

8703 (092)

NEW Horizons

This newsletter is published jointly by OH-MI-TI and New Horizons TI-99/4A Home Computer Users' Groups. Material may be reproduced without permission provided the author and source are acknowledged. For more information concerning TI Users' Groups in the Northwest Ohio area, contact:

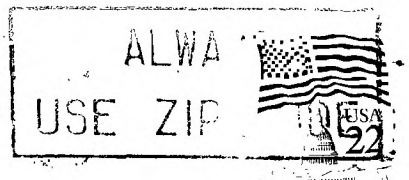
Robert Peters President, OH-MI-TI 225 S. Wheeling Oregon, OH 43616 (419) 693-7934	//////////////////////////////////// (419) 385-7484 TICOMM BBS >>> 24-HRS <<< SYSOP > MILLS - TURNER <	Don Turner President, New Horizons 5533 Fleet Street Toledo, OH 43615 (419) 537-1454
Meeting: 13 MAR.'87 Fri Oregon #2 Fire Station		Meeting: 14 MAR.'87 Sat Unity Church Secor Road

THE NEWSLETTER STAFF

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Phil Bennis	Marilyn Schafstall
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LOCAL CONTRIBUTIONS BY;

BILL SAGER KENT SHEETS PAUL SNEIDER



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# THE PRESIDENTS PAGE

## PRESIDENT'S CORNER

by BOB PETERS  
OH-MI-TI

The club had elections at the last meeting and all of the chairs were filled. The new officers are Vice President: Kent Sheets, Secretary: Pat Hunsinger and the two directors are Bud Mills and Mark Lamb. Pat Hunsinger is also the Librarian. I'm sure you will give the new officers your full cooperation, as they will yours.

The club has a new mailing address. It is:

OH-MI-TI  
P.O. Box 167648  
Oregon, Dh. 436167648

We (the officers) would like to know what you want to see in the way of presentations and software sales. Without your input we do the best that we can. We would also like to have some volunteers to put on demos at the meetings.

This month's presentations will be CSGD3 by Kent Sheets and Sideways Print for MultiPlan by myself. There will be 300 blank diskettes for sale. The software sales for this month are Sideways Print and Funnelweb Farm Utilities (to update your TI Writer to version 3.4). Also on the Funnel Web disk will be a program that is called Disk Hacker that allows you to see how each track on your disk is formatted.

The next meeting is on March 13 at 7 P.M., at Oregon #2 Fire Station. Hope to see you there.

## NEW HORIZONS

by Don Turner

March is upon us already, its blustery weather lets us know spring is nearing. I hope everyone is ready for this month's meeting. This month is packed with some great demonstrations and new club disks. The first Basic/Ext Basic SIG seemed to be a success. In fact I felt that there was not enough time, perhaps it can be extended.

This month, there is going to be a demonstration of 99 DOS. (Disk Operating System) This demo is going to be a good one and I highly recommend that you be there. Also this month a graphics program will be demo'd and it too sounds like a great TI software. Its astonishing that a computer that was orphaned several years ago still has new and better software showing up each month.

Last month the FAST-TERM demo fizzled out because we couldn't get the modem to contact our club's bulletin board, we are hoping to continue on it this month by making the connection. Jim Taylor did a splendid job despite the down fall of the modem.

Chris Dewy has expressed interest in being the club librarian this year. I am confident that he will do a splendid job organizing and updating our library. I still can not find a replacement for the Vice President's position. If ANYONE is interested please let me know. This is your chance to do the things you always wanted to but was afraid to ask. Have no fear, This position is easy.

Monty Schmidt's DSR book will be available for ever one to browse through. This book covers the DSR (device service routines) for the TI. For those interested in this book, they should see John Clulow. He will be able to tell you how to get a copy for yourself.

This month's meeting will be on March 14 at 2:00 PM. For those who are interested in the Basic SIG we will meet at 1:00 PM. Last month we talked about and demonstrated the PRINT command. This month we are going to talk about computational operations. This will include exponentiation, multiplication, addition, division and subtraction. We will also speak about the priority of the operations. I hope to see you there.

## FOR SALE

by Roger Biddle  
OH-MI-TI

### COMPLETE 99/4A SYSTEM

- P-BOX INCLUDING: 32K, CORCOMP
- DSDD CONTROLLER, RS232
- 720K DOUBLE SIDED HORIZONS
- RAMDISK
- STANDALONE DSDD WITH PS/CASE
- TI-WRITER WITH MANUAL
- MULTIPLAN WITH MANUAL
- EXTENDED BASIC WITH MANUAL
- EDITOR ASSEMBLER WITH BK
- SUPERCART
- SPEECH SYNTHESIZER WITH RESET
- BUTTON
- TI-99/4A CONSOLE
- LOGO I WITH MANUAL
- SIGNALMEN MARK 3 300 BAUD
- MODEM
- MINI MEMORY
- TE-II
- CARTRIDGE EXPANDER
- PLUS MANY CARTRIDGES

\*\*\*\*\*  
I'M SURE I FORGOT SOMETHING,  
SO GIVE ME A CALL FOR PRICES AT  
419-666-4945

## DEADLINE

by NEWSLETTER STAFF  
OH-MI-TI and/or NEW HORIZONS

The following is the cutoff date for the NEWSLETTER.

MARCH 28  
APRIL 25  
MAY 30

These dates are all Saturday's.

## TRITONS PC/TI CLONE CONNECTION

WHAT'S THE USERS GROUP VERDICT?

by Bill Sager  
New Horizons

Most TI users groups have reported the news of the Triton IBM clone that is designed to utilize the 99/4A keyboard and your present monitor or TV. While some groups have only listed the specifications from the sales literature, others have expressed opinions as to the wisdom of purchasing this unit. How do these 99'ers feel? Every opinion and comment I have seen has been negative.

The consensus is that the price of almost \$600, with DOS and shipping, is barely below the price of a conventional IBM clone or compatible. Most think it makes little sense to buy the Triton product and still be using the 99/4A keyboard and a monitor or TV that can hardly be read in the 80 column mode. A more practical approach would be to just buy a complete clone system and keep the TI for your children or until you become totally familiar with a new system.

Understand that the Triton unit will not permit using any of your TI software in the IBM mode. You will need to obtain new software to use. There is no sharing of disk drives. The only things shared will be the keyboard and monitor, both of which might present serious obstacles in the IBM mode.

More than one remark was made that for home use, the 99/4A provides an adequate system. Sure, it may take a bit more effort and few minutes longer, but most home needs are filled with a expanded TI. Another opinion was that the conglomeration of connections seemed to be a makeshift approach to going the MS-DOS route.

Apparently the Triton device was targeted to console and console/tape recorder owners. They never upgraded their TI and most likely are not users group members and do not know of all the exciting things that can be done with the addition of disk drive(s) and 32K.

## COMPUTERIZED HOBBY

by PAUL SNEIDER  
NEW HORIZONS

IT REALLY AMAZES ME AT HOW MANY HOBBIES ARE NOW COMPUTERIZED. ONE OF MY HOBBIES IS METAL DETECTING FOR OLD AND LOST ITEMS. NOW, THE OLDER METAL DETECTORS WERE DEVICES THAT WOULD SEND OUT A FREQUENCY AND THEN MONITOR THE PULSE THAT RETURNED TO THE UNIT. IF THERE WAS METAL PRESENT- ANY METAL- A SOUND WOULD BE HEARD FROM A SPEAKER OR HEADPHONES, SORT OF A BUZZ OR BEEP.

THE MODERN DEVICES DO SOME UNBELIEVABLE THINGS. FOR EXAMPLE, WHEN METAL DETECTING A LAWN AND THE COIL OF THE UNIT PASSES OVER A PIECE OF METAL, THE SOUND THAT IS MADE IN THE HEADPHONES VARIES DEPENDING ON THE KIND OF METAL. IRON MAKES ONE SOUND, COINS ANOTHER KIND OF SOUND, ALUMINUM STILL A DIFFERENT SOUND. THAT HAS TO BE SPECIAL TYPE OF COMPUTER TO ANALYZE THE SIGNAL DETERMINING ITS LIKELY COMPOSITION AND THEN MAKING THE APPROPRIATE SOUND IN THE HEADPHONES.

BUT THEN THE DETECTOR DISPLAYS ON A METER THESE RESULTS AND CAN FURTHER DIFFERENTIATE IF THE METAL IS A PULLTAB, A BOTTLE CAP, A GOLD OBJECT, A SILVER OBJECT, A PENNY, NICKEL, DIME, QUARTER, HALF-DOLLAR, OR A DOLLAR!!!

THEN, IF A SWITCH IS THROWN, IT CAN IDENTIFY THE DEPTH THAT THE OBJECT IS UNDERGROUND!!!!

ANOTHER AMAZING FUNCTION OF THESE MODERN MACHINES IS THAT BY ADJUSTING CERTAIN CONTROLS, THE DETECTOR CAN OVERLOOK ANY METAL OBJECT IN, SAY, THE FIRST TWO INCHES OF THE GROUND!!! THE REASON IS THAT PULLTABS ARE A FAIRLY RECENT INVENTION OF MANKIND AND THEREFORE ARE IN THE FIRST TWO OR THREE INCHES OF GROUND. ANY OLD COINS LOST MORE THAN 50 OR 60 YEARS AGO ARE PROBABLY DEEPER THAN THREE INCHES.

THERE HAS TO BE SOME FANTASTIC COMPUTER INSIDE THESE DEVICES IN ORDER TO DO ALL THAT IN A SPLIT SECOND OF TIME! NOW WHAT I WOULD LIKE TO DO IS FIGURE OUT A WAY TO CONNECT MY DETECTOR TO MY TI 99/4A.

DONE ON A TI 994A  
NOT ON AN IBM !  
NOT ON AN APPLE !

## NORTHWEST OHIO 99'ers GO NATIONAL

by Your Raving Reporter

Four of our members original articles have recently been republished in other TI users group newsletters.

Steve Patterson - New Horizons  
"Hidden Characters"  
From the Oct 86 NW Ohio 99'er News in the Feb MSP 99'er (Minneapolis/St Paul) newsletter.

Dave Burkett - OH-MI-TI  
"The X-10 Powerhouse"  
From the Nov 86 NW Ohio 99'er News in the Feb Cleveland Area 99/4A newsletter and the Feb Philadelphia Area newsletter TI-D-Bits.

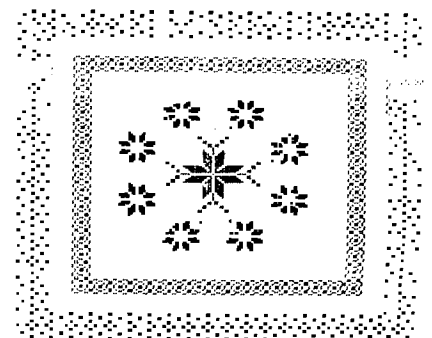
Bill Sager - New Horizons  
"CSGD III - A Review"  
From the Jan 87 NW Ohio 99'er News in the Feb Cleveland Area 99/4A newsletter.

Jim McCulloch - New Horizons  
"Adding To Your Supercart"  
From the May and June 86 NW Ohio 99'er News in the Feb Los Angeles group newsletter Topics. (if you can't recall seeing or meeting Jim at any of the meetings - it's because he lives out of town - in Chicago)

If you only glanced over these before you may want to read the articles again. Others thought there was some worthwhile information in them.

Additionally, John Clulow of New Horizons has been writing for MICROpendium and his recent articles appear in the Feb 87, Jan 87, Nov 86, and Aug 86 issues.

Congratulations all!



\*\* Press any key \*\*

A-Abort,U-Upload,D-Download? >D

DISK DIRECTORY

Checking Drive # 1

Diskname DRIVE-1

File Name Format Size

3/SDM-DOCS-DIS/VAR	21
3/5_MGR1---PROGRAM	33
3/5_MGR2---PROGRAM	30
ABORTION---UNKNOWN	18
ALTERDOS---DIS/FIX	7
ARCHIVER---PROGRAM	31
ASIMOVIAN--INT/VAR	52
ASTROID---PROGRAM	24
AUTOCHAR---PROGRAM	8
BBSLIST----DIS/VAR	15
BIBLESEC---PROGRAM	33
BUDGET----PROGRAM	43
CALENDAR---PROGRAM	32
CASTLE-----INT/VAR	61
CASTLEFIL--PROGRAM	40
CAVEQ-----PROGRAM	44
CISLIST03--DIS/FIX	77
CLIMATE----PROGRAM	35
CLOCKV2----PROGRAM	6
COPYV3-----PROGRAM	11
CTRL/EDIT2-DIS/VAR	4
DEW-----PROGRAM	11
DIAL-AWORD--PROGRAM	5
DIALAWORD--PROGRAM	5
DIALER-----PROGRAM	6
DIALERV2---PROGRAM	7
DM1002----PROGRAM	34
FR1002----PROGRAM	40
GASPGM-TI--PROGRAM	19
GEMINI-----PROGRAM	12
GENWRITER--PROGRAM	34
IGET-----DIS/FIX	17
IRA-----DIS/FIX	19
LOAD-----PROGRAM	2
LOADER-EXB--PROGRAM	9
LOTTO-----PROGRAM	11
MICROLABEL--PROGRAM	19
MORSE-----PROGRAM	36
MUSIC-KEYS--PROGRAM	18
NHFROG-----PROGRAM	26
OVERLAYER--PROGRAM	32
P-----PROGRAM	11
PEACE-----INT/FIX	8
PHONEBOOK--PROGRAM	33
PRAYSEC---PROGRAM	32
QUICK/DOC--INT/VAR	12
QUICKFIRE--PROGRAM	45
QUICKSORT--PROGRAM	8
READSECTOR-DIS/FIX	23
RECIPEFIL--PROGRAM	23
RECIPEV2---PROGRAM	23
SUBWAR-----PROGRAM	34
SWL-LOG----PROGRAM	33
TEXT128---PROGRAM	13
USERFILE---INT/FIX	1
VACATION---PROGRAM	12
WINDCHILL--PROGRAM	13
XMASTREE---PROGRAM	11

Checking Drive # 2

Diskname DRIVE2

File Name Format Size

CHECKERS---DIS/FIX	24
COUPONS---PROGRAM	34
NEWS-----DIS/VAR	72
NW086*1---DIS/VAR	56
PUPPYCHOW--DIS/VAR	3
SURVIVAL---DIS/VAR	39
TAXPLAN---INT/FIX	47
TAXPLANDOC-UNKNOWN	8
TO/DON_T---UNKNOWN	57
VCR/PRNT---UNKNOWN	5
VCR/SCRN---UNKNOWN	8
VCRDATA---INT/VAR	2
VCRLOAD---UNKNOWN	25

END OF DISK DIRECTORY

Use CRC error checking?(Y/N)N

File name? or C/R to exit >

User cancelled transfer.

TC-MAIL H.E.L.P.

Kent Sheets 3/87

OH-MI-TI

Several years ago, Don Veith did a review of a program called "TC-MAIL" by Thi Chau. It was written with the TI Forth programming language for great speed. It had a record storing capacity of 710 records on a single-sided, single-density disk. The program was originally distributed by Ramsoft Enterprises of Fullerton, CA.

After writing to Ramsoft Enterprises with no reply, and also calling a phone number that was listed in the review without any results, I am unable to locate any info about this program or the programmer.

If anyone knows the whereabouts of Thi Chau or a source for TC-MAIL please contact me. I am interested if any upgrades were ever made to this program.

Whatever happened to Ramsoft Enterprises?

Kent Sheets  
1673 S. North Curtice Road  
Curtice, Ohio 43412  
(419) 836-7877

1286 TI-COMM COMMANDS

A-TI-COMM Arcade	B-Bulletin
C-Chat with SysOp	D-Delete Message
E-Enter a Message	F-Feedback to SysOp
G-Goodbye	H-HELP(this screen)
I-system Info	L-Caller Log
M-Check for Mail	N-NW Ohio 99er News
P-Change Password	R-read Messages
S-Scan Messages	T-TI User Group
U-User List	V-Other Local BBS
W-UP/load & DN/load	X-Expert Mode
Y-Your Status	Z-System Time

ABCDEFGHIJKLMNPRSTUVWXYZ >Z

System Time is :22:53:40

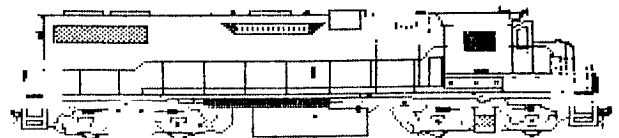
\*\* Press any key \*\*

Legend

F-Free	P-Pay
D-Donation	U-Unknown
L-Limited Hrs	N-New

NAME & OPERATING HOURS PHONE #

ATARI SAFARI.....	1-423-7677	U
BGSU FIDO..5P-1A.....	1-372-9928	U
BALLOON WORKS.....	1-289-8392	U
C-GATE.....	698-2610	F
CCCT.....	473-2228	F
CDS.....6PM-11 12PM-12AM.....	536-0815	FL
C-GATE.....	866-0554	U
COLOUR 80.....	476-8383	P
COLLEGE CRIER.....	537-4110	F
COLORAMA.....	877-5556	U
ENTROPY-1.....	866-8923	U
FANTASY ISLE.....	691-6459	U
FLAGCITY.....	1-423-0206	U
FUNK'S FORTRESS.....	691-0267	U
HACKERS HAVEN.....	874-0571	U
IBB1.....	729-4221	F
I/D MART.....	729-4404	F
JUNGLE THE.....	865-3639	U
LINE-ONE.....	1-423-2594	F
MOBB.....	1-756-4958	U
MVCC.....	1-728-7620	U
POWER HOUSE.....	472-6835	U
QUANTUM LEAP..8P-10PM.....	866-8663	L
ROMANS REALM.....	1-636-7934	U
STCCT.....	691-9016	F
TI-COMM.....	385-7484	F
TOLEDO NOCHANGE.....	385-8688	F
TOP SECRET #1.....	474-0086	F
TOP SECRET #2.11PM-7AM.....	478-6038	FL
TWILIGHT ZONE.6PM-930PM.....	829-2655	FL
ULTIMEX.....	874-4225	U



**FONTS, FONTS  
and More FONTS**  
ALSO CALLED CSGD USER DISK 4

by Bill Sager  
New Horizons

Take a look at the sixteen impressive, unique and new fonts that are available as CSGD User Disk Set 4. These are all fully compatible with every CSGD program to date. The set consists of two disks.

In addition to the sixteen new fonts there are 61 small graphics, which includes two complete sets of monograms in two different styles. But that's not all. If you own the CSGD I package you can also print 26 new pictures of airplanes, trains, computers, holiday scenes, and more.

Eleven of the sixteen fonts include lowercase letters and all have the complete set of numbers and various punctuation. If you recently obtained the CSGD III set of programs and want to expand on the variety of labels, letterheads, and messages you create, then this two disk set is just the ticket.

Since several people have already expressed interest, we'll try to arrange another users group special purchase at a discounted price. Plan to place your order at the March meeting for delivery at the April meeting.

**INDEX NW099'ER**

Kent Sheets 3/87

OH-MI-TI

Many times TI owners have asked about information about the TI99/4A. A lot of valuable information has been printed in the Northwest Ohio 99'er News over the years. The real trick is if you can find it.

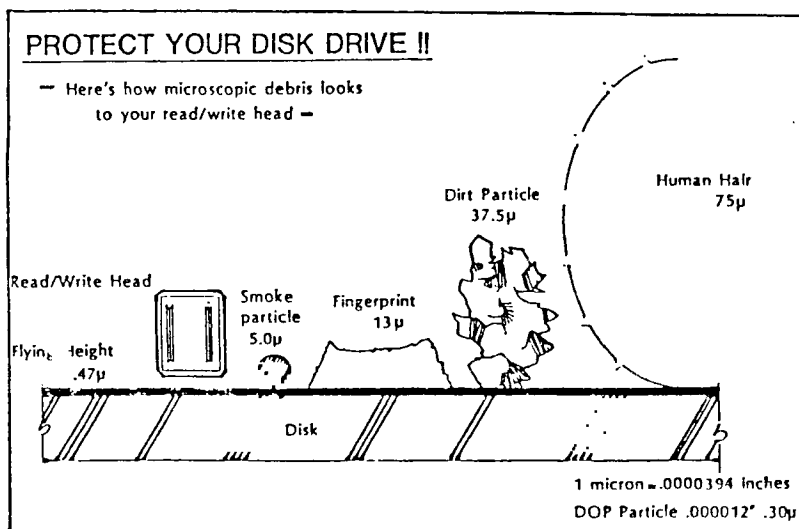
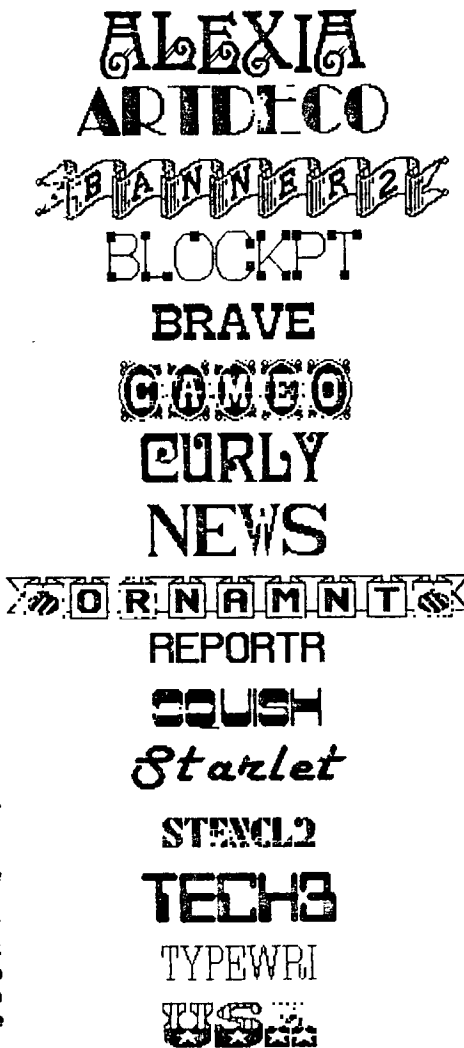
Each year I have indexed the Northwest Ohio 99'er News in a Dis/Var 80 file (That is why I have a computer, to be organized!). Using a program from Dave Romer, "Mini-Base", I am able to sort by article name, volumn number, issue number, or date published. I also use the feature in TI-Writer to locate "Key Words".

If you would like to use these index I have uploaded the files to TI-COMM BBS (385-7484).

- They are named:  
 NW086\*1-----1986 INDEX  
 NW085\*1-----1985 INDEX  
 NW084\*-----1984 INDEX  
 NW083\*-----1983 INDEX

The files for 1985 and 1986 are already sorted by article name. Files for 1983 and 1984 are listed by volumn, issue and date issued.

If you do not have access to TI-COMM BBS, just get a disk to me and I will copy the files for you.

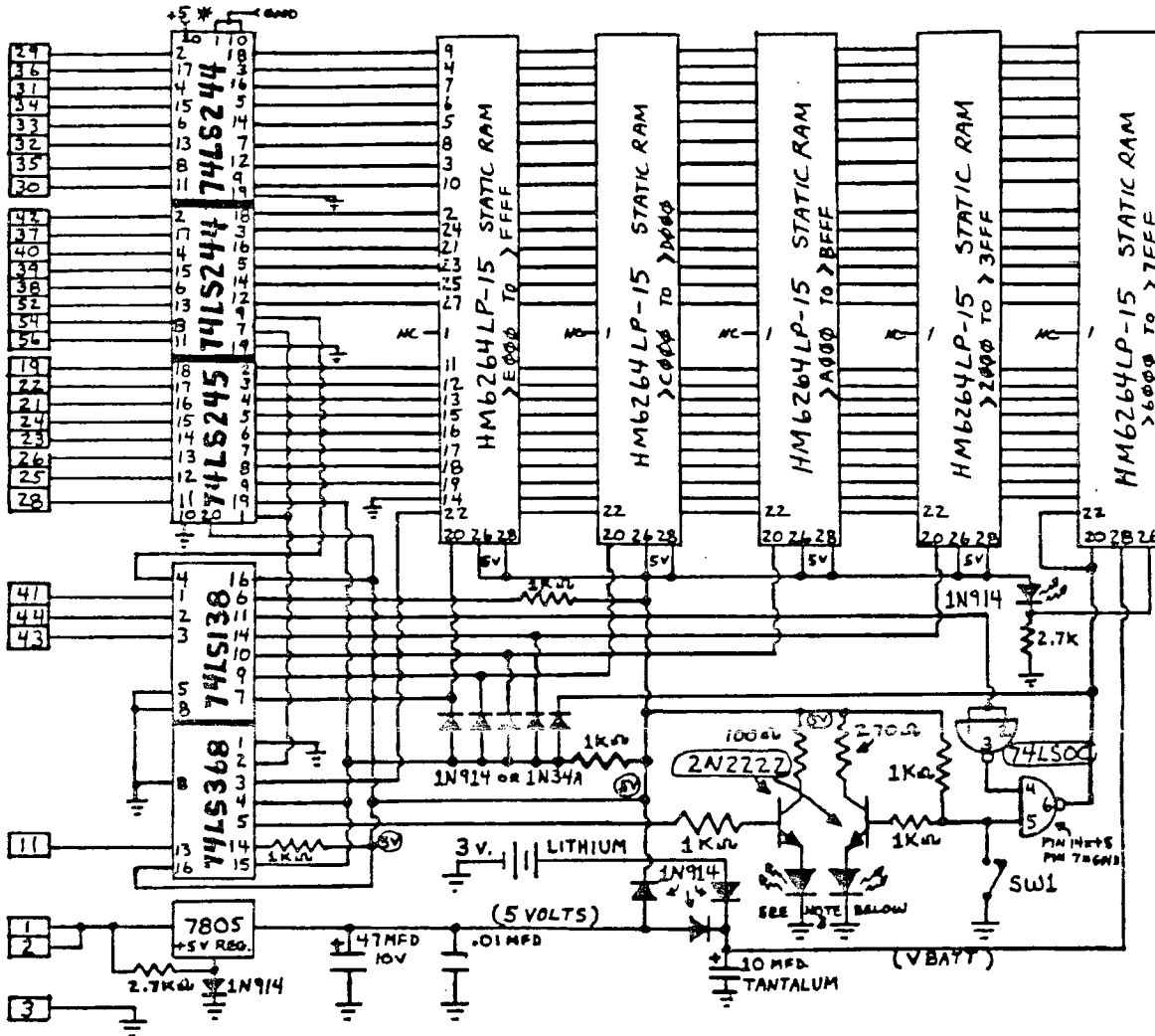


**RESERVED  
FOR MEMBERS  
- ONLY -  
CONTRIBUTE  
== NOW ==**



WEST PENN 99ERS FEB. 87

# EXPANSION BOX 32K WITH 8K MODULE RAM



\* BOTH 74LS244'S MUST HAVE +5 AND GND ON THESE PINS

EXPANSION BOX 32K WITH 8K MODULE RAM

- PARTS LIST:**  
**BASIC 32K MEMORY CARD:**  
 4 - 6264LP-15 STATIC RAM CHIPS  
 1 - 74LS138 CHIP  
 2 - 74LS244 CHIPS  
 1 - 74LS245  
 1 - 74LS368  
 1 - 7805 +5V REG.  
 1 - 2N2222 NPN TRANSISTOR  
 1 - LED (ONLY IF NO RV OPTION)  
 1 - 1N914 OR 1N34A DIODE (SEE NOTE 1 TO 3)  
 2 - 1N914 DIODES  
 4 - 1K 1/4 W. RES.  
 1 - 2.7K 1/4 W. RES.  
 1 - 100 OHM 1/4 W. RES.  
 1 - .47 MFD. 10V. ELECT.  
 1 - .01 MFD. DISC OR MONOLITHIC  
 1 - LEAD EDGE CONNECTOR (T.I. PART# L2111121-30) 30/60 CONTACT.  
 1 - APPROPRIATE CIRCUIT CARD FOR BOARD ASSEMBLY  
 7 - MISC SOCKETS, WIRE, SOLDER EQUIP.

- 8K OPTION:**  
 1 - 6264LP-15 STATIC RAM CHIP  
 1 - 74LS00 CHIP  
 1 - SPST TOGGLE SWITCH  
 1 - 3V. LITHIUM BATTERY AND HOLDER  
 1 - LED (IF 3 LEAD 2 COLOR LED) OR 2 - LED'S (INSTEAD OF THE ABOVE)  
 1 - 2N2222 NPN TRANSISTOR  
 1 - 2.7K 1/4 W. RES.  
 1 - 1N914 OR 1N34A DIODE (SEE NOTE 1 TO 3)  
 3 - 1N914 DIODES  
 2 - 1K 1/4 W. RES.  
 1 - 270 OHM 1/4 W. RESISTOR  
 1 - 10 MFD. 10V. TANTALUM CAP.

**NOTES:**

- 1) I HAD GOOD LUCK USING 1N914 DIODES FOR THE 32K LOGIC. GERMANIUM DIODES MAY BE USED FOR MORE ASSURANCE THAT A "LOW" LEVEL CAN BE DETECTED (MAY BE USED AS THE DECODE DIODES TO PIN 20 OF THE RAM (UP TO 5 DIODES), NOT IN THE +5 V. OR VBATT CIRCUIT.
- 2) IT IS A GOOD IDEA TO PUT A .1 MFD BYPASS CAP. ACROSS EACH +5 V. PIN OF EACH CHIP TO GROUND. (NOT NECESSARY)
- 3) I USED A THREE LEAD, TWO COLOR LED INSTEAD OF TWO SEPARATE LED'S. ASSUMING THE RED LED'S ANODE IS CONNECTED TO THE MAIN 32K SECTION, THE FOLLOWING COLORS WILL BE SHOWN IN THE PEB INDICATOR WINDOW:  
 RED - 32K BEING ACCESSED  
 GREEN - 8K MODULE MEMORY BEING ACCESSED  
 AMBER - 8K MODULE MEMORY ENABLED AND 32K BEING ACCESSED
- 4) THE CIRCUIT SHOWS BATTERY BACKUP FOR THE 8K MEMORY ONLY. PIN 28 OF THE REST OF THE MEMORY CHIPS COULD BE CONNECTED TO VBATT IF YOU DESIRE, WHICH WOULD THEN SUPPORT THE 32K DURING POWER FALL (OR TURNING OFF THE MACHINE), BUT UNLESS YOUR AN ORDINARY PROGRAMMER, YOU WILL NOT BE ABLE TO TAKE ADVANTAGE OF THIS FEATURE.
- 5) SWITCH SW1 DISABLES 8K, SO MODULES WITH ROM (OR MINI-MEM) WILL STILL FUNCTION.
- 6) LINES RUNNING STRAIGHT THROUGH THE 6264'S ARE CONNECTED TO THE SAME PINS ON ALL CHIPS. (MAY BE PIN 22)

PLEASE BE CAREFUL ASSEMBLING!  
 SEE TEXT ON OTHER SIDE.

EXPANSION BOX 32K WITH 8K MODULE RAM

EDITORS NOTE:

IN AN EFFORT TO CONTINUE PRESENTING THE READERS OF THE WEST PENN 99'ERS WITH A WIDE VARIETY OF HARDWARE ARTICLES, I'VE INCLUDED A VERY GOOD ARTICLE BY JOE SPIEGEL PAST PRESIDENT AND HARDWARE ENTHUSIAST OF THE "AIRPORT AREA COMPUTER CLUB". HE HAS TAKEN THE IDEA OF DO-IT-YOURSELF MEMORIES A STEP BEYOND ANY I'VE SHOWN HERE IN THESE PAGE, ANSWERING THE DESIRES OF SEVERAL, WHO HAVE ASKED ME IF THEY COULD BUILD THEIR OWN 32K MEMORY CARD FOR THE EXPANSION BOX.

WELL HERE YOU ARE, AND HE HAS GIVEN YOU A LOT MORE:

- \* 8K OF MEMORY THAT IS ACCESSABLE BY E/A USERS.( W/BATTERY SUPPORT)
- \* 32K OF MEMORY THAT CAN ALSO BE BATTERY SUPPORTED IF YOU FIGURE OUT HOW THIS CAN BE USED.
- \* AN INTERFACE BOARD FOR THE PEB THAT COULD ALSO HAVE SUCH FEATURES AS A CLOCK, A SPEECH SYNTHESIZER, ETC, ADDED IF YOU ALLOW ENOUGH ROOM WHEN YOU ASSEMBLE THIS INITIAL PROJECT.

I'M REALLY PLEASED TO HAVE ANOTHER HARDWARE HACKER SO CLOSE TO HELP TO CONTRIBUTE TO THIS AREA OF THE T.I. COMMUNITY SUPPORT.

\*\*\*\*\* JOHN F. WILLFORTH (412) 527-6656, WP99'ERS \*\*\*\*\*

- \* I RECOMMEND HIGHLY THAT YOU REMOVE ANY "UNNEEDED BOARDS" FROM YOUR PEB, BEFORE YOU PLUG ANY OTHER BOARD OF UNKNOWN CAPABILITIES INTO AN OTHERWISE USEABLE PEB! THIS REQUEST SHOULD ALSO INCLUDE THE DISK CONT. CARD. I WOULD ALSO LIKE TO STATE FOR ALL WHO ATTEMPT THIS PROJECT, THAT YOU DO SO AT YOUR OWN RISK, NOT AND I REPEAT, "NOT" AT THE RESPONSIBILITY OF EITHER JOE, MYSELF, OR EITHER USER'S GROUP OR ANY REPRESENTATIVE THEIR-OF, AND THERE-UNDER, OR WHITHER-TO-FORE!

\*\*\*\*\*

32K+ for the PEB: Most people with Peripheral Expansion boxes already have a 32K card, or one of the large memory cards by FOUNDATION. MYARC. or CORCOMP. For those people, like myself, that like to play with electronics and either don't have a 32K card, or want to get rid of the power hungry DRAM, here is a project for you. I got the idea for the card from an article in the R/D Computing Newsletter by Ryte Data of Canada. The project described in the newsletter was only the 8K portion of the card I built. I thought that it was a waste of a slot to only include 8K, so I added some more memory and some extra buffer chips and created the card I am describing. I would like to point out to anyone that read the Ryte Data newsletter. The 74LS368 chip is not correctly wired in their article, thus the 8K card they describe will not work properly. The circuit diagram of my card that is included in this newsletter shows the correct wiring for that chip. I called it the 32K+ card because it not only contains 32K of Static RAM, but also has an additional 8K in the module ROM/RAM area that makes it into a "Supercart" type accessory. Thus you can have all the benefit of a Supercart without modifying your E/A module. In fact, with a CorComp controller card (or possibly the MYARC disk manager), you can load the module space without the E/A module if you have a program that can stand alone. The 8K portion is battery backed so that if you load a program like the Supercart menu that I discussed a couple of months ago, the program will remain even after the PEB is turned off. There is a switch that is wired into the card to allow the 8K to be disabled while using other modules that have ROM or RAM in them. Even with the 8K disabled, the memory is still retained. The total cost of the card is about \$40.00. I realize that a used 32K card can be found for less money, but it uses DRAM which consumes much more power and does not contain the extra 8K. A version of this card could be built into the console or Speech Synthesizer for about \$25.00, but there is then the disadvantage of your system not being interchangeable with other peoples' systems. The internal modifications also cause problems if the console has to be repaired; you have to remove any modifications before sending it out. I can supply you sources and prices for the parts required.

Joe Spiegel



**CALL KEY** by George F. Steffen

Several months ago, Jim Peterson of Tiguerclub raised a question concerning the CALL KEY subprogram. He questioned the TI Manual's explanation of the status variable, saying that the only time he could cause it to reach a value of -1 was by holding down the key. I wrote an explanation and sent it to him, but his further comments lead me to believe that he did not completely understand my explanation. If he can not understand this, most programmers probably do not, so I will attempt a full explanation.

First, the reason for the status variable. After all, in basic programs, it is used mainly to tell when a key has been pressed. This could have been included in the CALL KEY subprogram itself, or the programmer can tell when a key has not been pressed by the key variable having a value of -1. There must be some other good reason for adding a variable. There is and it has to do with debounce and repeat key.

We tend to think that an electrical switch, when closed, makes a contact which stays that way until we turn it off. It may appear that way to our slow senses, but the contacts will actually hit, bounce open and close again. When we hit a key, some provision must be made to keep the computer from putting the character on the screen more than once. This is taken care of partially in the construction of the keys where there are two separate contacts so that one could close before the other and then the second would close as the first opens. This helps, but, in the immediate mode, when the computer has nothing else to do, it would still show two separate key pushes if it were not slowed down by software. For a brief period after an initial key push, an open switch followed by a repeat of the previous key is ignored. If a different key is pressed, the computer will treat it as a new key and will show it. Have you ever missed the key you were attempting to press and hit two keys at once? You may have seen one character appear, then the second, and the first again. This is because the one key made contact slightly ahead of the first, it bounced open just as the second key made contact, and the the second key bounced open as the first closed again. After that, since the first key remained closed, the computer stopped putting the characters on the screen.

If you keep the key down, the computer will eventually start repeating the character. You may think that the computer is working full speed in displaying these characters, but, if it had not been slowed down, it could fill the whole screen before you could let go of the key.

As I stated earlier, when in the immediate mode, the computer has nothing to do but scan for key presses. Also, the normal use of CALL KEY in BASIC does the same thing. However, this is not necessarily always true. In Extended Basic, when LISTing a program to screen for instance, the computer executes the scan one time after each line. If it detects a new key, it stops the LIST. When the scan is stopped, it keeps looking and again, when it detects a new key, it starts the LIST again. If it did not have the status variable to tell it the same key was still down, it would keep stopping and starting the LIST. Have you ever restarted a list and then hit the same key again to stop or even tried to use the CLEAR key to get out of LIST? The first key push will restart the LIST, but then the computer ignores you even though you may release and repush the key. What has happened is that you released and repushed the key while the computer was LISTing a line. By the time the computer has finished the line and gone to scan, you have pushed the key again so that this is the same key that was pushed during the previous execution of the scan.

When the computer finds a new key pressed, it continues its scan, checking for SHIFT, CONTROL, FUNCTION, or ALPHA LOCK. If it finds the same key pressed, it does not recheck those. Therefore, if you press or release one of those keys while a character is repeating on the screen, it will have no effect: the same character will continue repeating.

For those of you who are interested in exactly how this works, I recommend you get Millers Graphics Explorer and watch the keyboard scan in action.



**SO YOU THINK YOU WANT THE TI/IBM CLONE!!!**  
By Deanna Sheridan - NorthCoast 99ers

Elsewhere you will see the announcement by Millers Graphics of the so-called upgrade for the TI to use IBM programs. As I read the announcement, it is "not" an upgrade for your TI. Rather it is an IBM clone on which you can use your TI keyboard. A true TI upgrade would be one that would give you an economical way to add the 32K needed for most programs, an RS232 and disk system. If you do not now have these items, the TI/IBM will NOT let you run TI disk-based software. It gives you no more use of your TI than you had before. Instead you will find that you have an IBM with a TI keyboard for all practical purposes.

With the price of the clones dropping almost daily, you might as well have two complete systems and have the use for an IBM style keyboard for your IBM. I was personally very disappointed by this announcement as I cannot see how it is going to help keep our TI alive. Instead you will see the demand for TI software decrease (which can only hurt) and that for IBM type software increase.

If you do go the clone route, you may be quite surprised to find that it is even dumber than your TI. After being used to having my TI fire up with a nice welcome screen, all ready for me to type in a program or load some software, it was a real shock to turn on my Epson compatible and find that there was nothing but a black screen with a little C) at the bottom. I had a hard disk so that my DOS (Disk Operating System) had already booted. On a floppy-based system, you have to insert your DOS diskette each time you boot before you can do ANYTHING. Commercial diskette based programs will boot without DOS if they include the Command.com file. Otherwise you have to run DOS BEFORE you do anything else. Some DOS commands are resident and others are not, so you will find yourself constantly reinserting the DOS diskette as programs require certain commands.

DOS is a whole new set of commands and utilities which you will have to master. After getting over the shock that I was stuck with the black and white screen (at least for awhile), I went out and spent \$40 on books to tell me how to use DOS and write my own colorful screen menu program. You will have to learn about "Batch" files, directories and many other things that are taken care of automatically for you with the TI.

Want to run a Basic program? Get out the BASIC diskette and load Basic before you run the program. Again, better get used to the black and white screen until you learn a few tricks. Getting color in basic was fairly easy as I wrote a small program with the screen colors I wanted and when I load Basic I load this program. But, if I run a basic program, the colors aren't permanent and if I want to do some programming, I have to redo my screen.

What kind of software do you think you want to run on this fancy machine. Remember, you are used to paying \$10 to \$40 for some excellent games, utilities, etc. for the TI. I have 3 word processing programs for the compatible and if TI-Writer would support 80 columns and have decimal

tabs (I do a lot of statistical typing), it would be my number 1 choice. It is versatile and easy and the transliterate command lets you do almost anything you want. I spent hours trying to get my other 3 to do something TI-Writer does without a hitch the other day, and none would. My word processing programs are the one I got with my Leading Edge (I know I said Epson above...long story), PC Write (A fairware program compared to Wordstar) and IBM Writing Assistant. These are probably the types you would be working with since how many of you can afford WordStar or Microsoft Word, etc. I still like TI-Writer best for versatility and ease of use. This is being written on my Leading Edge WP and it does a nice job if you don't want to get fancy with a lot of formatting within your document which I sometimes have to do with special accounting reports and I still revert to the TI-Writer.

I have an excellent general ledger package which would do all of your accounting, but you wouldn't want to spend as much for it as my boss did. Got a great tax package the other day (anyone want their taxes done reasonably?), but again you wouldn't want to have to buy it yourself. Same with spreadsheets. Would you have that much use for them for what they cost? Games? Why spend that kind of money on a computer to play games. The compatible does nothing for me on a personal basis that my TI would not do. I have the luxury of additional memory and that is about it.

Of course, one of the first things I did was to join a PC users group. They must be exciting after a TI users group, right? WRONG! It is a different world, you can say that much. How about the library. Must be lots and lots of programs available. They get their library disks from the PC SIG. You pay \$2 per disk. You know you are getting a disk of utilities, or games, or word processing, whatever, but after that you are completely on your own. You have to go in and check out each program to see what it will do and try to find out how to do it. Files are not grouped. It is a real wish wash. They don't have to do any innovative hardware things such as adding 32K inside the machine, replacing cooling fans in PEB boxes, etc., etc. If they have any local programmers in the group, they don't have them featured in their library. They depend exclusively on the PC Sig and seem to have no other sources. The program presentations at the meeting have been varied and for the most part were not things that I could use on a personal basis. However, I have been fortunate enough to run into business situations since that because I was exposed to these programs, I was able to relate and be knowledgeable in conversations with clients, such as security, backup procedures for hard disks, and a database with its own language called "Mapper".

Speaking of hard disks. Now that you have a hard disk that can hold the equivalent of 60 to 90 floppies, you can get rid of all your floppies. Wrong again. Exactly one month after I purchased an Epson, the hard disk failed. Would not boot. I lost EVERYTHING. At least I had backed up the accounting clients I was working on each day, but all else was lost and I had to start over from scratch.

Still want to "upgrade" to another computer?

>>>> A NEW CALL LOAD <<<<

Taken from: Aaron M. West - Boston Computer Society

Has your computer ever locked up while saving an Editor Assembler file? Try to avoid spikes by maybe using a spike suppressor, but if your computer does lock up, type in CALL LOAD(-31860,96,41) in TI BASIC to return to Ed/Assa without reinitializing the memory expansion. You can also use this to rerun a program that you loaded into Ed/Assa. (Note: this will only work with an Ed/Assa Cartridge located at GRDM address >6000. This will not work with a moved Ed/Assa using a GRAM Cracker.)



# AN UNSOLICITED COMMENT ON THE TIMES

Taken from "DALLAS 99  
INTERFACE" Feb. 1987

Knowing that discretion is the better part of valor, the author wishes to remain anonymous (and alive).

A few years back, I knew a good ol' boy who used to enjoy listening to baseball games and weather reports on AM radio. Claimed he could tell if a tornado was on the way, just by the sound of the static. Anyway, everybody told him that FM radio was the hot setup. You know, no static, no problems with sun spots, you could hear Merle in stereo and all sorts of important stuff like that.

Ol' Ray Bob (he was named for two of his uncles, you know) always thought it would be NICE to pick up Merle in stereo, but, it just never seemed real important at the time. At least not until some California sharpy came up with a whole new marketing scheme and aimed it smack at all those happy AM radio listeners.

All you had to do was buy this box that the California feller had made up and another box that was really an FM radio but missing a couple of parts. Then you ran the AM radio's speaker wires and it's antenna through the first box and connected up the second box too. Now, if you flipped all the switches just right, you could listen to the weather forecasts on AM radio just like always (the California guy said that was a real improvement), OR you could listen to anything you wanted on FM radio.

Ray Bob figured he could get completely up to date with all this new radio stuff that everybody told him he needed, and still not have to give up his ballgames or any of his investment in the faithful Silvertone that Daddy had mail-ordered back in '57.

Of course, the real small print in the ad did mention that the FM stereo MIGHT sound a little funny playing half of Merle through the AM radio's tinny speaker. And, it did mention that the FM reception MIGHT be better if you had a real FM antenna instead of tryin' to share the AM antenna. It WAS cheaper than buying a whole new AM-FM stereo radio (well, cheaper than some, I guess), but those more expensive ones did have a couple of features that this special rig didn't. Yeah, they forgot to mention it didn't have AFC or inter-station muting.... sorry.

Anyway, Ray Bob got real discusted with the whole durned thing. Last I heard, he had donated ALL that stuff to the Goodwill and picked himself up a used Hallicrafters 4 band and was listening to hockey games (how low can you get, Ray Bob?) on the Voice of America. I guess it all goes to show you that there's nothin' wrong with AM and there's nothin' wrong with FM. The only thing wrong is with that smart marketing guy who says you're all missing out on something that you GOTTA have and he can fix it so you can have it cheaper and easier. If Ray Bob had wanted the FM stereo that bad, he woulda been better off buying one and not messin' around with them two boxes. Who you gonna listen to, anyway?

Here's one for the kiddies

```

100 REM - DANCING STICKMAN p
    programed by Jim Peterson
110 CALL CLEAR
120 DIM S(26),T(60),NN(60)
130 FOR CH=48 TO 80 STEP 8
140 CALL CHAR(CH,"00002B107C
1028")
150 NEXT CH
160 GOSUB 590
170 FOR SET=3 TO 7
180 CALL COLOR(SET,1,1)
190 NEXT SET
200 DATA " H 000 P"," H
    000 P"," H 0 P"," 00
    0000000"," 8 000 @"," 8
    000 @"
210 DATA " 88 000 @@"," H
    HH000PPP"," H 8 @ P"," H
    8 @ P","HHH 8 @ PPP","
    8 @"," 8 @"," 888
    @@@
220 PRINT " dancing stic
    kman": : : :
230 RESTORE 200
240 FOR J=1 TO 14
250 READ A$
260 PRINT TAB(8);A$
270 NEXT J
280 CALL COLOR(3,16,5)
290 CALL COLOR(4,16,7)
300 CALL COLOR(5,5,16)
310 GOTO 690
320 ON INT(3*RND+1)GOSUB 340
    ,400,460
330 RETURN
340 CALL COLOR(4,1,1)
350 CALL COLOR(6,16,5)
360 GOSUB 560
370 CALL COLOR(6,1,1)
380 CALL COLOR(4,16,7)
390 RETURN
400 CALL COLOR(5,1,1)
410 CALL COLOR(7,16,7)
420 GOSUB 560
430 CALL COLOR(7,1,1)

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440 CALL COLOR(5,7,16)
450 RETURN
460 CALL COLOR(4,1,1)
470 CALL COLOR(5,1,1)
480 CALL COLOR(6,16,5)
490 CALL COLOR(7,16,7)
500 GOSUB 560
510 CALL COLOR(6,1,1)
520 CALL COLOR(7,1,1)
530 CALL COLOR(4,16,7)
540 CALL COLOR(5,5,16)
550 RETURN
560 FOR D=1 TO 30
570 NEXT D
580 RETURN
590 F=262
600 FOR N=1 TO 25
610 S(N)=INT(F*1.059463094^N
    )
620 NEXT N
630 S(26)=40000
640 RESTORE 740
650 FOR J=1 TO 60
660 READ T(J),NN(J)
670 NEXT J
680 RETURN
690 FOR J=1 TO 60
700 CALL SOUND(T(J)*100,S(NN
    (J)),0,S(NN(J))+5,5)
710 GOSUB 320
720 NEXT J
730 GOTO 690
740 DATA 4,8,4,13,4,13,4,15,
    4,17,4,13,4,17,4,15,4,12,4,1
    3,4,13,4,15,4,17,8,13,4,12
750 DATA 4,8,4,13,4,13,4,15,
    4,17,4,18,4,17,4,15,4,13,4,1
    2,4,8,4,10,4,12,8,13,4,13,4,
    26
760 DATA 4,10,4,12,4,10,4,9,
    4,10,4,12,8,13,4,8,4,10,4,8,
    4,6,4,5,4,6,8,8
770 DATA 4,10,4,12,4,10,4,9,
    4,10,4,12,4,13,4,10,4,8,4,13
    ,4,12,4,15,8,13,4,13,4,26

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The Tigercub  
Jim Peterson