

WASHINGTON DC AREA  
TI HOME COMPUTER  
USERS GROUP

# NEWSLETTER

VOL. No.2

DECEMBER 1983

ISSUE No. 1 2

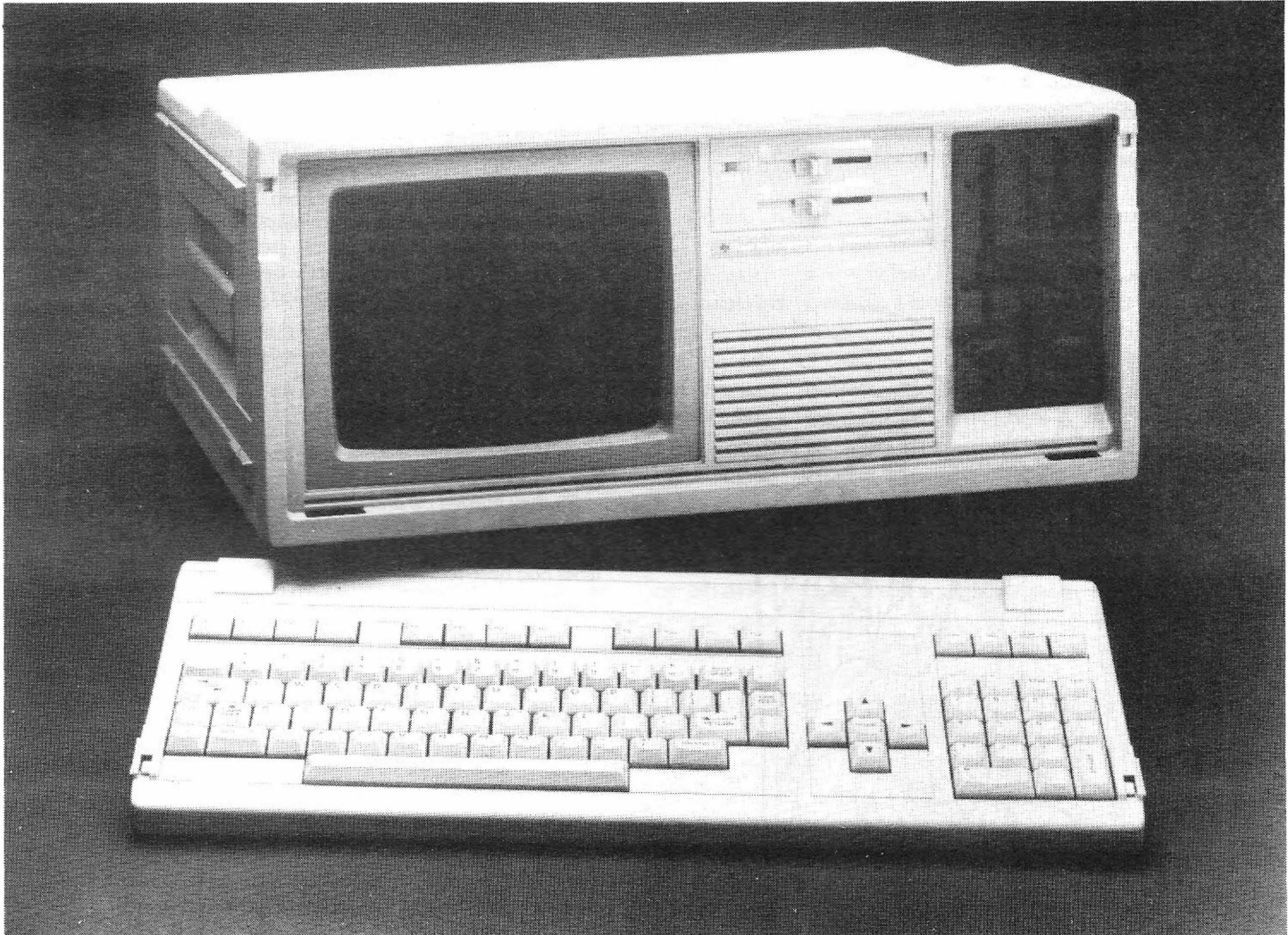
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Bill Whitmore, *President*

Richard D. Sturgell, *Editor*

TI CLUB MEETINGS

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## TEXAS INSTRUMENTS PORTABLE PROFESSIONAL COMPUTER

The new Texas Instruments Portable Professional Computer provides identical features of the desktop TI Professional Computer and uses all software and hardware available for the larger unit. Available through existing TI Professional Computer outlets beginning in December, the computer has a suggested retail price of \$2395 for a system with 64K bytes of RAM, a 9-inch monochrome display, and a single disk drive.

# The Good News of Christmas

## Old Testament Prophecies

... the Lord himself will give you a sign: The virgin will be with child and will give birth to a son, and will call him Immanuel.

Isaiah 7:14

But you, Bethlehem Ephrathah, though you are small among the clans of Judah, out of you will come for me one who will be ruler over Israel, whose origins are from of old, from ancient times.

Micah 5:2

For to us a child is born, to us a son is given, and the government will be on his shoulders.

And he will be called Wonderful Counselor, Mighty God, Everlasting Father, Prince of Peace. Of the increase of his government and peace there will be no end.

He will reign on David's throne and over his kingdom, establishing and upholding it with justice and righteousness from that time on and forever. The zeal of the Lord Almighty will accomplish this.

Isaiah 9:6, 7



## New Testament Fulfillment

In those days Caesar Augustus issued a decree that a census should be taken of the entire Roman world. (This was the first census that took place while Quirinius was governor of Syria.) And everyone went to his own town to register.

So Joseph also went up from the town of Nazareth in Galilee to Judea, to Bethlehem the town of David, because he belonged to the house and line of David. He went there to register with Mary, who was pledged to be married to him and was expecting a child. While they were there, the time came for the baby to be born, and she gave birth to her firstborn, a son. She wrapped him in strips of cloth and placed him in a manger, because there was no room for them in the inn.

And there were shepherds living out in the fields nearby, keeping watch over their flocks at night. An angel of the Lord appeared to them, and the glory of the Lord shone around them, and they were terrified. But the angel said to them, "Do not be afraid. I bring you good news of great joy that will be for all the people. Today in the town of David a Savior has been born to you; he is Christ the Lord. This will be a sign to you: You will find a baby wrapped in strips of cloth and lying in a manger."

Suddenly a great company of the heavenly host appeared with the angel praising God and saying,

"Glory to God in the highest,  
and on earth peace to men on  
whom his favor rests."

When the angels had left them and gone into heaven, the shepherds said to one another, "Let's go to Bethlehem and see this thing that has happened, which the Lord has told us about."

So they hurried off and found Mary and Joseph, and the baby, who was lying in the manger. When they had seen him, they spread the word concerning what had been told them about this child.

Luke 2:1-17

(For) when the time had fully come God sent his Son, born of a woman, born under law, to redeem those under law, that we might receive the full rights of sons.

Galatians 4:4

For God so loved the world that he gave his one and only Son, that whoever believes in him shall not perish but have eternal life. For God did not send his Son into the world to condemn the world, but to save the world through him. Whoever believes in him is not condemned, but whoever does not believe stands condemned already because he has not believed in the name of God's one and only Son.

Whoever believes in the Son has eternal life, but whoever rejects the Son will not see life, for God's wrath remains on him.

John 3:16-18, 36

This CHRISTMAS GREETING  
is from club member  
Rev. Keith G. Koch

NOTES FROM THE NOVEMBER MEETING  
Fred Gray, Secretary

Our meeting opened under seige from TV cameras, as channels 4 and 9 were filming our meeting as part of features on the TI disaster. I caught Bill Whitmore and Larry Hughes on channel 9 at 6:30 on the 11th. As you know, TI bailed out of the home computer business on 31 October, stating that they would keep the assembly lines running until the backlog of parts was used up, expected to occur in late November. The price of the 99/4A is now \$49.95, if you can find one. Most of us are still stunned.

When your ship is sinking, you can bail and look for the hole, or you can scuttle the ship. TI seems to be very good at scuttling. Not surprisingly, TI stockholders are less than ecstatic and some are suing TI for not revealing the depth of the disaster until the water was over the mast. The rest of us can merely shake our heads and wonder how they got to be so big and stay so stupid.

Or are they? TI claims to have lost hundreds of millions of dollars on the home computer market. Hmm. The best estimate of 99s sold ranges from 2 to 3 million. Even if they cost \$100 to make and they gave them away, they would only lose at the most 300 million bucks, spread over the last 3 years. Since they sold me mine for \$500, and a lot at prices over \$100, I do not believe all that baloney from Texas. TI has never been all that candid. If I were Commodore I would be squealing bloody murder about dumping. If anybody other than IBM could sit back and take a hundred million dollar bath to grab up the home computer market, it would have to be TI. We shall see.

Meanwhile, back at the meeting. Most of the mutterings centered around our new status as orphans. Rest assured that this club will not fold, and in fact is more important now than before. One by one the local entrepreneurs in attendance -J&KH, Quality Software, Not-Polyoptics -asserted their intention to stay in support of the TI. As software pushers, they are wise to stick it out, especially if TI abandons the software market too. (Don't be too sure, Kemo Sabe. Remember that the software biz is where the profits iz.)

99er Magazine, however, is rumored to be having withdrawal pains. Dealers who have talked to 99er about future ads say that the December issue will come out, but not the January one, and 99er will take a look at alternatives such as shifting focus toward the IBM family. If they do, they are bigger fools than TI. There are 3 million 99s out there and only one magazine. I don't know how many IBM PCs are out there, but there appear to be several million magazines. If 99er turns tail, we should put a glossy cover on this rag and sell it nationwide for \$3.

Other newslets. The Source will continue Texnet. Plato should continue to come out, as TI has stated that they would

honor contractual obligations. TI has allegedly been flooded with proposals from companies who wish to take over some of the business, such as making TI-boxes and software and peripherals. The International Users Group has asked to take over the 'TI-CARES' phone line. The Exchange Center will continue to stay up for at least a year for handling sick computers. The group purchase of TI-boxes is off, understandably. Don't expect any more price breaks on hardware items, and if you need something better start looking hard now.

Some good news. Software is at substantial discount all over, but in irregular patterns. Half price is still fairly easy to find. LOGO-II is out but hard to find. TI-FORTH will not get completed, but TI has offered to give it in its present form to the users groups, along with some other items. Keep in touch. There are a bunch of new cartridges out now, some 3d party and some TI. Atarisoft is offering PacMan and DonkeyKong for around \$40, seen at Evans and Toys R Us. Moon Mine (very good), MASH (OK), and Sneggit (not so hot) have been seen and reviewed.

Odds and Ends. If you hit shift-8-3-8 right after the Munchman Screen comes up you can select which screen to play. This secret works on Alpiner also, and perhaps others. (Not Car Wars. I tried it.) There were about 100 99/8s made for evaluation purposes and are probably in the hands of TI employees. If you buy a new 99/4a, send in your registration card right away. And if anyone has an old-style-plug-in-the-side RS232 box for sale, Ken Geremiah (249-5486) needs to talk business with you.

Our featured speaker was Tom Kramer from Wabash Disks, who provided a most enlightening talk on floppy disks. Wabash is one of the few actual diskette makers in the US, and many of the 'big names' are Wabash in disguise. Verbatim, 3M, and IBM are real manufacturers, but others such as Dysan are merely assemblers. Some disks, such as Memorex and Maxell, are made in Japan now.

The truth is out: there is no manufactured difference between a single density or double density or even a single sided or double sided disk. The difference in price, and quality, results from the testing done. The second side of a single sided disk is not tested, (or, less likely, it may have been tested and failed.) 98% of the time that second side is OK.

The little reinforcing rings you find on some disks are no longer needed, due to better precision of today's drives. The little kits that you can buy to put these hub rings in are tricky to use and probably a waste of time and money. Similarly, unless you use the devil out of your disk drives, the cleaning kits are not needed. Today's diskettes do not shed oxide much any more.

With improvements in oxides made, look for significant improvement in diskette capacity. Quad density is out now.

## CASSETTE FILES

In this article I am passing along some of TI's info on cassette files. Hope this will help some of you without a Disk Drive.

### File Statements & Commands

Commands: SAVE OLD

Statements: OPEN PRINT INPUT CLOSE

### General Definitions

Program Files: Uses OLD and SAVE commands. These are not used with line numbers and are only used to store and retrieve programs.

Data Files: Uses OPEN, PRINT, INPUT and CLOSE statements. These statements are actually a part of the program that is storing data.

File: A collection of records pertaining to a common group of data. (i.e. accounts receivable)

Records: A group of items that pertain to a subject of data group. (i.e. data of a specific account)

Item: A single piece of data within a record. (i.e. name of account, amount)

### Statement Definitions

OPEN Opens a communication line with the device specified. Parameters of data type are also provided via this statement.

PRINT Used to send data out to the device named in the OPEN statement.

INPUT Used to load or retrieve data from the device named in the OPEN statement.

CLOSE Closes the line of communications between the console and the device named in the OPEN statement.

### Data File Parameters

File # Entered as a # followed by a number between 1 and 255. You can store data using a file number and retrieve the data with a different file number. The file number only tells the computer which channel is being used.

SEQUENTIAL Must be used with cassette files. Computer assumes SEQUENTIAL.

FIXED Specifies the maximum length of each record. The different record lengths which may be specified are 64 (default value), 128 and 192. FIXED must be specified in the OPEN statement parameters. The number refers to the number of bytes per record. (note: In a program, each PRINT or INPUT statement is the equivalent of a record if there are no trailing commas.)

INTERNAL Refers to the format of data transfer which is in binary. This is the most efficient method of sending data. When using INTERNAL data records, numeric variables equal 9 bytes each and string variables are 1 byte per character plus 1 length byte. (i.e. 1000=9 bytes; Texas=6 bytes)

DISPLAY Specifies an ASCII data transfer format. DISPLAY files can only utilize FIXED records of 64 and 128. If neither INTERNAL nor DISPLAY is specified in the OPEN statement, then DISPLAY is the default.

INPUT Allows for data to be loaded into the console from the device named in the OPEN statement.

note: INPUT or OUTPUT and FIXED must be specified in the OPEN statement. If nothing else is specified then the computer will assume SEQUENTIAL and DISPLAY

### note on DISPLAY type records

DISPLAY type files require a special type of output record. Each element in the PRINT field must be separated by a comma.

example : 120 PRINT #1:A;"",B;"",C;"",...

The commas serve as field separators in the file. The omission of these commas will cause an I/O ERROR 25 to be issued. When attempting to read a file configured without the comma, the computer reads the entire file as one element. It also issues the error when it attempts to read the second element which no longer exists.

A file output using the special format required for DISPLAY type records does not require a special INPUT statement and may be read using a conventional format. example : 330 INPUT #1:A,B,C,...

# 1983 COMPUTER SHOW REPORT

Rick Stickle

To say the least the computer show this year started out as a very moving experience. The booth was set up on Wednesday night and we all felt lucky since we were finished by 8PM. The first surprise came Thursday morning, the booth was not where we left it the night before! During the night the show management had moved us. This was not our last move, just before the show opened Thursday we were asked to move again, thats how we ended up with the prime location right in the middle of the show. the moves weren't all bad, the show management must have felt sorry for us and let us use two of the pre-draped tables that they had left.

The moving was not the only problem we had to contend with. The phone that we had installed in the booth was also moved with us and we never did find out what the correct phone number for it so the was no incoming information, this left us with out a modem for the first day since we couldn't remeber who was supposed to bring it.

The show itself was much like last years for us. We were the only TI 99 people there, at least this year people came looking for us since they knew of the existance of the computer. The year between shows paid off in the fact that we had much better programs to show and a lot more to offer people who asked about the club. Much like last year the comment most heard on Thursday and Friday was "I didn't know it could do that!"

By now everybody knows that the Friday of the show was also "Black Friday", the day TI pulled out of the home computer market. This made Saturday (especially) and Sunday very interesting to say the least. The big question now changed to "is it true?" and needless to say we had very little information to give people. To spite TI's withdrawal the Users Group still commanded a large amount of interest from both people who owned TI's and those who planned to buy them before they all disappear. Before the fall we got 13 new members at the show and after the fall we picked up at least a dozen more, so we averaged about 6 people per day signing up on the spot. I'm sure that we will also recieve other new members through the mail as time goes on.

Another off shoot of the show is the fact that we may be able to gather more people under our blanket since we were informed of small groups starting in Severna Park and Columbia and they expressed interest in joining us. There is also the possibility of a third group forming in the southern part of Maryland someplace around Waldorf. Needless to say if this happens we will welcome these new people since they can also contribute to the club.

As usual, with an undertaking of this kind there are many thanks

to be passed out. First there is Jim Horn who wrote the letter that got us the booth. Then there is Scott Spellman from the TI office in Fairfax who let me have the computer system and just about all the software I asked for (which was one of everything that he had). Thanks again to Source Telecomputing and Nancy Beckman which again this year donated an account to Source/Texnet for the four days of the show. Then there were those who manned the booth Dick Sturgell, Duane Shie, Pete Eddy, Bill Whitmore, Ken Geremia, Chris Goodman, Larry Hughes, Frank Jordan (who left his sick bed to be there), Mike Lambert, Ken Chandler, Dick Schmidt, and anyone I might have missed (which I hope is no one). A special thanks goes to the man who made the fantastic banner that we used at the booth and which turned out to be one of the landmarks of the show due to its visibility, and who unfortunately must remain anonymous thanks to the fact that Jim Horn can't remember his name so hopefully we'll be able to thank him properly next month.

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#### DISK MANAGEMENT

So no more TI Home Computer products. Too bad, as I firmly believe their problems were not from their product. The 99/4A set a standard that the competition has yet to match. Since we can't cry over spilt milk, we might as well continue to investigate the machine we do have.

Take our Disk Management as an example. Our Disk is divided up into 9 sectors (think of a sector as a wedge of pie). Each sector is divided into 40 tracks or concentric circles where data can be written to or read from. 40 tracks times 9 sectors gives us 360 areas in which to store our data. Each of these sector areas ("sectors" for short) can contain up to 256 bytes of information or 2048 small magnetized areas. 256 bytes times 360 sectors give our single sided Disk system a total of 92160 bytes of storage area ( or 90K for short).

However, when one catalogues an initialized "empty" TI Disk you will see that only 358 sectors are available. What happened to the other 2?

256 bytes or one sector is used by our Disk Controller for house keeping chores: Disk name, information concerning the available & used sector, number of tracks and a few other items which TI rather not have us know or write about are located here.

Another 256 bytes or 2nd sector area is used by our Disk Controller to keep a running, up-to-date alphabetical catalog of our programs or data files. This area allows us to catalog a total of 128 filenames which are re-alphabetized each time we add or delete our data.

Thus, when I want to use a Disk containing 360 sectors, 1 is "lost" to keep the Disk Controller information. Another is "lost" to keep my filenames cataloged. Well, then I do have the complete 358 sectors which are left for my data right? Yes & no.

Yes they are there, but you will "lose" one more sector of 256 bytes for each and every file or program you create. This is so our Disk Controller will know where to find our data, what type of data we have, how many sectors it contains and where it can be found on the Disk.

So if I have a program which catalogues out to 9 sectors, then the actual data can be no smaller than 7 sectors plus 1 byte (1792 minimum) or no larger than 8 sectors or 2048 bytes maximum. (Sectors which are only partially filled with our data will be automatically filled by the Disk Controller with zeros.)

Thus, a Disk with only one data file containing 2048 bytes (8 sectors) demands a Disk area of 2816 bytes or 11 sectors in order to function.

Well, I hope this keeps your minds occupied while you are thinking good thoughts of TI as they let you twist slowly in the wind.---May Santa stuff a piece of coal in their PR department for each dollar they claimed to have "lost" on the 99/4A

By the way, having many disks and sectors filled is a chore to keep straight. Thanks for Larry Hughes (QUALITY SOFTWARE) for his NEW programs: THE LIBRARIAN (tm) and DISK LABELER (tm) which catalogues all of my disks and labels each individual one.

Rev. Keith G. Koch

PROGRAM NOTES  
By Ken Chandler

...And another one bites the dust!...

Isn't life strange? Here we have a computer that's always been an orphaned child. It never received great favor from anyone and only begrudgingly acknowledged by others. Texas Instruments wanted to sell millions of them, but didn't even know how to adequately sing its praises. While its owners knew that it was absolutely the best all round computer package in its price range, the uninitiated flocked to the stores to buy Commodores (they're collecting dust in closets now).

TI was so intent on closing off the software and hardware market to others, that development was stifled. There existed a persistent belief that buying this computer would be a mistake because there was no software available to support it.

Despite all of this, the situation was improving. Every month, new third-party software and hardware was becoming available. Even the big software developers (the ones who said they would never agree to having TI market their wares) were beginning to line up to sign up with TI. There were rumors of a new big brother to the 99/4A. Some of the big computer magazines were even considering including the 99/4A in their monthly format.

Then came Friday, October 28, 1983...

As it happened, I worked at the club's booth at the computer show the next day. To say it was an interesting day would be an understatement. I think a lot of people thought that TI had built a self-destruct mechanism in each computer and that they all blew up on Friday at the push of a button.

Surprisingly, a lot of people came up to me inquiring about buying a new 99/4A. They weren't worried because TI bailed out. They knew a good value and wanted to buy one. They didn't want something they'd have to POKE their brains out with. They didn't want to play Russian Roulette with the serviceman (Am I going to be one of the unlucky 30 percent?).

Now is the time when everyone will find out what kind of computer the TI 99/4A really is. If it's as good as most of us think it is, we'll see more development in the next year than any of the past three. It appears that there will be between 2 and 3 million 99/4A's out there, and that's a pretty big market. I, for one, am optimistic. Of course, I'm also the one who predicted that TI would never get out of the home computer business.



Now is the time for our club to get stronger because there is a greater need for it now. In order for that to happen, though, we need greater participation from everybody. For example:

1. Help sign up new members. TI has sold thousands of consoles in this area in the past few months and most of those people don't know who we are. Pass the word in stores and at work.
2. Write programs and donate them to the club Program Library. In the past year, we've added approximately 30 programs to the library. That's pathetic from a group of almost 800 people!
3. Write material for the club newsletter. Write about a new piece of software or hardware you've just purchased or a book you just read. You don't have to be a great writer-- the information is what's important-- not the style of the writer. Maybe you could submit an interesting newspaper or magazine article you read.
4. We need people to participate in running the club. We need people to make presentations at meetings and volunteers to help others with problems. We can't sit around and watch others do all the work. What have you done for the club lately?

#### CP/M PROCESSOR CARD

I talked to the people at Morning Star Software about their new CP/M card for the expansion box. This is actually a 8085-based computer-on-a-card with 64K of on-board memory. It will run any CP/M program with two restrictions. The program disk must be translated so the TI disk system can read it and the program can't exceed the 64K memory limitation. This means that you must buy your CP/M programs from someone who has converted them to TI format. However, this is a simple, cheap procedure and should not limit availability. One juicy tidbit I heard was that they are working on a technique that will allow "windowing". This means you can simultaneously look at more than one program at a time by dividing the display into "windows". This is the current "state-of-the-art" in integrated software.

Most third-party vendors that I talked to this past week (since black Friday) were proceeding full speed ahead. As one of them reportedly said, "We've just lost our biggest competitor!"

#### WOULDN'T IT BE NICE IF...

1. someone decided to market an inexpensive peripheral expansion box?
2. someone marketed an 8088 processor card for the expansion box that would run IBM software?
3. someone decided to market an improved 99/4A (more memory, built-in languages, etc.)?



COVERING THE  
TEXAS INSTRUMENTS  
BRAND of HOME COMPUTERS

By now you've heard the news.

We at 99'er Home Computer Magazine want to assure you that we will continue to support you in using your Texas Instruments machines just as we always have--and in some exciting new ways as well. Although the vagaries of the marketplace and the reality of corporate priorities have halted its production, this does not diminish the capability of your machine. The TI Home Computer remains a powerful tool with a wealth of untapped potential. Our magazine will continue to cover all aspects of Home Computing--education, gaming, word processing, and more--for owners of TI machines, whose ranks now include over one million members. We will also be expanding our horizons to cover some fascinating new territory. Please let us know the ways in which we can further support you, and please continue to keep in touch.

Sincerely,

Judy Sanoian  
User Group Editor

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4. someone decided to make an 80-column card for the 99/4A?
5. someone marketed a peripheral that would accept and run extended BASIC program cartridges while the X-BASIC TI cartridge was plugged in?
6. someone made an EPROM programmer to burn X-BASIC programs on cartridges to use in the above-mentioned peripheral (hint: this is actually in the works!)?
7. someone decided that a market of 2 million was really worth going after?

#### DECEMBER MEETING

I'm going to give a talk on the club's program library at the December meeting. Here's your chance to find out more about it and ask questions. Also, I would like to proceed with formulating a Program Library Directory. I am told that work was done on such a document in the past, but has been lost. I need volunteers to help write descriptions of the programs and what peripherals are needed to run them. If you'd like to help, see me at the December meeting or contact Bill Whitmore or Dick Sturgell.

Take off the black armbands-- it's time to dig in and get or with it!

## COMPU-SOURCE CORNER

By Rick Stickle

TI0121

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In light of the recent events, that is "Black Friday", instead of covering some more of the local nets this month I'd like to turn once again to Texnet. Texnet as most of you know is run by The Source, or at least it resides on the Source. The fact is that except for the programs which you can download which are controlled by the International Users Group, the rest has been controlled by TI.

The fact that TI did control so much of Texnet lead to speculation that Texnet was going to follow the 99/4 in a swift death! NOT TRUE! This week I have spent a couple of hours talking to Wess Bodall who is the current project manager for the Texnet project. Actually right now there are parts of Texnet that will die with TI's withdrawal, for example the TI-NEWS was run by TI and will die, on the bright side the sections like the news (and software updates) seem to be the sections that were always a year behind since it seems that TI only updated them when they were forced to by the Source.

The question now is what is all of this going to mean to us? In talking to Wess it seems the new concept is going to be orientated toward the user groups around the country. The Source has hopes of getting TI's "B" grade programs which are much the same as the ones that they have been giving the local user groups, they also have hopes of the user groups around the country submitting programs from their libraries to the Source.

In addition to this The Source hopes to be able to convince some of the user groups around the country to submit and provide upkeep of user newsletters on line and they will then pay royalties to the user groups. This would help to fill in the blanks left by the pull out of TI.

The Source is serious enough about this project to allow a user group to creat its own enviroment, to include the use of the things that our computer is famous for like speech, music, and naturally graphics. They are also willing to have someone from the Source give the club a talk on how to get more out of using the Source and let us obtain accounts for our members through a group buy which could be as low as \$30.00 (the same as Comp-u-Serve) if enough people are interested.

It would seem that the bottom line is that the Source is very interested in us and all we have to do is return the interest to make Texnet into the system that we have felt it should have been three years ago when it was first started, as they say in tennis "the ball is in our court!"



DOES YOUR SORTING ROUTINE ALLOW YOU TO ADD ANOTHER NAME WITHOUT RESORTING THE WHOLE LIST?

```

100 REM - SHORT SHOEHORN BY JIM PETERSON
N, TIGERCUB SOFTWARE
110 REM - THIS ROUTINE WILL INSERT A NAME INTO ITS PROPER PLACE IN A PRESORTED LIST OF N NUMBER OF M$(N) NAMES.
120 REM - TAKES 12 TO 14 SECONDS FOR A LIST OF 500
130 INPUT "ADD NAME":ADD$
140 J=0
150 J=J+1
160 IF J>N THEN 230
170 IF ADD$>M$(J) THEN 150
180 FOR L=N+1 TO J STEP -1
190 M$(L)=M$(L-1)
200 NEXT L
210 M$(J)=ADD$
220 GOTO 240
230 M$(N+1)=ADD$
240 N=N+1
    
```

IF YOU HAVE THE MEMORY EXPANSION AND ARE SORTING LONG LISTS, YOU MIGHT FIND THIS FASTER:

```

100 REM - LONG SHOEHORN BY JIM PETERSON
110 INPUT "ADD NAME":ADD$
120 LEAST=0
130 MOST=N
140 IF ADD$>M$(1) THEN 170
150 D=0
160 GOTO 280
170 IF ADD$<M$(N) THEN 200
180 M$(N+1)=ADD$
190 GOTO 320
200 D=INT((MOST-LEAST)/2)
210 IF (ADD$>M$(D))* (ADD$<M$(D+1)) THEN 380
220 IF ADD$>M$(D) THEN 250
230 MOST=D
240 GOTO 200
250 LEAST=D
260 D=D+INT((MOST-LEAST)/2)
270 GOTO 210
280 FOR J=N+1 TO D+2 STEP -1
290 M$(J)=M$(J-1)
300 NEXT J
310 M$(D+1)=ADD$
320 N=N+1
    
```

PAT SATURN, EDITOR OF THE SPIRIT OF 99 NEWLETTER OF THE CENTRAL OHIO NINETY-NINERS, GAVE ME THIS TRICK FOR MAKING THE COMPUTER GO ABSOLUTELY CRAZY. TYPE 100 REM AND THEN HOLD DOWN CTRL AND U WHILE THE COMPUTER RUNS THROUGH 4

(CONT.)

LINES AND STOPS; OR IN EXTENDED BASIC, TYPE 100 ! AND DO THE SAME FOR 5 LINES. ENTER. TYPE 100 AGAIN, PRESS FCTN AND DOWN-ARROW. WHEN THE COMPUTER FINISHES PRINTING RANDOMIZE, START PUSHING ANY KEYS AND SEE WHAT HAPPENS!

MORE TIPS FOR BEGINNERS:

TO GET THE COMPUTER TO READ THE CALL KEY INPUT AS UPPER CASE LETTERS, EVEN IF THE ALPHA LOCK IS UP, JUST USE KEY-UNIT 3 : CALL KEY(3,K,ST)

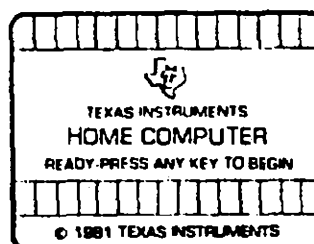
TO GET THE COMPUTER TO HOLD 24 LINES OF TEXT ON THE SCREEN WITHOUT JUMPING THE FIRST LINE OFF THE TOP - JUST PUT A SEMI-COLON AFTER THE 24TH LINE.

YOU DON'T HAVE TO RESTORE ANYTHING WITH THE RESTORE STATEMENT. IN OTHER WORDS, YOU DON'T HAVE TO READ A DATA STATEMENT BEFORE YOU CAN RESTORE IT. YOU CAN WRITE YOUR PROGRAM TO OPTIONALLY OR RANDOMLY RESTORE ANY ONE OF YOUR DATA STATEMENTS AND THUS TO BEGIN READING DATA FROM ANY ONE OF THE DATA STATEMENTS.

IF YOU HAVE THE EXTENDED BASIC MODULE, WHY NOT LEAVE IT PLUGGED IN AND SELECT THE EXTENDED BASIC OPTION EVEN WHEN YOU ARE PROGRAMMING IN BASIC? THIS WILL ALLOW YOU TO TYPE 5 LINES ON A LINE NUMBER, WHICH WILL STILL RUN IN BASIC (UNLESS YOU PUT TOO MANY SHORT ITEMS IN A DATA STATEMENT), AND THE EXTENDED BASIC OPTION WILL ACCEPT INPUT OF YOUR PROGRAM LINES MUCH FASTER, ESPECIALLY WHEN THE PROGRAM GETS LONG. IT ALSO ACCEPTS CHANGES AND DELETIONS MUCH MORE QUICKLY, AND IS ESPECIALLY USEFUL WHEN YOU WANT TO DELETE A LARGE NUMBER OF LINES. IT WILL QUICKLY TELL YOU HOW MUCH MEMORY YOU HAVE LEFT WITH THE SIZE COMMAND (BUT YOU'LL HAVE MORE IN BASIC) AND WILL BRING YOUR REJECTED INPUT BACK TO THE SCREEN FOR CORRECTION, WITH FCTN 8. IT WILL ALSO RUN YOUR PROGRAM, IF YOU STAY AWAY FROM CHARACTER SETS 15 AND 16, AND WATCH THOSE DOUBLE COLONS.

ALMOST OUT OF MEMORY, SO  
HAPPY HACKIN'!

*Jim Peterson*  
JIM PETERSON



1 ! <<< JINGLE BELLS >>>

by  
Craig Miller  
MILLERS GRAPHICS

2 ! Have a Happy Holiday  
and a Prosperous New Year.

10 DATA 250,494,250,494,500,  
494,250,494,250,494,500,494,  
250,494,250,587,250,392,250,  
440,1000,494,250,523,250,523

20 DATA 250,523,250,523,250,  
523,250,494,250,494,250,494,  
250,494,250,440,250,440,250,  
494,500,440,500,587,250,494

30 DATA 250,494,500,494,250,  
494,250,494,500,494,250,494,  
250,587,250,392,250,440,1000  
,494,250,523,250,523,250,523

40 DATA 250,523,250,523,250,  
494,250,494,250,494,250,587,  
250,587,250,523,250,440,1000  
,392

50 RESTORE :: FOR T=1 TO 49  
:: READ A,B :: CALL SOUND(A,  
B,4):: NEXT T

60 RESTORE :: FOR T=1 TO 49  
:: READ A,B :: CALL SOUND(A,  
B,2,B/2,6):: NEXT T

70 RESTORE :: FOR T=1 TO 49  
:: READ A,B :: CALL SOUND(A,  
B,2,B\*2,4,B/2,6):: NEXT T

80 RESTORE :: FOR T=1 TO 49  
:: READ A,B :: CALL SOUND(A,  
B,2,B+5,4,B/2,6):: NEXT T

82 ! To change the speed of  
the song, multiplying A in  
the sound statement by .9 or  
.8  
ie CALL SOUND(A\*.9,B,2 etc.

### Just a Note from MILLERS GRAPHICS

Many people have written or called us to see if we are still going to support the TI home computer, and the answer is definitely YES. We are also going to publish the book on Extended BASIC programming that we announced in our newsletter and we currently have some other exciting new products on the drawing board.

#### Rumors

We've heard that TOYS R US is currently in negotiations with TI to buy the rights to the 99/4A computer and some of the software.

We've talked with a company that plans on bringing out a replacement for the 99/8 computer with many new enhancements. This same company will also be bringing out the following cards for the Expansion box; An RS232 card, A 32K, 128K and 256K memory expansion cards, and a disk controller card. They might even be producing their own Expansion Box.

99'er magazine might be taking on the IBM, Commodore and Atari computers in the Dec. or Jan issue.

The International Users Group is trying to get the rights to Extended BASIC and Editor/Assembler command modules.

Many of the Third party cartridge manufactures are looking at TI's move as an open door to the GROM port.

We would like to thank everyone for their continued support and we hope that everyone has a safe and Happy Holiday season.

Sincerely,

Craig Miller  
Millers Graphics

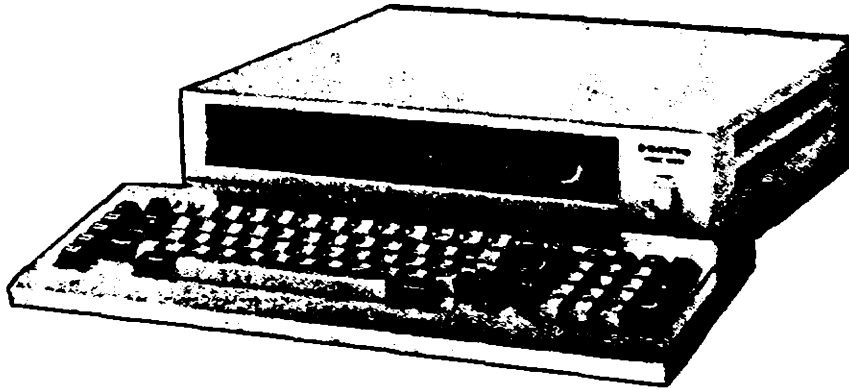
-----  
\*ATARI SOFT\* IS NOW MAKING SOME OF THEIR PROGRAMS AVAILABLE FOR THE TI-99/4A. IF YOU WOULD LIKE TO BE ON THEIR MAILING LIST, DROP THEM A LINE STATING THAT YOU ARE A TI-99/4A OWNER. THEIR ADDRESS IS: ATARI, INC., P. O. BOX 2943, SO. SAN FRANCISCO, CA 94060.

# Sanyo Business Computer Systems

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## Comp-U-Ted

ENTPRISES



### Sanyo Announces New Low-Cost IBM PC Look-a-Like MBC550

The MBC550 is a 16 bit IBM PC look-a-like that will run most IBM PC software. Standard features include: 8088 CPU • MS/DOS • 128K memory • 160K disk storage • color graphic capabilities • centronic printer port • Sanyo BASIC • diagnostics • utilities • speaker • joystick port and word processing and spread sheet software and spelling checker.

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We are now taking orders for these systems.

SANYO MBC-550 SINGLE DISK DRIVE SYSTEM--  
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COMP-U-TED ENTERPRISES

**CAVE MAZE:  
AN ADVENTURE GAME**  
by Jon Todd

You're lost in a subterranean labyrinth -- a maze of caves, each indistinguishable from the other. Suddenly, in the dim light, you see something sparkle! You reach for it and discover a faultless diamond! Pocketing the treasure, you continue your seemingly futile search for a way out.

Many adventure games require the player to negotiate a maze similar to the one just described. Although it seems complicated during play, the maze is very easy to program.

The following program in TI Basic generates a 12-room maze (one of the rooms is actually a testing location, where you are either allowed to leave the maze or are forced to go back). As in all good mazes, the rooms are identical in appearance and are interconnected by winding passages. The result is that when one leaves a cave heading south, he may find himself in a cave actually located to the north. He may even find himself back in the same cave he just left. Since the caves are identical, the adventurer must somehow mark the cave if he is to recognize it on a later visit.

Traditional maze-solving involves leaving objects in each cave which are recognized and possibly retrieved on a return visit. Cave maze presents an easier approach. One of the rooms contains a piece of chalk that may be used to write with. The WRITE/DRAW section handles the creation of your messages, and lines 420-430 will show you what message (if any) you wrote on any previous visits.

As in September's epic "Farmer's Dilemma," all direction values and messages are stored in arrays. Thus OB(1) is the location of object #1, the chalk, and OB\$(1) is the corresponding name of the chalk. OBDES\$(1) is the supplemental description of chalk, which is printed if we type LOOK CHALK as a command (see LOOK section). MSG\$(R) is the message you write with the chalk for each room (R). And, as was explained in the August newsletter, N(R), S(R), E(R), and W(R) represent the room numbers located north, south, east, and west of the current room (R).

Notice that in most sections that affect objects (i.e., GET, DROP, LOOK) the program compares the last 3 letters of your object command SEG\$(V2\$,LEN(V2\$)-2,3) with the last 3 letters of the object name SEG\$(OB\$(A),LEN(OB\$(A))-2,3) to determine which object you mean. This allows you to type GET DIAMOND or GET BLUE-WHITE DIAMOND and have the desired result.

---

**PROGRAM LIBRARY**  
by Larry Hughes

Many thanks to the following members who have generously donated programs to the Club library during the past month: Kenneth Young, Robert Ambrose, Richard Gorman, and Paul Peyser.

To donate a program to the Club library, simply put it on a tape or disk (disk preferred), and give it to Larry Hughes at a meeting. He will return your tape or disk at the following meeting.

There are 26 disks in the Club library. Each disk has an average of 15 programs on it, for a total of almost 400 programs! The contents of each disk are also available on tape.

To order tapes from the library: Send a letter to KEN GEREMIA, 1401 Peachwood Lane, Bowie, MD 20716, 249-5486, specifying which tapes you want (numbers 1 through 26). Enclose a check in the amount of \$1 for each tape ordered, made out to "Washington DC TI-99/4 Users Group". The programs are free, the blank tape costs \$1. Tapes are available for pickup at meetings during the odd numbered months, i.e. Jan, Mar, May, etc. Tapes ordered by Dec. 15 may be picked up at the Jan. meeting. We still need a volunteer to bring tapes to the Fairfax and Montgomery County meetings. Please call Ken. No volunteer, no tapes.

To order disks from the library: At a meeting, give ROB GOFF, 821-2284, an initialized disk for each library disk that you want. On each disk put a disk label with your name and the number of the library disk (1-26) that you want copied to it. Your disk will be returned to you at the following meeting. There is no charge.

**WANTED**

Old style RS232. Call Ken Geremia, 249-5486.



```

100 REM *****
110 REM * CAVE MAZE *
120 REM *****
130 REM BY JON TODO
140 REM SEP 16,1983
150 REM
160 CALL CLEAR
170 DIM MSG$(12),N(12),S(12),E
(12),W(12)
180 GOSUB 1740
190 R=8
200 REM *****
210 REM PRINT ROOM, STATUS
220 REM *****
230 CALL CLEAR
240 IF R=3 THEN 1940
250 PRINT "YOU ARE IN:": "A C
AVE"
260 IF R(<)9 THEN 280
270 PRINT "THERE IS A DOOR TO
THE NORTH"
280 IF R(>6 THEN 300
290 PRINT "THERE IS LIGHT COM
ING FROM THE NORTH AND FROM T
HE WEST"
300 PRINT "YOU ARE CARRYING:"
310 FOR A=1 TO 5
320 IF OB(A)<99 THEN 340
330 PRINT "A "&OB$(A)
340 NEXT A
350 PRINT "YOU CAN SEE:"
360 FOR A=1 TO 6
370 IF OB(A)<R THEN 400
380 PRINT "A "&OB$(A)
390 GOTO 420
400 NEXT A
410 PRINT "NO OBJECTS"
420 IF MSG$(R)=" THEN 470
430 PRINT "SOMEONE DREW ON TH
E WALL:": " "&MSG$(R)&" "
440 REM *****
450 REM PARSER
460 REM *****
470 V2$=""
480 PRINT
490 INPUT "COMMAND?":V$
500 FOR A=1 TO LEN(V$)
510 IF SEG$(V$,A,1)=" " THEN 5
50
520 NEXT A
530 V1$=V$
540 GOTO 600
550 V1$=SEG$(V$,1,A-1)
560 V2$=SEG$(V$,A+1,LEN(V$))
570 REM *****
580 REM DIRECTION HANDLING
590 REM *****
600 IF (V1$="GO")+ (V1$="WALK")
=0 THEN 620
610 V1$=V2$
620 IF (V1$="NORTH")+ (V1$="SOU
TH")+ (V1$="EAST")+ (V1$="WEST")
=0 THEN 840

```

```

630 X=R
640 IF V1$(<)"NORTH" THEN 710
650 IF R(>9 THEN 700
660 IF LOCK=1 THEN 700
670 PRINT "THE DOOR IS LOCKED
"
680 OB(6)=9
690 GOTO 470
700 R=N(R)
710 IF V1$(>)"SOUTH" THEN 730
720 R=S(R)
730 IF V1$(>)"EAST" THEN 750
740 R=E(R)
750 IF V1$(>)"WEST" THEN 770
760 R=W(R)
770 IF R(>0 THEN 230
780 R=X
790 PRINT "YOU CAN'T GO THAT
WAY"
800 GOTO 440
810 REM *****
820 REM GET ROUTINE
830 REM *****
840 IF V1$(<)"GET" THEN 1010
850 IF LEN(V2$)<4 THEN 960
860 FOR A=1 TO 5
870 IF SEG$(V2$,LEN(V2$)-2,3)<
)SEG$(OB$(A),LEN(OB$(A))-2,3)T
HEN 950
880 IF OB(A)<99 THEN 910
890 PRINT "YOU'VE ALREADY GOT
THE ";OB$(A)
900 GOTO 440
910 IF OB(A)<R THEN 960
920 PRINT "YOU'VE GOT THE ";O
B$(A)
930 OB(A)=99
940 GOTO 440
950 NEXT A
960 PRINT "THERE IS NO ";V2$;
" HERE"
970 GOTO 440
980 REM *****
990 REM DROP ROUTINE
1000 REM *****
1010 IF V1$(<)"DROP" THEN 1150
1020 IF LEN(V2$)<4 THEN 1100
1030 FOR A=1 TO 5
1040 IF SEG$(V2$,LEN(V2$)-2,3)<
)SEG$(OB$(A),LEN(OB$(A))-2,3)
THEN 1090
1050 IF OB(A)<99 THEN 1090
1060 PRINT "OK, YOU DROPPED T
HE ";OB$(A)
1070 OB(A)=R
1080 GOTO 440
1090 NEXT A
1100 PRINT "YOU DON'T HAVE TH
E ";V2$
1110 GOTO 440
1120 REM *****
1130 REM DRAW/WRITE ROUTINE
1140 REM *****

```

```

1150 IF (V1$="DRAW")+ (V1$="WR
ITE")=0 THEN 1290
1160 IF OB(1)<99 THEN 1240
1170 IF V2$(<)" THEN 1210
1180 PRINT "WHAT DO YOU WANT T
O ";V1$;"?"
1190 INPUT MSG$(R)
1200 GOTO 1220
1210 MSG$(R)=V2$
1220 PRINT "OK, YOU'VE JUST W
RITTEN:": " "&MSG$(R)&" " : "
AND ERASED ANY OLD MESSAGE"
1230 GOTO 440
1240 PRINT "YOU DON'T HAVE AN
YTHING TO":V1$&" WITH"
1250 GOTO 440
1260 REM *****
1270 REM * LOOK ROUTINE *
1280 REM *****
1290 IF V1$(<)"LOOK" THEN 1400
1300 FOR A=1 TO 5
1310 IF V2$="" THEN 1430
1320 IF SEG$(V2$,LEN(V2$)-2,3)
<)SEG$(OB$(A),LEN(OB$(A))-2,3)
THEN 1360
1330 IF (OB(A)=99)+ (OB(A)=R)=0
THEN 1400
1340 PRINT "YOU SEE:": " :OBDES
$(A)
1350 GOTO 440
1360 NEXT A
1370 IF V2$(<)"CAVE" THEN 1400
1380 PRINT "YOU SEE:": "A DIM
ELY LIT CAVE; IT LOOKS JUST L
IKE ALL THE OTHERS!"
1390 GOTO 440
1400 IF (V2$="DOOR")+ (V2$="SLO
T")=0 THEN 1430
1410 PRINT "A SIGN SAYS: 'TO
PASS NORTH YOU MUST INSERT A C
OIN'"
1420 GOTO 440
1430 PRINT "I DON'T SEE A ";V
2$
1440 GOTO 440
1450 REM *****
1460 REM * INSERT COIN *
1470 REM *****
1480 IF V1$(<)"INSERT" THEN 167
0
1490 IF R=9 THEN 1520
1500 PRINT "THERE'S NO SLOT H
ERE"
1510 GOTO 440
1520 IF (V2$="SILVER COIN")+ (V
2$="DIME")+ (V2$="COIN")=0 THEN
1620
1530 IF OB(3)=99 THEN 1560
1540 PRINT "YOU DON'T HAVE A
";V2$
1550 GOTO 440
1560 PRINT "OK"
1570 N(9)=6

```

```

1580 LOCK=1
1590 PRINT "THE DOOR IS OPEN"
1600 OB(3)=0
1610 GOTO 440
1620 PRINT "YOU CAN'T"
1630 GOTO 440
1640 REM *****
1650 REM UNKNOWN COMMAND
1660 REM *****
1670 PRINT "I DON'T KNOW HOW
TO ";V1$
1680 GOTO 440
1690 REM *****
1700 REM INITIALIZATION
1710 REM
1720 REM OBJECT LOCATION
AND NAME
1730 REM *****
1740 FOR A=1 TO 6
1750 READ OB(A),OB$(A)
1760 NEXT A
1770 DATA 2,PIECE OF CHALK,11,
GOLDEN MEDALLION,12,SILVER COI
N,7,BLUE-WHITE DIAMOND,4,SPARK
LING RUBY,8,SLOT BY THE DOOR
1780 FOR A=1 TO 5
1790 READ OBDES$(A)
1800 NEXT A
1810 DATA ORDINARY CHALK,REAL
GOLD!,A 1952 DIME,ABOUT 2 CARA
TS WORTH!,A REAL GEN!
1820 REM *****
1830 REM ROOM DESCRIPTIONS,
DIRECTION VALUES
1840 REM *****
1850 FOR A=1 TO 12
1860 READ N(A),S(A),E(A),W(A)
1870 NEXT A
1880 DATA 1,4,4,1,1,5,5,4,0,6,
0,0,0,7,0,4,2,0,0,4,3,0,0,5
1890 DATA 7,10,0,7,5,11,9,7,0,
12,0,0,0,5,11,0,0,11,0,10,0,12
,12,1
1900 RETURN
1910 REM *****
1920 REM END ROUTINE
1930 REM *****
1940 IF (OB(2)=99)+ (OB(4)=99)+
(OB(5)=99)=-3 THEN 2000
1950 PRINT "YOU HAVEN'T YET F
OUND ALL OFTHE TREASURES.": "
YOU MUST GO BACK!"
1960 FOR DELAY=1 TO 1000
1970 NEXT DELAY
1980 CALL CLEAR
1990 GOTO 250
2000 PRINT "YOU HAVE FOUND AL
L OF THE TREASURES AND HAVE
ESCAPED THE MAZE!"
2010 PRINT "GOODBYE"
2020 END

```

## SINCERELY BYTE'S AND BITS CORNER

Dear BIT

The holiday season has arrived and I can not wait for jolly St Nick to visit this year. Since you seem to know him very well I have included my Christmas list for you to pass to him. Do not worry if he can only give me two printers with the TI Personal computer. I know the demand is high for these items. Anyway, with the tremendous sales of the TI 99/4A, Im sure he can give me two of those machines too. Oh yes, I did not have the 85 cents it took to mail my Christmas list to you, therefore, thanks for the COD. Whats new this month?

SINCERELY BYTE'S

P.S. Merry Christmas and Happy New YEAR.

Dear SINCERELY BYTE'S

Your Christmas list took so long to read that I missed my favorite TV program this month. Forget it as I do not believe St Nick could deliver your Christmas list in a month of Sundays. Also, the COD charge was \$18.85 and not 85 cents. Now for the serious stuff.

Line 270 on page 25 of the November Newsletter had an error and will not run as printed in that issue. The line should read as follows:

```
270 CALL SOUND (DUR(M)* 250,  
NOTE(M,1),1,NOTE(M,2),1,NOTE(M,3),1)
```

If you deleted the 0 in last months program, as some members did, the program will play a weak Can Can song.

If you get tire of looking at the green screen while the music plays, add TRACE (See page II-36 of your User's Reference Guide) to the program and run it. TRACE will not interfere with the music and you can watch the execution sequence of the program.

Next, enter the UNTRACE command. For programming study purposes, delete the REM contained in lines 230, 240, and 280. This will cause some distortion of

the music when you run the program. but you can see the execution of the read and data statements. The data will be printed under the headings contained in the lines where you deleted the REM. Removing the REM in the three lines changes the lines to a normal print command on your screen.

## Answers to Octobers BEGINNERS CHALLENGE

Immediate mode on your TI-99/4a is similiar to a calculator. When you press the ENTER key, the computer performs the function or immediate BASIC statement that was keyed into the computer. With the immediate mode you can solve math problems or print words on the screen or take other actions. Because of the immediate mode, your computer can solve the problem  $(2+3)*4-1$  without developing and entering a program to the problem. Simply enter  $(2+3)*4-1$  using the keyboard and the computer will print the answer 19.

Answer to the October PRO Challenge.

Change for a dollar by John Bailey

```
90 CALL CLEAR  
100 PRINT "HOW MANY WAYS CAN  
YOU MAKE CHANGE FOR A DOLLAR?":  
110 PRINT "HALF- QUARTERS  
NICKLES DOLLARS DIME  
S PENNYS"  
120 FOR HD= 0 TO 100 STEP 50  
130 FOR Q=D TO 100-HD STEP 25  
140 FOR D=0 TO 100-(HD+Q) STEP 10  
150 FOR N=0 TO 100-(HD+Q+D) STEP 5  
160 C=C+1  
170 IF INT(RND)<>1 THEN 190  
180 PRINT INT (HD/50);TAB(8);  
INT (Q/25); TAB(14);  
INT (D/10); TAB(19);  
INT (N/5); TAB 24;  
100-(HD+Q+D+N)  
190 NEXT N  
200 NEXT D  
210 NEXT Q  
220 NEXT HD  
230 PRINT "THERE ARE A TOTAL  
OF";C;"COMBINATIONS TO  
MAKE CHANGE FOR A DOLLAR."
```

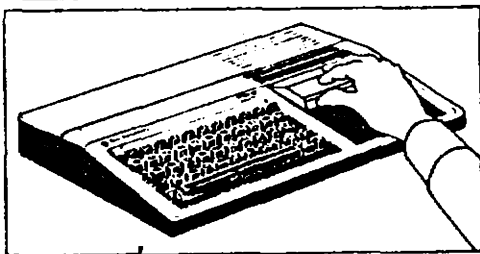
NOTE; Line 170 picks a random sample of

combinations to print in columns under the above headings.

RANDOM ACCESS  
by Larry Hughes

There are 293 ways to make change for a single dollar.

P.S. MERRY CHRISTMAS AND HAPPY NEW YEAR TO ONE AND ALL AND MAY NEXT YEAR BE A GREAT YEAR FOR ALL. ALSO, A GOOD YEAR TO READ ABOUT SINCERELY BYTE'S AND BITS ADVENTURES. ONE YOU WILL WANT TO READ.



The User Groups meet monthly for a program of discussion and presentation that will enable you to be better informed about your TI Computer. The Members share and exchange information. Some members have a broad range of computer expertise that they are willing to share with others. We are owners of TI Computers, and share an enthusiasm for these machines. You are welcome to visit a meeting before you join.

The Newsletter is published each month to serve the need of the Home Computer Users of TI Computers. Members are encouraged to contribute articles for publication. Opinions expressed are those of the writer and not necessarily those of the Users Group, it's officers, editor or members.

Articles appearing in this Newsletter may be reproduced if appropriate credit is given to the author and the Users Group.

Effective Oct. 31, the \$50 rebate and the free lesson were cancelled. The free speech synthesizer offer for 6 modules is good until Dec. 31. The one-year warranty will be honored. "99'er Home Computer Magazine" has changed its name to "Home Computer Magazine". Starting with the Dec. issue, which you should receive around Dec. 15, they will also cover the IBM PCjr, Apple, and Commodore computers. They are skipping the Jan. issue and calling the one that you will receive in late Jan. the "Feb." issue. Of course, they should extend your subscription by one issue.

I have seen three new modules in stores: Donkey Kong by Atarisoft, Facemaker by Spinnaker, and Hopper by TI.

Page 11 of last month's newsletter said that in TI-WRITER "Each line can be up to 80 characters long." That is only true for the SCREEN. You can PRINT any length line that your printer can handle. I have printed 132 characters on a line (in condensed print) by setting .LM 0;RM 131. There is no limit on the value that RM can have.

Page 25 of last month's newsletter gave a program statement of: 110 DIM DUR(200), NOTE(200,3) and said that the program reserves 200 BYTES for DUR. That is incorrect. Actually, the program reserves 1,608 bytes. Two hundred is the maximum ITEM number. Since OPTION BASE 1 was not specified, OPTION BASE 0 (the default) is in effect making 201 items (0 through 200). And since each numeric variable takes 8 bytes, then the array DUR occupies 201 items \* 8 bytes/item = 1,608 BYTES. Similarly, array NOTE occupies (200 plus 1)\*(3 plus 1)\* 8 = 6,432 bytes.

FOR SALE

TI LOGO I, \$65, Call 667-3574.

**THE "INFOWORLD" MAGAZINE RECENTLY STATED THAT CORCOMP OF LAGUNA HILLS, CALIFORNIA WILL BE MANUFACTURING A COMPUTER THAT IS COMPATIBLE TO THE TI-99/4A. IT WILL HAVE 64K MEMORY, BASIC AND BUILT IN SPEECH. RUMORS ARE THAT IT WILL BE CALLED THE "CC-99/8. MORE DETAILS ON THIS MACHINE AS THEY BECOME AVAILABLE.**

FUTURA SOFTWARE, INC.  
P.O. Box 5581  
Fort Worth, Texas 76108

November 1, 1983

TO: TI USERS GROUPS

FROM: FUTURA SOFTWARE

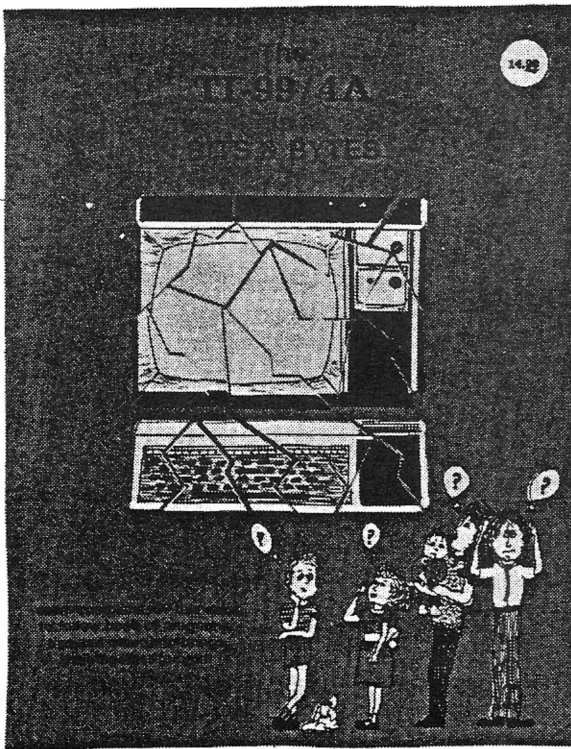
We know there is much speculation in light of TI's announcement on Friday. We, at FUTURA SOFTWARE, would like you to know that there will be continued support from our company on all of the software we sell.

There are many owners of TI systems who have been considering expanding them. **NOW IS THE BEST TIME TO TAKE ADVANTAGE OF REDUCED PRICES** to set up your complete business system.

We are very optimistic about the future. FUTURA has the best software available and we look forward to continued mutual support.

Charles and Glenda Ehninger & Staff

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CITY.....  
STATE..... ZIP.....  
VISA OR M/C #.....  
EXP. DATE.....  
SIGNATURE.....  
.....PLEASE SEND MY FRIENDS.....  
1).....  
2).....

# The Epson FX-80

Print Method ..... Serial impact dot matrix  
 Print Rate ..... 160 CPS  
 Print Direction ..... Bidirectional in text mode; uni-  
 directional in bit image mode,  
 superscript/subscript, or when  
 programmed  
 Number of Pins in Head . . . 9  
 Matrix ..... 9x9 to 18x18 (See "Print Modes")  
 or 11x9 user definable.

## PRINTING CHARACTERISTICS

Character Set ..... Full 96-character ASCII with  
 descenders; 9 international char-  
 acter sets; 256 programmable,  
 downloadable characters  
 Bit Image Graphics ..... 60 DPI  
 72 DPI (1:1 ratio)  
 80 DPI  
 90 DPI  
 120 DPI  
 Printing Modes ..... Standard, 9x9 matrix  
 Double, 9x18 matrix (advance  
 paper 1/216th and repeat line);  
 Emphasized, 18x9 matrix (shift  
 right and double strike);  
 Double Emphasized, 18x18  
 matrix (combination of above)  
 Number of Characters  
 per line ..... Selectable via DIP switch (80 or  
 132), and programmable

## PRINTING SIZES

	Characters Per Inch	Max. Characters Per Line
Normal	10	80
Normal Expanded	5	40
Compressed	17.16	132
Compressed Expanded	8.58	66
Elite	12	96
Elite Enlarged	6	48

## FORMS HANDLING

Line Feed ..... Programmable length 1 to  
 255/216ths  
 Form Feed ..... Programmable to 127 lines or 22"  
 Horizontal Tab ..... To 32 programmable positions  
 Skip Over Perf ..... Programmable length and interval  
 Vertical Tab ..... To 16 positions  
 Programmable Vertical  
 Format Unit ..... Allows vertical tab on multiple  
 forms  
 Reverse line feed .....

## INTERFACES

Standard ..... Centronics-style 8-bit Parallel  
 Optional ..... RS232, IEEE488  
 Buffer Size ..... 2K standard

## MEDIA HANDLING

Paper Feed ..... Pinfeed platen 9.5"-10"; adjust-  
 able snap-off tractor, optional  
 Paper Width Range ..... With optional tractor: 9.5" to 10"  
 fanfold, 4" to 9".  
 With standard pin/friction platen:  
 7.25" to 8.5" single sheet; 8.5" roll.

## Number of Parts to

Form ..... 1 original plus 2 copies  
 0.3 mm (.012") max.

Paper Path ..... Rear

## SWITCHES/LIGHTS/DETECTORS

Indicators ..... Power Light; Printer Ready;  
 Paper Out; On Line  
 Switches ..... Power On/Off; On Line; Form  
 Feed; Line Feed  
 Detectors ..... Internal buzzer (bell); Paper Out  
 Detection; Error Condition

## RELIABILITY

Print Head Life  
 Expectancy ..... 100 x 10<sup>6</sup> characters  
 MCBF (Excluding Print  
 Head) ..... 5 million lines

## INKED RIBBON

Color ..... Black  
 Type ..... Cartridge  
 Life Expectancy ..... 3 million characters

## ENVIRONMENTAL CONDITIONS

Operating Temperature  
 Range ..... 41°F to 95°F  
 Operating Humidity ..... 10 to 80% non-condensing

## POWER REQUIREMENT

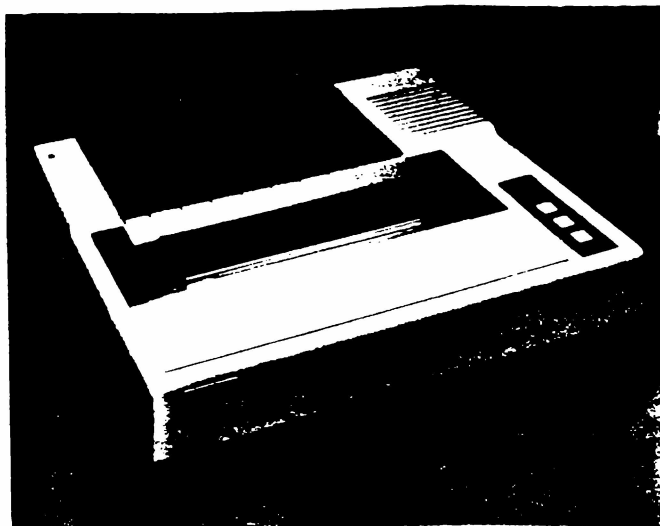
Voltage ..... AC 120 V ± 10%  
 Frequency ..... 49.5 to 60.5 Hz  
 Current ..... 1 amp  
 Power Consumption ..... 70 VA maximum

## SELF TEST MODE

Depressing Line Feed Switch while turning power ON  
 engages self-test which prints all characters in ROM.

## PHYSICAL CHARACTERISTICS

	Height	Width	Depth	Weight
FX-80	3.9"	16.5"	13.6"	16.5 lbs.
	100 mm	420 mm	347 mm	7.5 kg



## SPECIAL SALE

EPSON FX80 \$540  
 also:  
 EPSON RX80 \$299  
 EPSON RX80 FT \$399  
 FI Interface Cable w/printer purch. \$25

## TO ORDER CONTACT

WASHINGTON CALCULATORS and COMPUTERS  
 Phone: (301) 384-2010  
 P.O. BOX 6763, Silver Spring, MD 20906

Shipping ...\$4.00 MD residents add 5% tax  
 Effective Dec 1, 1983

TIPS FROM THE TIGERCUB #6

I NEVER THOUGHT THAT TEXANS WERE QUITTERS, BUT THEY HAVE FIRED ALL THEIR COWBOYS, SO ITS UP TO THE USERS' GROUPS TO RIDE HERD ON A COUPLE OF MILLION TI LONGHORNS OUT THERE. TIGERCUB WILL HELP TO FEED THEM WITH SOME LOW-COST PROGRAMS.

I HAVE OVER A HUNDRED ABSOLUTELY ORIGINAL PROGRAMS AT ONLY \$3 EACH, NO MINIMUM ORDER, AND MY CATALOG IS JUST \$1, DEDUCTABLE FROM YOUR FIRST ORDER. AT THOSE PRICES I CAN'T AFFORD MUCH ADVERTISING, SO PLEASE TELL YOUR FRIENDS ABOUT ME!

```

100 CALL CLEAR
110 PRINT " THE TIGERCUB'S
CHRISTMAS":TAB(11);"ORNAMEN
T":;"BY JIM PETERSON":;
120 PRINT " USE ARROW KEYS A
ND W,R,Z":;"AND C KEYS TO MOV
E CURSOR":;"THEN PRESS ANY O
THER KEY TO"
130 PRINT "PRINT DESIGN, OR
ENTER TO":;"SKIP. USE BOTH SH
IFTED AND":;"UNSHIFTED LETTER
S AND PUNCT-"
140 PRINT "UATION, ALSO TYPE
ANY LETTER":;"WITH CTRL HELD
DOWN."
150 PRINT " USE FCTN 1 TO CH
ANGE PAT-":;"TERN OF LAST CHA
RACTER PRIN-":;"TED, OR FCTN
2 TO CHANGE ITS"
160 PRINT "COLOR, OR FCTN 3
TO CHANGE":;"ALL THE COLORS,
OR FCTN 7":;"TO SLOWLY CHANGE
ALL THE"
170 PRINT "PATTERNS - BUT ST
AY AWAY":;"FROM FCTN 4 AND FC
TN = 11":;" PRESS ANY
KEY"
180 CALL KEY(O,K,ST)
190 IF ST=0 THEN 180
200 DIM AS(16)
210 CALL CLEAR
220 FOR SET=1 TO 16
230 CALL COLOR(SET,5,16)
240 NEXT SET
250 CALL VCHAR(1,31,1,96)
260 CALL SCREEN(2)
270 FOR CH=33 TO 159
280 PRINT CHR$(CH);" ";
290 Z=Z+1
300 IF Z/14<INT(Z/14)THEN 3
20
310 PRINT :;
320 NEXT CH
330 GOSUB 630
340 GOSUB 940
350 CALL VCHAR(1,3,32,672)
360 CALL VCHAR(1,29,1,192)

```

```

370 R=6
380 C=11
390 CALL KEY(3,K,ST)
400 IF ST=0 THEN 390
410 IF K<8 THEN 820
420 ON POS("WERDCXZS",CHR$(K
),1)+1 GOTO 390,490,470,460,
440,430,530,520,500
430 R=R+ABS(R<12)
440 C=C+ABS(C<16)
450 GOTO 540
460 C=C+ABS(C<16)
470 R=R-ABS(R>1)
480 GOTO 540
490 R=R-ABS(R>1)
500 C=C-ABS(C>5)
510 GOTO 540
520 C=C-ABS(C>5)
530 R=R+ABS(R<12)
540 CALL HCHAR(R,C,42)
550 CALL KEY(5,CH,ST)
560 IF ST=0 THEN 550
570 IF (CH=87)+(CH=69)+(CH=8
2)+(CH=83)+(CH=68)+(CH=90)+(
CH=88)+(CH=67)THEN 550
580 CALL HCHAR(R,C,CH)
590 CALL HCHAR(25-R,C,CH)
600 CALL HCHAR(R,33-C,CH)
610 CALL HCHAR(25-R,33-C,CH)
620 GOTO 390
630 DATA O,18,24,3C,42,5A,6
6,7E,81,99,A5,BD,C3,DB,E7,FF
640 FOR J=1 TO 16
650 READ AS(J)
660 NEXT J
670 FOR CH=33 TO 159
680 GOSUB 700
690 GOTO 800
700 FOR L=1 TO 4
710 RANDOMIZE
720 X=INT(16*RND+1)
730 BS=BS&AS(X)
740 CS=AS(X)&CS
750 NEXT L
760 CALL CHAR(CH,BS&CS)
770 BS=IUL$
780 CS=IUL$
790 RETURN

```

```

800 NEXT CH
810 RETURN
820 ON K+1 GOTO 390,830,390,
850,880,390,390,920
830 GOSUB 670
840 GOTO 390
850 IF (CH<33)+(CH>159)THEN
390 .
860 GOSUB 700
870 GOTO 390
880 SET=INT(CH/8)-3
890 IF SET<2 THEN 390
900 GOSUB 980
910 GOTO 390
920 GOSUB 940
930 GOTO 390
940 FOR SET=2 TO 16
950 RANDOMIZE
960 GOSUB 980
970 GOTO 1030
980 X=INT(15*RND+2)
990 Y=INT(15*RND+2)
1000 IF Y=X THEN 990
1010 CALL COLOR(SET,X,Y)
1020 RETURN
1030 NEXT SET
1040 RETURN

```

THIS ROUTINE CONTAINS MANY IDEAS WHICH MAY BE EDUCATIONAL TO BEGINNING PROGRAMMERS.

LINES 110-170 WILL SHOW YOU HOW TO NEATLY FORMAT THE TEXT ON THE SCREEN. LINES 180-190 HOLD THE TEXT ON THE SCREEN UNTIL ANY KEY IS PRESSED; THIS IS MUCH BETTER THAN A DELAY LOOP, BECAUSE DIFFERENT PEOPLE READ AT MUCH DIFFERENT SPEEDS.

LINES 220-260 CREATE A WHITE SCREEN WITH A BLACK BORDER, WHICH MAKES COLORED GRAPHICS STAND OUT MUCH MORE BRIGHTLY. AFTER A CALL CLEAR, THE SCREEN IS ACTUALLY FILLED, EXCEPT FOR A STRIP AT TOP AND BOTTOM, WITH 24 ROWS OF 32 COLUMNS OF THE BLANK SPACE-BAR CHARACTER. THE NORMAL SCREEN COLOR IS LIGHT GREEN (4) IN BASIC OR CYAN (8) IN EXTENDED BASIC, AND THE NORMAL COLOR OF ALL THE CHARACTER SETS IS BLACK (2) ON TRANSPARENT (1); THE BLANK CHARACTER HAS NO FOREGROUND COLOR AND THE TRANSPARENT BACKGROUND COLOR LETS THE SCREEN SHOW THROUGH. LINE 230 CHANGES ALL THE SETS TO DARK BLUE ON WHITE, SO THE BLANK SPACE CHARACTER BECOMES WHITE. THE STRIP AT THE TOP AND BOTTOM OF THE SCREEN IS FILLED WITH THE EDGE CHARACTER, ASCII 1, WHICH IS TRANSPARENT. LINE 250 PRINTS TWO COLUMNS OF THE EDGE CHARACTER AT THE RIGHT EDGE, THEN WRAPS AROUND TO PRINT TWO MORE COLUMNS AT THE LEFT EDGE. THE BLACK SCREEN COLOR, CALLED IN LINE 260, CAN NOW SHOW THROUGH THE TRANSPARENT EDGE CHARACTER ON ALL FOUR SIDES.

LINES 270-280 PUT ALL THE PRINTABLE CHARACTERS ON THE SCREEN, TO GIVE YOU SOMETHING TO WATCH WHILE THE PROGRAM IS BEING INITIALIZED. THE " " IN LINE 280 PUTS A BLANK SPACE AFTER EACH CHARACTER, AND THE SEMI-COLON

KEEPS THE PRINT ON THE SAME LINE UNTIL IT IS FULL. SINCE 14 CHARACTERS CAN BE DOUBLE-SPACED ON A 28-COLUMN PRINT LINE, A PRINT ROW IS SKIPPED WHENEVER THE VALUE OF Z BECOMES EVENLY DIVISIBLE BY 14.

NOW THE PROGRAM GOES TO THE ROUTINE IN LINES 630-810 TO REDEFINE EVERY KEYBOARD CHARACTER TO A SYMMETRICAL ORNAMENTAL PATTERN. THE DATA STATEMENT IN LINE 630 CONTAINS 16 PAIRS OF HEXADEcimal NUMBERS WHICH ARE MIRROR IMAGES OF EACH OTHER; LOOK AT THE CHART ON PAGE 109 OF YOUR "BEGINNER'S BASIC" TO SEE WHAT I MEAN. LINES 640-660 READ THESE INTO 16 SUBSCRIPTS OF A\$; THUS THE DIMENSION STATEMENT IN LINE 200 WAS NECESSARY.

NEXT, LINES 670-800 RANDOMLY COMBINE THESE PAIRS TO FORM SYMMETRICAL CHARACTERS. LINES 680,690 AND 790 ARE ONLY SO THAT WE CAN LATER RE-ENTER THE MIDDLE OF THIS ROUTINE. LINES 700-750 LOOP 4 TIMES TO PICK A RANDOM VALUE OF 1 TO 16 FOR X, TO RANDOMLY SELECT THOSE MIRRORED PAIRS. B\$ IS BUILT UP TO 4 PAIRS OF THESE NUMBERS, FORMING THE UPPER HALF OF A CHARACTER WHICH WILL HAVE LEFT/RIGHT SYMMETRY. AT THE SAME, C\$ IS BUILT UP OF THESE SAME 4 PAIRS IN REVERSE. FINALLY, LINE 760 COMBINES B\$ AND C\$ TO REDEFINE A CHARACTER WHICH IS ALSO SYMMETRICAL TOP/BOTTOM. SINCE B\$ AND C\$ WERE BUILT UP BY ADDING ONTO THEMSELVES, LINES 770-780 MUST CANCEL THEM OUT BEFORE THEY ARE USED AGAIN IN THE NEXT LOOP OF CH. NUL\$ IS NOT A MAGIC WORD, IT IS JUST A STRING VARIABLE NAME WHICH IS NEVER GIVEN A VALUE, THEREFORE REPRESENTS AN ERASED VALUE.

THE PROGRAM RETURNS TO LINE 340 AND THEN TO 940, WHERE EACH CHARACTER SET FROM 2 TO 16 IS GIVEN A DIFFERENT COLOR COMBINATION SELECTED RANDOMLY. LINE 1000 INSURES THAT THE FOREGROUND AND BACKGROUND COLOR WILL NOT BE THE SAME. AGAIN, LINES 960-970 AND 1020 ARE JUST SO THAT WE CAN LATER RE-ENTER THIS ROUTINE IN THE MIDDLE.

SINCE A CALL CLEAR WOULD ERASE OUR SCREEN BORDERS OF ASCII 1, THE SCREEN IS CLEARED BY THE CALL VCHAR WIPE IN LINE 350, AND LINE 360 THEN WIDENS THIS TRANSPARENT BORDER TO LEAVE ONLY A 24x24 SQUARE.

LINES 390-540 ARE A VERY COMPACT AND EFFICIENT ROUTINE TO MOVE THE CURSOR WITH THE ARROW KEYS AND DIAGONAL KEYS, WITHOUT GOING BEYOND PREDETERMINED BORDERS. WE DON'T HAVE ROOM TO EXPLAIN IT HERE, SO WE WILL GIVE A MORE COMPLETE VERSION IN A FUTURE TIPS.

OUT OF MEMORY, SO MERRY CHRISTMAS AND HAPPY HACKIN'

JIM PETERSON

## THE WASHINGTON DC AREA TI HOME COMPUTER USERS GROUP

The Washington DC Area TI Home Computer Users Group meets monthly at the Fairfax (Va.) High School. The regular meeting night is the second Thursday of each month. The MEETING for DECEMBER will be held on the regular THURSDAY SCHEDULE at 7:00 PM, December 8th, also the JANUARY MEETING will be on Thursday JANUARY 10, 1984.

For directions or other info Call Frank Jordan at (301) 899-3882 or Bill Whitmore (703) 777-2017.

## TIBUG - THE BALTIMORE USERS GROUP

The Baltimore Group meets the FIRST TUESDAY of each month at the PINEGROVE ELEMENTARY SCHOOL in Parkville, Md. at 7:00PM.

## HAGERSTOWN - WILLIAMSPORT TI USERS GROUP

Meetings are held at the WILLIAMSPORT MEMORIAL LIBRARY on the 3rd FRIDAY of each month. Also a free INSTRUCTIONAL MEETING is held on the FIRST FRIDAY each month. Meetings start at 7:00PM. For more info call Sam Williams at (301) 223-8014.

## MONTGOMERY COUNTY TI USERS GROUP

The Group meets at The SLIGO INTERMEDIATE SCHOOL, in the Library at 7:30PM. The regular meeting night is the 4th THURSDAY of each month. For more information call ALLEN MINTON at (301) 493-4502 or DAVE HILL at (703) 941-6876. Either number may be called without toll from Washington DC area. Next meeting THURSDAY, December 22.

## TEXAS INSTRUMENTS PROFESSIONAL COMPUTER USERS GROUP

The second meeting in the Washington DC Area of the TI-PC Users Group will be held on TUESDAY, JANUARY 10, 1984 at the Computer Age Learning Center classroom, 9431 GEORGIA AVE., SILVER SPRING, MD. at 7:30PM. This is the second meeting, we hope to establish one of the Country's first TI-PC Groups. If you have a PC this will be the meeting that you have been waiting for. For the others that have been trying to decide whether the PC is to be your computer in the near future, you will find the meeting and demos very worthwhile. This meeting room is located only one block from the beltway (I495). Located one block+ south (inside) beltway, on the left side of Georgia Ave.

## BOWIE - CROFTON TI USERS GROUP

The BOWIE - CROFTON Group meets on the THIRD WEDNESDAY of each month. The meetings will be held at the Help Others Help Social Hall in the Bowie Plaza Shopping Center on Rt 197 in Bowie, Md. The meetings start at 7:00PM. For info or directions call Chris Goodman at 262-6633 or 262-5570

## SEVERNA PARK TI USERS GROUP

The Severna Park TI Users Group's next meeting will be held at the SEVERNA PARK LIBRARY on McMinsey Rd. near Md. Rt. 2, across from the Severna Park Shopping Center at 7:00PM on FRIDAY, JANUARY 7, 1984.

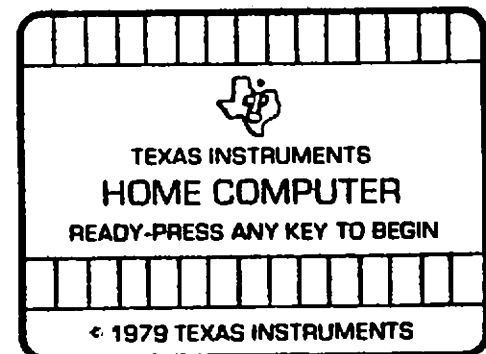


# MERRY CHRISTMAS

```

100 CALL CLEAR
110 CALL COLOR(2,12,12)
120 CALL VCHAR(1,6,42,1)
130 CALL VCHAR(2,7,42,1)
140 CALL VCHAR(3,8,42,3)
150 CALL VCHAR(6,7,42,1)
160 CALL VCHAR(6,8,42,1)
170 CALL COLOR(3,7,7)
180 CALL VCHAR(7,6,52,8)
190 CALL VCHAR(7,7,52,8)
200 CALL VCHAR(7,8,52,8)
210 CALL VCHAR(7,9,52,8)
220 CALL COLOR(4,2,2)
230 CALL HCHAR(15,5,56,6)
240 CALL VCHAR(16,6,42,4)
250 CALL VCHAR(16,7,42,4)
260 CALL VCHAR(16,8,42,4)
270 CALL VCHAR(16,9,42,4)
280 CALL VCHAR(20,7,42,2)
290 CALL VCHAR(20,8,42,2)
300 CALL HCHAR(22,5,42,6)
310 CALL HCHAR(23,3,42,10)
320 CALL HCHAR(24,3,42,10)
330 FOR X=1 TO 1200
340 NEXT X
350 CALL CLEAR
360 CALL SCREEN(2)
370 FOR X=1 TO 300
380 NEXT X
390 CALL SCREEN(9)
400 A$="      MERRY CHRISTMAS"
410 B$="      FROM      "
420 C$="      SINCERELY BYTE'S"
430 D$="      AND      "
440 E$="      BITS CORNER  "
450 PRINT A$: : B$: : C$: : D$: : E$: : :
460 CALL SOUND(1200,392,4,330,8,131,10)
470 CALL SOUND(400,440,4,349,8,131,10)
480 CALL SOUND(800,392,4,330,8,131,9)
490 CALL SOUND(2400,330,4,262,6,196,9)
500 CALL SOUND(1200,392,4,330,8,131,10)
510 CALL SOUND(400,440,4,349,8,131,10)
520 CALL SOUND(800,392,4,330,8,131,9)
530 CALL SOUND(2400,330,4,262,6,196,9)
540 CALL SOUND(1600,587,2,349,4,247,8)
550 CALL SOUND(800,587,3,349,5,247,9)
560 CALL SOUND(2400,494,3,294,6,196,9)
570 CALL SOUND(800,587,3,349,5,247,9)
580 CALL SOUND(2400,494,3,294,6,196,9)
590 CALL SOUND(1200,392,4,330,8,131,10)
600 CALL SOUND(1200,392,4,330,8,131,10)
610 CALL VCHAR(1,24,42,1)
620 CALL VCHAR(2,25,42,1)
630 CALL VCHAR(3,26,42,3)
640 CALL VCHAR(6,25,42,1)
650 CALL VCHAR(6,26,42,1)
660 CALL VCHAR(7,24,52,8)
670 CALL VCHAR(7,25,52,8)
680 CALL VCHAR(7,26,52,8)
690 CALL VCHAR(7,27,52,8)
700 CALL HCHAR(15,23,56,6)
710 CALL VCHAR(16,24,42,4)
720 CALL VCHAR(16,25,42,4)
730 CALL VCHAR(16,26,42,4)
740 CALL VCHAR(16,27,42,4)
750 CALL VCHAR(20,25,42,2)
760 CALL VCHAR(20,26,42,2)
770 CALL HCHAR(22,23,42,6)
780 CALL HCHAR(23,21,42,10)
790 CALL HCHAR(24,21,42,10)
800 CALL VCHAR(1,4,42,1)
810 CALL VCHAR(2,5,42,1)
820 CALL VCHAR(3,6,42,4)
830 CALL VCHAR(6,5,42,1)
840 CALL VCHAR(7,4,52,8)
850 CALL VCHAR(7,5,52,8)
860 CALL VCHAR(7,6,52,8)
870 CALL VCHAR(7,7,52,8)
880 CALL HCHAR(15,3,56,6)
890 CALL VCHAR(16,4,42,4)
900 CALL VCHAR(16,5,42,4)
910 CALL VCHAR(16,6,42,4)
920 CALL VCHAR(16,7,42,4)
930 CALL VCHAR(20,5,42,2)
940 CALL VCHAR(20,6,42,2)
950 CALL HCHAR(22,3,42,6)
960 CALL HCHAR(23,1,42,10)
970 CALL HCHAR(24,1,42,10)
980 CALL SCREEN(16)
990 GOTO 460

```



## NEW TI PORTABLE PROFESSIONAL COMPUTER

A portable computer fully compatible with the desktop TI Professional Computer was announced by TI. Available with either a built in 9-inch color or monochrome display, same high resolution graphics, memory expansion up to 768K bytes and easy to use keyboard as the PC.

All software programs available for the PC are compatible with the TI-PPC. The keyboard of the TI-PPC attaches to the system unit, which contains the CPU, video display, disk drive and yet only weights 33 pounds. Other features include a 16 bit CPU and space for another 1/2 height disk drive. It also has the ability to drive an external monitor.

The suggested retail price is \$2395 for the monochrome display unit with one disk drive and \$2965 for the color unit. Shipments will begin in December 83.

### 10 MEGABYTE WINCHESTER DRIVE FOR THE TI-PC

TI announced that a new 10M byte Winchester disk drive is now available for the PC. This is twice the storage of the 5M drive, while only increasing the retail price by \$100.00.

According to a TI spokesman, "More efficient manufacturing techniques and new technologies have allowed us to decrease the cost of producing a disk with increased storage capacity. TI has passed that savings on to the consumer -- offering him increased capabilities at an affordable price".

The drive fits inside the TI-PC. Retail price of the 10M drive is \$2295, which includes a controller board and diagnostics software package. A limited quantity of the 5M byte drives are available at the reduced price of \$1795.

### 8087 NUMERIC CO-PROCESSOR FOR TI-PC

TI has enhanced the capabilities of its Professional Computer with an 8087 numeric co-processor option. The new option can make the TI-PC run up to 100 times faster with increased accuracy in calculation applications. The package consists of the 8087 processor chip, manual and diagnostics software.

The suggested list price for the 8087 package is \$325.00.

### PERSONAL/PROFESSIONAL COMPUTERS -- HOW CAN THEY HELP YOU?

Texas Instruments has published a new book which will help individuals evaluate the uses of a personal or professional computer. It will help you in the evaluation of a system's most effective uses.

The book also shows you actual applications in the area of financial planning, word processing, file and data management, accounting, communications and graphic displays. Also the use of voice control, coupled to a computer, in improving time management is described.

Easy to use and read, the 256 page, soft cover book uses color to emphasize diagrams and flow charts which appear throughout the book. "Personal/professional Computers -- How Can They Help You?" was written by the staff of the Computer Science Department at North Texas State University. It will be available soon at leading bookstores or computer retailers. You may also order direct from TI: Texas Instruments, P.O.Box 3640 M/S 54, Dallas, TX 75285. Price \$12.95 plus tax and \$1.25 postage.

## SMART PROGRAMMING GUIDE FOR SPRITES 5<sup>th</sup> Edition

This guide will show you some of our professional programming secrets on how to: Use CALL REEK. • Get Sprites to pick up objects, beat dots and lay down a trail. • Shoot sprites without missing a coincidence. • Make one sprite chase another. • Easily convert sprite rows and columns into graphic rows and columns and visa versa. • Generate moving sprite patterns. • Use 3 different CALL KEY or CALL JOYST examples for moving sprites. • Write a GENERAL BAR GRAPHING program (to one pixel accuracy) that shows you sprites aren't just for games.

Full of fast running and Byte saving examples that you can use in your existing programs or combine together to write your own programs. Each example program is fully documented in a step by step method that is easy to understand. A TI 99/4 or 99/4A computer and the extended basic command module are required.

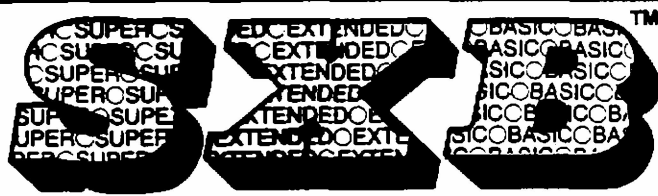
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- **STRING Subroutines** include data compaction and conversion.
- **INTEGER Subroutines** allow storage of 4 times as many numbers in a numeric array.
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## Texas Instruments Professional Computer Goes Hollywood

Starting with the 1983-1984 television season, the Texas Instruments Professional Computer will be seen weekly as a key contributor to the Ewing empire in television's most successful on-going series, "Dallas."

TI's Hollywood connection does not stop with "Dallas." Two TI Professional Computers will be used on the popular series "Falcon Crest"—one in Richard Channing's office at the New Globe Newspaper and one in the Falcon Crest wine laboratory. Another will be used in Abby Cunningham's new office on "Knot's Landing." And on the popular TV detective series "Matt Houston," a TI Professional Computer will be seen in the starring

role of "Baby," Houston's computer helper, and another will be a permanent performer in the office of Houston's assistant, C.J.

In the adventure series "Knight Rider," a TI Professional Computer will help star Michael Knight fight crime every week. And the new TV series "Hotel," starring Bette Davis, will feature a TI Professional Computer on the hotel's reception desk.


The TI Professional Computer is also going to the movies. "Uncommon Valor," "Energy S.O.S.," "The Fantastic World of D.C. Collins," and "Buckaroo Banzai" are some of the upcoming films that will air the TI Professional Computer.

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NOTICE TO MEMBERS OF THE WASHINGTON OC AREA TI HOME COMPUTER GROUP. Please check your mail label for the renewal date of your Membership. If your date is NOV, DEC 1983 or JAN 1984 the date will be circled in RED. We are now trying to group the expiration dates so that the mail list will be easier to maintain. Your dues will be prorated. Thank you for your cooperation. If your date is circled in red please remit Nov \$14.00, Dec \$13.00 or Jan \$12.00, to extend your membership until JAN 1985.

# ROBINS Inc.



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<b>LABELS</b>		<b>PRINT WHEELS</b>	
3 1/2 x 15/16 (5000)	\$16.00	Diablo Plastic	6.40
<b>PAPER (15, 18 &amp; 20 lb.)</b>		Diablo Metal	41.50 & 49.95
9" x 11		Diablo 620	11.40
<b>RIBBONS</b>		QUME	6.40/7.90
Radio Shack		Smith-Cor TP 1	4.90
Daisy Printer II	4.75 each	Olivetti	15.50
Line Printer III & IV	6.50 each	<b>OLYMPIA</b>	26.50
Line Printer VI & VIII	6.50 each		
Diablo 620 M.S.	7.45 each	<b>DISKETTES</b>	
HyType II M.S.	46.50 doz.	5 1/4 ss/DD	
NEC 5500 7700 M.S.	63.00 doz.	VERBATIM	26.50
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CITICOR Prowriter	11.90 each	<b>RIBBONS FOR OLYMPIA</b>	
QUME		\$4.00 ea	10/37.95
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M.S.IV	54.00 doz.	Box of 10	\$16.95
IDS 560	5.75 each	<b>560-5900</b>	
EPSON MX 70 80	6.00 ea	8304 Hilltop Road	
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<b>LOAD YOUR OWN!</b>		(Merrifield Area)	
Refills for Diablo QUME			
RICOH NEC	1.50		
EPSON MX 70 80	3.50		
MX 100	8.99		

**Hours: Monday thru Friday 9-5, Saturday 10-2**

MEMBERSHIPS: Memberships are available to the general public. Cost for dues depend on the group you join. Membership information for each group is: WASHINGTON D. C. AREA TI USER'S GROUP--Contact Frank Jordan at (301) 899-3707 or mail your dues (\$12) to Frank at 4100 Canterbury Way, Temple Hills, Md. 20748; TI BALTIMORE USER'S GROUP (TIBUG)--Send \$15 to Membership Chairman TIBUG PO BOX 3, Perry Hall, MD. 21128; HAGERSTOWN-WILLIAMSPORT TI USER'S GROUP--Write Sam Williams at PO BOX 376, Williamsport, MD 21795 or call (301) 223-8014; MONTGOMERY COUNTY TI USER'S GROUP--Call Allen Minton at (301) 949-4085.

TI NEWS  
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TIME SENSITIVE MATERIAL

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WASHINGTON O. C. AREA  
 TI 99/4 USER'S GROUP

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