine.

"It is easy enough to look at the world around us and conclude that the computer has not changed things all that drastically. But one can conclude from similar observations that the earth is flat, and that the sun circles it every 24 hours. Although everything seems much the same from one day to the next, changes under the surface of life's routines are actually occurring at almost unimaginable speed. Just 100 years ago, the German engineer Gottlieb Daimler began building a gasoline-fuled internal combustion engine (three more years passed before he fitted it to a bicycle). So it is with the computer."

The articles cover the wide story of computers as good as anyone can from several angles. Covered is computers by price; stories on what computers are doing on the farm; the Apple story; medical applications; and computers in the field of education. As you can see a detailed article.

For the TI owner the article calls the TI 99/4A "a sleeping giant" and states, "At the moment, Dataquest estimates that Texas Instruments leads the low-price parade with a 35% share of the market in computers selling for less than \$1000."

The press is replete with

statistics and it is hard to really know what that percentage is based on and how accurate the company is that is giving the figures.

If you are not too shure about buying a computer read this article in TIME and see if your ideas about computers do not change for the better.

I stated that COMPUTE ! magazine was interested in printing a column on the TI P.C. and so it is. Well the mysterious Regina is doing one column on a regular basis and even did an article that has the same program written for the Radio Shack, Atari and the TI 99/4A. Not bad for one person. I would not rush out, buy COMPUTE ! and hope to be swept off my feet. This column is sort of general and seems to be geared to the person who does not have a computer and is interested in reading about the different computers. But that is not to say the column can not or will not change or develop. Pick up a copy of COMPUTE ! and have a look at the column written by the mysterious Regina; why mysterious I do not know, but that is what I read about her.

So onto a book review. There are not many books available for the TI P.C. aside from the ones gained when buying the computer, but there are a few written. This is one of the few.

The book is called "Programming BASIC with the TI Home Computer" written by Herbert D. Peckham. The book is in the Texas Instruments Software Series and is published by McGraw-Hill Book Company. The price is a fat \$14.50 plus tax.

On the cover it states, "'Programming BASIC" is a tutorial guide that helps you learn TI BASIC in a friendly, relaxed manner. It goes beyond the "Beginner's BASIC" furnished with the Texas Instruments Home Computer-so you can explore the full range and power of the TI BASIC, including color graphics and sound."

The cover statement above is a very bold statement to make, and I feel that the book just does not live up to it. Do not get me wrong, the book is good as far as it goes, but I feel that it does not go far enough. Enough of what I think, let us have a look at the

book.

The book is 305 pages long and contains eleven chapters which are :- The Texas Instruments Home Computer and Basic; Getting Acquainted with your Home Computer; Introduction to BASIC; Computer Arithmetic and Program Management; Input, Output and Simple Applications; Decisions, Branching, and Applications; Looping and Functions; Working with Collections of Information; "Do-it-yourself" Functions and Subroutines; Random Numbers and Simulations; and Subprograms.

As you can see not too different from the book on BASIC that came with the computer, and that to me was the most interesting point. This book is too similar to what you have for the large price of \$14.50 plus tax. If the price was about \$7.50 then it would be worth it, but at the going price you could do better else where.

Better get back to the book. Each chapter has questions in it that have not answer in the back of the book, nor anywhere else. This to me is very strange as if you are not sure what you are doing, you get no help from the book. At the end of each chapter there is a set of questions that have answers at the back of the book, to help cement what you have learned. These questions include writing short programs, and if you have problems, the answer is there to help you.

Through out the book there are short programs to illustrate certain points and these are well worth entering in and following, but if you have a fairly decent understanding of BASIC this book may be too simple for you.

At the end of the book are a couple of interesting programs, but these only make you wish there was more. The one I liked the most was playing the French tune "Frere Jacques." You have to run this program to fully enjoy the musical ability of the TI P.C. However this book does not go into the CALL functions in great detail and I feel that this is a sad point.

"Programming BASIC" is an good book, but not at that price.

###

AMORE AMORTIZATION

At the time of writing this column the interest rates are all over the place. You can buy a 1982 car or truck for 6% at some dealers in Houston. Houses are at a low of 12%; if you go FHA. It is a very confusing game at the moment especially with the ever passible chance of interest rates going back up. What do you do; buy now or wait...

Here are two amortization programs to help you in the battle to do the right thing at the right time.

The first program is a more general type of amortization program which is useful before you decide on a course of action, and the second program will cover the exact analysis of your decision.

In both programs the same basic formula is used. I am taking it from "Principles of Engineering Economy" by Eugene L. Grant, W. Grant Ireson, and Richard S. Leavenworth. Chapter 4 covers all types of interest formulas, and this is where you can look for further information.

The basic formula is :-

$$A = P \frac{i}{(1+i)^n - 1} + i$$

Where 'A' is the end of period payment. In this case your monthly payments.

Where 'P' is the present sum of money. In this case your balance.

Where 'i' is the interest rate per period.

Where 'n' represents the number of interest periods.

The formula looks impressive, but how does it work in reality. Look at this example.

you are buying a house that costs \$75,000.00 You are going to place \$5,000.00 down and finance the

\$70,000.00 with the XYZ Finance Co. The rate they offer is 13.5% over 30 years.

$$P = 700000$$

$$i = 13.5/1200 \quad 13.5 / 100 = 0.135$$

then $0.135 / 12 =$
int per mth.

$$n = 30*12 \quad 30 \text{ yrs} * 12 \text{ mths in}$$

a yr

Enter all that in on your calculator and you should get an answer of \$801.79 per month. If you have your insurance, tax or rates added on to your monthly payment, that is not included in this calculation.

In each program you will not find the formula is not exactly as I have it above, it has been modified to work on the computer. But if you look carefully you will see how it has been reworked.

Listing Number 1.

```

100 CALL CLEAR
110 INPUT "<ENTER> NUMBER OF
YEARS OF LOAN ":Y
120 N=Y*12
130 PRINT
140 PRINT "<ENTER> LOWEST &
HIGHEST INTEREST RATES, U
SING THE FORM XX,YY"
150 INPUT "E.G. 9% & 12% ARE
ENTERED AS 9,12 ":K,W
160 PRINT
170 INPUT "<ENTER> INTEREST
INCREMENTS BETWEEN THE TWO R
ATES ":A1
180 CALL CLEAR
190 INPUT "<ENTER> THE AMOUN
T OF THE LOAN. ":L
    
```



```

200 CALL CLEAR
210 PRINT "      ";Y;"YEARS
LOAN."
220 PRINT "      -----
-----"
230 PRINT "  LOAN OF $";L
240 PRINT
250 PRINT "INTEREST";"AMT PE
R MTH"
260 PRINT
270 FOR Z=K TO W STEP A1
280 I=Z/1200
290 P=L/((1-EXP(LOG(1+I)*(-N
)))/I)
300 PP=INT(P*100+0.5)/100
310 PRINT Z,PP
320 NEXT Z
330 INPUT "START AGAIN (Y/N)
":Q$
340 IF Q$="Y" THEN 100
350 END

```

Line 290 is the main formula line. You can 'see' the formula as stated above. Line 300 limits 'P' to two decimal places and calls the number 'PP'. This is done so as to avoid the list of numbers after the second decimal number.

Listing Number 2.

```

90 CALL CLEAR
100 DIM MO$(12)
110 INPUT "<ENTER> LOAN AMOU
NT ":AMT
120 INPUT "<ENTER> INTEREST
RATE (E.G. 10.5% IS 10.5) ":
IN
130 INPUT "<ENTER> NUMBER OF
YEARS OF LOAN ":X
140 NO=X*12
150 INPUT "<ENTER> THE MONTH
OF FIRST PAYMENT (EG DUE I
N JAN) ":F$
160 INPUT "<ENTER> THE YEAR
OF FIRST PAYMENT ":Y
170 FOR T=1 TO 12
180 READ MO$(T)
190 IF MO$(T)=F$ THEN 230
200 NEXT T

```

```

210 PRINT "TRY AGAIN !!!!!!!
220 INPUT "<ENTER> THE MONTH
OF FIRST PAYMENT ":F$
222 RESTORE
223 GOTO 170
230 R=IN/1200
240 V=(R+1)^NO
250 P=(R*V*AMT)/(V-1)
260 P=INT(P*100+0.5)/100
266 CALL CLEAR
270 PRINT "MONTHLY PAYMENT I
S ":P
280 PRINT "MO    BAL    AMT  A
PP TO"
290 PRINT "      DUE    PRIN
INT"
300 FOR T=1 TO NO
310 MI=AMT*R
320 MI=INT(MI*100+0.5)/100
330 S=P-MI
340 B=AMT-S
350 AMT=B
360 PRINT T;B;S;MI
370 X=X-1
380 TMI=TMI+MI
390 IF X=0 THEN 440
400 NEXT T
410 PRINT
420 PRINT "INTEREST FOR YEAR
";Y;"IS";TMI
430 END
440 PRINT
450 PRINT "PAYMENT IS ",P
460 PRINT "INTEREST FOR YEAR
";Y;"IS ":TMI
470 X=12
480 Y=Y+1
490 MTI=0
500 GOTO 400
510 DATA DEC,NOV,OCT,SEP,AUG
,JUL,JUN,MAY,APR,MAR,FEB,JAN

```

The second program is a more comprehensive program in that it will show you the month number, your balance on the loan, the amount of your monthly payment that goes toward the balance, and the amount of the same monthly payment that goes on interest. It is a real eye-opener when you see just how little you pay on the principle in the beginning.

The programs ask all the necessary questions as you work through them. The only problem in the second listing

is that the numbers get too big to go four numbers on one line. So the last number often is dropped to the next line.

I hope that these programs are of some use as we need to know how we stand financially as we -hopefully- come out of a recession.

###

QUICKIES

QUICKIE # 10

The Sieve of Eratosthenes in the last issue of UNOFFICIAL were good, and when BYTE published its Sieve revisited I was kind of interested to see the difference between the two approaches. I have rewritten the BYTE'S Sieve for you to run. They used a WHILE - WEND loop which TI BASIC does not have, but all the rest is the same.

```
90 CALL CLEAR
100 DIM FLAGS(8191)
110 PRINT "10 ITERATIONS"
120 FOR M=1 TO 10
130 COUNT=0
140 FOR I=0 TO 8190
150 FLAGS(I)=1
160 NEXT I
170 FOR I=0 TO 8190
180 IF FLAGS(I)=0 THEN 270
190 PRIME=I+I+3
200 PRINT PRIME
210 K=I+PRIME
220 IF K<=8190 THEN 230 ELSE
260
230 FLAGS(K)=0
240 K=K+PRIME
250 GOTO 220
260 COUNT=COUNT+1
270 NEXT I
280 NEXT M
290 PRINT COUNT;"PRIMES."
300 END
```

Of course if you do not have the expansion box with the extra 32K of memory you can not run such a large program. The program occupies about 32K of memory. If you have only the built in 16K of memory you shall have to do some altering. The largest one dimensional array you can have is about 1750 elements large.

QUICKIE # 11

If you are tired of looking at sieves then you will not like this next Quickie. It is a translation of an improved Sieve program written in FORTRAN by Charles Marcus.

```
1000 DIM FLAGS(8191)
1010 PRINT "10 ITERATIONS"
1020 FOR INER=1 TO 100
1030 COUNT=0
1040 FOR I=1 TO 8191
1050 FLAGS(I)=1
1060 NEXT I
1070 K=4
1080 LAST=1
1090 FOR I=1 TO 8191
1100 IF FLAGS(I)=0 THEN 1140
1110 PRIME=I+I+1
1120 COUNT=COUNT+1
1130 PRINT PRIME
1140 IF LAST=0 THEN 1180
```



```

1142 FOR J=K TO 8191 STEP PR
IME
1144 FLAGS(J)=0
1146 NEXT J
1150 K=K+I+I+I+I+4
1160 IF K>=8191 THEN 1170 EL
SE 1180
1170 LAST=0
1180 NEXT I
1190 NEXT INER
1200 PRINT COUNT;"PRIMES
1210 END

```

And that is the final end of the famous Sieve of Eratosthenes !!!

QUICKIE # 12

Benchmark tests come and go, all prove one thing or another and not add up to much. In the February 1983 issue of Popular Computing (page 14) there is another benchmark test. Just as the Sieve showed the TI P.C. to be one of the slowest computers, this program shows the TI P.C. to be one of the most accurate computers about. Enter this revised program from Popular Computing...

```

100 CALL CLEAR
110 K=0
120 J=0
130 FOR I=1 TO 1000
140 R=SQR(I*I)-I
150 IF R<>0 THEN 170
160 GOTO 190
170 PRINT "FOR ";I;"THE ERRO
R IS ";R
180 J=J+1
190 K=K+ABS(R)
200 NEXT I
210 PRINT "THE NUMBER OF ERR
ORS IS ";J
220 PRINT "CUMULATIVE ERROR
IS ";K
230 END

```

Line 140 is where it is all at in this program. If 'I' is equal to 3, then $SQR(I*I)$ should equal 3, and the whole line should equal zero. But does it ?

This is what is found...

COMPUTER	LANGUAGE	NO OF ERRORS	CUMUL' ERROR
ZX 81	ZX BASIC	867	0.000432
APPLE II	APPLESOFT	954	0.0002908
R.S. MOD II	LEVEL II	822	0.0811372
TI 99/4(A)	TI EX-BAS	0	0.0
TI 99/4(A)	TI BASIC	0	0.0
R.S. CO-CO	LEVEL II	847	0.0003285
HP PC	HP BASIC	0	0.0

Change line 140 to...

```
140 R=SIN(I)^2+COS(I)^2-1
```

In this case the story was a little different.

COMPUTER	NO OF ERRORS.	CUMUL' ERROR
R.S. CO-CO	834	3.26922E-5
TI 99/4(A)	656	3.31035E-9
ZX81	697	4.13507E-7
USING...		
HP BASIC		2.28E-10
CBASIC 2.0		2.16E-10
MBASIC 5.0		1.43E-4
APPLESOFT BASIC		2.91E-4

It looks very impressive, but see what you think.

QUICKIE # 13

In the real world of TI BASIC you have a screen that starts at the bottom and moves up. Also you do not have the

ability to place words where you want on the screen. In EXTENDED BASIC you do. So being the poor mans relative we have to improvise.

Try this Quickie before moving on to the next one.

```
100 CALL CLEAR
110 INPUT "<ENTER> 'R' ":R
120 INPUT "<ENTER> 'C' ":C
130 INPUT "<ENTER> YOUR STRI
NG ":A$
140 CALL CLEAR
150 CALL SCREEN(1)
160 FOR I=1 TO LEN(A$)
170 CALL HCHAR(R,C+I-1,ASC(S
EG$(A$,I,1)))
180 NEXT I
190 CALL SCREEN(9)
200 INPUT "TRY AGAIN ? ":Q$
210 IF Q$="Y" THEN 100
220 END
```

All you need for this program is to know the Row and Column you wish your String to go into

This may seem simple, it is but it is also a learning tool for bigger and better things.

QUICKIE # 14

If the Quickie above was too simple try this adaptation...

```
100 CALL CLEAR
110 DIM A$(20)
120 FOR I=1 TO 20
130 READ A$(I)
140 IF A$(I)="END" THEN 200
150 NEXT I
160 GOSUB 500
170 CALL SCREEN(9)
180 FOR P=1 TO 5000
190 NEXT P
200 END
500 CALL SCREEN(1)
510 FOR I=1 TO 20
520 IF A$(I)="END" THEN 590
```

```
530 R=VAL(SEG$(A$(I),1,2))
540 C=VAL(SEG$(A$(I),3,2))-5
550 FOR J=5 TO LEN(A$(I))
560 CALL HCHAR(R,C+J,ASC(SEG
$(A$(I),J,1)))
570 NEXT J
580 NEXT I
590 RETURN
600 DATA "0102THE QUICK BROW
N FOX JUMPED"
610 DATA "0202OVER THE LAZY
DOG."
630 DATA "0902THIS IS LINE N
UMBER 9, DO"
640 DATA "1002YOU LIKE IT ??
650 DATA "2015OVER HERE !!"
660 DATA "2129HERE"
670 DATA "2210WATCH THIS LIN
E MOVE UP"
```

What we are going to print is kept in the data statements. When the program is executed the data moves into the array 'A\$' and from there is printed out as stated by the location numbers in the data. If you want to see how the program works more clearly REMark out lines 170 and 500

Lines 180 and 190 are put there to 'hold' the screen for you to look at. Without this DO-LOOP the screen would move up because the system prints the word DONE when you end the program. This is what happens when the loop is finished. That is something you have to live with and work at.

The one disadvantage to this method of printing words on the screen is speed. This is a slow way of doing business; but it looks very good

With this complete program you can see how to alter it to fit your own needs so as to make your TI BASIC programs more interesting.

QUICKIE # 15

This program comes from Roberta Knoblauch, 321 E. Church Street, Lewisville, Tx 75067. The program is called WORDLIST and is written in TI EX-BASIC. Her program is mainly geared to the reading or language instructor in as much as they can use this program

for reviewing lessons, books or other reading matter word by word. Roberta states, "...the teacher can review all the words of the lesson and see where further instruction or help may be needed.

"Enclosed is a copy of the listing of WORDLIST, which I have modified slightly (lines 101-103) to handle the non-English-alphabet characters of Esperanto. This shows how easily the program can be modified to suit the letters of any language being studied.

"The array size (line 100) may of course be modified. I am not sure whether systems without Memory Expansion can handle a string array, but it seems possible."

Now follows the listing...

```
100 CALL CLEAR :: CALL SCREEN(16
):: OPTION BASE 1 :: DIM A$(500)
101 CALL CHAR(33,"10280038444044
38"):: CALL CHAR(64,"10280038405
C4438")
102 CALL CHAR(35,"10280024243C24
24"):: CALL CHAR(36,"08140008084
84830")
103 CALL CHAR(37,"10280018201804
38"):: CALL CHAR(38,"24180024242
```

```
42418")
110 FOR X=1 TO 500
120 INPUT "PLEASE ENTER WORD: ":
W$
125 IF W$="" THEN 200
130 PRINT "CHECKING...": : :
140 FOR Y=1 TO X
150 IF A$(Y)=W$ THEN 120
160 NEXT Y
170 A$(X)=W$
180 NEXT X
190 PRINT "NO MORE ROOM"
200 PRINT :: INPUT "TURN PRINTER
ON, THEN PRESS ENTER":ENT$
210 OPEN #1:"TP.U.E",OUTPUT
220 FOR Z=1 TO X
230 PRINT #1:A$(Z)
240 NEXT Z
250 CLOSE #1
260 END
```

This is a very interesting program that has quite a bit of merit. UNOFFICIAL encourages other short programs like WORDLIST to be sent in for printing. Thank you Robbie !!

###

REVIEWS AND VIEWS

RATING TABLE.

Five stars(*****)	Excellent
Four stars(****)	Above Average
Three stars(***)	Average
Two stars(**)	Almost OK
One star(*)	Not Worth It

This issue I shall be looking at some 'shoot them up and knock them down' type programs. Better known as home arcade games.

The first one that came my way was the immortal (?) Munch Man (PHM 3057) from TI and costs between \$32.00 and

\$39.00 At this point I am lost for words to actually do Munch Man justice. The only thing I can think of is if you have played Pack Man then you know all that there is to know about Munch Man since Munch Man is a clone of Pack Man. Did you know that TI was into genetic engineering ? The constant noise (?) of Mr. Munch going round the house chasing and being chased is enough to drive anyone berserk. No Berserk is another game. If you love Mr. Pack, you will love his TI clone Mr. Munch. As for me I do not have any children yet as the rating will show and I hope

Mr. Pack and his clones are long gone before my kids grow up. Then I wonder what will be the 'in' thing then...

RATING **

The next clone I would like to look at is TI Invaders, clone of Space Invaders. The TI version is from TI (PHM 3057) and costs between \$32.00 and \$39.95

Again what can I say that has not been said before. Oh yes there are some differences between Space and clone TI Invaders, enough to keep TI from falling into a legal trap.

All I can say is that the aliens keep coming, you shoot them down, they shoot at you, and a space craft flies

by. All good fun if you are into that kind of game. Yawn...

RATING **

Finally there is a game for all you western fans called Chisholm Trail from TI (PHM 3110) and the price is between \$32.00 and \$30.95

This game reminded me of a western version of clone TI Invaders. Instead of shooting at little aliens you have a shoot out at some long lost western city. A bang-bang shoot-shoot game for those who are into that style of game.

RATING **

###

IN CLOSING ...

In the way of odds and ends that have come my way none have interested me more than an advertisement from J. C. Penny for the TI P.C. at the low price of \$169.99 with the \$100 rebate. That price is low and I expect the war of the low priced computers to hot up even more.

When you think back to the TI-99/4 and remember that is sold for over \$1000.00, the TI-99/4A at this new (?) price is amazing.

I would not sit about holding my breath for the extras -expansion box, extra memory, modules, etc- to drop in price. They might, but I doubt it because more money is made on the 'extras' than on the initial sale of the computer. Once the computer is sold, not too many people will buy another computer for quite a while, and that means you will buy 'extras' for your computer.

Across the sea in England my Mother keeps on calling me and stating that there is not a TI P.C. in the country. How does she know this? Mother keeps calling the importers of TI equipment and is being told that they have none to sell to the retailers. From a TI representative I talked to in January I doubt if my Mother will be buying a TI P.C. much before summer.

One of the problems with this problem is that the British have a different TV system and can not use a computer designed for American TV's. That is one blow.

Another blow is that TI underestimated the market when they dropped the price on the TI P.C. in late summer. TI was flooded and missed the Christmas market (1982) because of the tremendous rush before Christmas. This translated into not enough of anything to sell at Christmas. This means that my Mother is one of a crowd waiting for TI to step up production to cover the healthy demand that there is.

Again over in England there seems to be a similar problem to TI; not enough BBC Computers. Let me quote an advertisement from the London Sunday Times, "Under the current DOI subsidised scheme, that number (25,000) is set to increase and it is reckoned that within two years virtually every child at school will have regular daily access to a microcomputer.

"It (the BBC Microcomputer) is light, compact, and as you will see, easy to use. It plugs into your TV, and has a wide range of programs including computer games. It has a real typewriter keyboard, and can, with a special adaptor, take computer programs straight from the BBC's Ceefax service.

"It is also most likely the computer your children will be familiar with at school -over 75% of machines now being ordered under the DOI scheme are BBC Micros.

Sounds good, but not to the Singh family. They ordered their BBC Micro fifteen months ago and are still waiting.

Maybe the main problem is that the BBC is still running its TV series on computers -based on the BBC Micro- and so few people have the machine because of delay; strange. Sometimes demand does out reach supply.

###

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