

THE FORT'S USER GROUP

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*****
| President           Secretary          |
| D. Bradtmueller-483-0896  Denny Przybyla - 432-1228 |
|                       |                |
| Treasurer           Editor/Publisher  |
| Tony Miller - 456-4765  Pat Murphy   - 485-2623 |
|                       |                |
| Vice-president --- and --- Librarian  |
| Tom Carson - 485-7086   |                |
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January 1988

PRESIDENT'S COMMENTS - BY DAVE BRADTMUELLER

Once again we had a good turn out. It is good to see all of the new people (one year or less) that are showing up. I am a little disappointed in that I am not seeing many of our older members. Are you still alive? Drop in and let us know. If you haven't paid your dues by the next meeting there will be only a few more newsletters. At last count we have had 12 renewals so far.

Nominations for officers were held at the last meeting. The following is a list of the people nominated and the offices. If you would like to nominate anybody else call me before the next meeting.

President	David Bradtmueller
Vice President	
Treasurer	Bud Darr
Secretary	Denny Przybyla

I have asked Pat Murphy to be the Editor and Publisher of this news letter. Also Tom Carson has agreed to take over the library for this coming year. The next meeting will be on January 9, at 9:30 am. The doors open at 9:00 so try to be there as early as possible. See you all there.

RENEW YOUR MEMBERSHIP NOW!

MINUTES

Meeting of December 12, 1987
Submitted by Dennis B. Przybyla, Secretary

President Dave Bradtmueller called the meeting to order at 9:40 am. There were seventeen people in attendance including fifteen members. We had no guests. The Secretary's minutes of the November meeting and the Treasurer's report for December were published in the December Newsletter. The formal presentation of these reports at the meeting were omitted but submitted as published. There were no additions or corrections to the reports of the Secretary and Treasurer and the reports were approved as published.

The Editor Assembler cartridge has been purchased, received, and is now a part of the club's computer system. Our stand alone disk drive has yet to be mated with our computer system!

Nomination of officers for 1988 are Dave Bradtmueller for President, Bud Darr for Vice President and Treasurer, and Dennis Przybyla for Secretary. At the January meeting, additional nominations for the officer positions will be accepted. The election of officers will take place at the January meeting.

Your 1988 renewal membership dues will be due on or prior to the January meeting.

Tom Carson is our new Librarian!

Prior to the general discussion period, a demonstration was given by Pat Murphy on his newly acquired program CERTIFICATE 99. A sample certificate produced by this program appeared in our December Newsletter. Pat commented that the program is slow but a good product that produces what the author said it would.

Many good questions were asked during our discussion period. Hopefully the answers given were satisfactory to those of you who raised the questions. This is the purpose of our User Group, to have answers for the questions raised. So, as you encounter difficulties working with TI-Writer, Multiplan, or any other software programs, write down your questions and present them to the group at the next meeting. Also, if an answer is needed now, you might consider a phone call to a member whom might be of an assistance to you. The same would hold true for any questions that you might have regarding hardware.

The door prize winner at this meeting was Bud Darr. He received two diskettes. Our 1987 membership ended up with thirty active and one subscribing member.

The next meeting will be held on Saturday morning, January 9, at the Shawnee Branch Library. The meeting start time will be at 9:30, with the doors opening at 9:00 am.

RENEW YOUR MEMBERSHIP NOW!

Membership/Treasury
by Anthony Miller

The last meeting showed a good sign of things to come in the next year. The Group had ten members renew therefore, this brings the total up to 13 for 1988. I'm sure at the January meeting we will come close to this. So, SIGN UP.

We will be having the election of officers at the January meeting. The slate is full, and it is time for all (and I repeat all) active members to show up and vote. In the past, we had problems of not enough members showing up. All this created was a post ponement of the election. For those of you who like to come and here the good stuff about the TI, and not legal formalities, now is the time for you to make sure elections last only one meeting. SHOW UP AND VOTE...

Now on to the treasury report for the month of December:

	DEBITS	
OLD BALANCE.....		\$262.20
STAMPS.....		\$ 19.80

BALANCE.....		\$242.40
	CREDITS	
INTEREST (11/30/87).....		\$ 1.31
MEMBERSHIP (10 EACH).....		\$150.00

NEW BALANCE.....		\$393.71

RENEW YOUR MEMBERSHIP NOW!

>>>EDITOR'S NOTES<<<
by P. Murphy

HAPPY NEW YEAR

The first article comes from TIGERCUB Software in Columbus, Ohio. The TIGERCUB has just the best of things to sell you. This article is just one of the many interesting things from the TIGERCUB. If anyone is interested in the very useful items from them...contact TIGERCUB SOFTWARE, 156 Collingwood Ave., Columbus, OH 43213. Now, here is the article...very good...thank Jim Peterson!

PROGRAMMING MUSIC ON THE TI
by Jim Peterson

You don't need to know very much about programming in order to program music on the TI-99/4A - but it is almost essential that you know how to read sheet music. You don't really have to be able to play any instrument, or to know anything more about music, but it does help - the sheet music will probably have several notes for each chord, and a knowledge of music will help you to decide which three of those to use.

Music is programmed using the CALL SOUND subprogram. Each CALL must have a duration and at least one frequency with a volume.

The duration is measured in milliseconds (thousandths of a second) and can be from 1 to 4250. The User's Reference Guide admits that the actual duration obtained may be off by as much as 1/60 of a second. Actually, any duration between 1 and 50 will be of the same length, and thereafter the actual duration increases in steps of about 8. This really causes no problems, because it is best to assign the desired duration of the shortest note to a variable, and then multiply that variable for longer durations. This also makes it very easy to change the tempo of the music.

When a CALL SOUND is executed, the frequencies will continue to play for the specified duration while the computer continues to execute the next statement. Thus, animated graphics can be combined with music, providing that the graphics commands can be executed before the end of the duration.

However, if the duration is given a negative value, between -1 and -4250, the CALL SOUND will be stopped and replaced by the next CALL SOUND. Thus, a CALL SOUND with a negative duration, placed within a loop, will sound continuously until the loop ends.

The frequency is given in Hertz, which is one cycle per second, and can be from 110, which is A below middle C, to a high of 44733 which is far above the range of hearing of most humans. However, the Reference Guide admits that the actual frequency may vary by as much as ten per cent. In fact, the deviation can be much greater than that, because any frequency from 31953 to 43733 ends up as exactly 37287! However, the frequencies within the audible range of music are close enough.

Each frequency must be given a volume, which can be from 0 (loudest) to 30 (inaudible). Actually, there are only 15 volume levels, because the odd numbers have the same volume as the preceding even number.

The CALL SOUND may optionally contain one to three frequencies, each with its own volume, and may also optionally contain a "noise", also with a volume. The "noise" may be a negative number from -1 to -8; of these, -1 to -4 are called "periodic noise" and -5 to -8 are called "white noise". The User's Reference Guide mentions that the -4 and -8 noises vary with the frequency of the third tone specified - that is the only clue we were given that bass notes are possible.

To create a bass note, the CALL SOUND must contain three frequencies and a -4 noise. The first two frequencies may be musical notes, or frequencies above audible range if only the bass is wanted, and the volume may be audible or inaudible. The third frequency will be sounded in the -4 noise, and will be two octaves and a 7th below its actual frequency - therefore the 3rd frequency is given an inaudible volume of 30 unless the actual frequency can be used in a 7th chord.

The easiest way to program bass notes is to multiply the frequency by 3.75 in the 3rd voice. This will lower it by two octaves.

The formula to create a musical scale of 4 octaves, starting with frequency F, is `DIM N(48):: F=110 :: FOR J=1 TO 48 :: N(J)=INT(F*1.059463094 (J-1)):: NEXT J`

Once this has been executed, music can be programmed using the array subscripts, such as `CALL SOUND(100,N(1),0,N(5),0)`

However, most music programmers prefer to assign the frequency values to mnemonic variables, such as `A1=110` for A of 1st octave, `C2S=277` for C sharp of 2nd octave, etc. Music is then programmed by `CALL SOUND(100,A2S,0)` etc.

An even better method, perhaps, is to set up the array, as above, and then assign its values to mnemonic variables, such as `A1=N(1)`. This makes it possible to change the key of a composition by simply changing the value of F.

Most musical compositions consist at least partly of repetitive phrases. The first thing to do when programming from sheet music is to go through the score and mark each series, of more than a few notes, which is repeated at least once within the score. Then, program each of these phrases as a `60SUB`.

The simplest method of music programming consists of nothing but a long list of CALL SOUNDS. This permits very fast music to be played, but it is tedious to program and takes up much memory.

Another method sometimes used is to place all the notes in DATA statements and then use a loop to READ them and play them in a single CALL SOUND, such as `FOR J=1 TO 800 :: READ A,B,C,D:: CALL SOUND(A,B,0,C,0,D,0):: NEXT J`

This method has limitations of speed, because DATA is read rather slowly, and is difficult to debug.

Some programmers get around the speed limitation by reading all the notes into an array, either from DATA statements or from a separate disk file, and then play them in a loop - `FOR J=1 TO 1000 STEP 4 :: CALL SOUND(A(J),A(J+1),0,A(J+2),0,A(J+3),0):: NEXT J`

This method can take as much as three minutes to initialize before the music begins, and is very difficult to debug.

The best method of all, first used by Sam Moore, Jr., and refined by Bill Knecht and others, uses the mnemonic variables, and `60SUBs` to a single CALL SOUND (or to one of 4 CALL SOUNDS, to play 1 to 4 notes), with the variables in the CALL SOUND being redefined from the mnemonic variables before each `60SUB`. Since the `60SUB` is executed very rapidly, there is no limitation on speed, and the variables need be specified only when they change. For instance, the `60SUB` might be `1000 CALL SOUND(D*T,N1,V1,N2,V2,N3,V3) :: RETURN`, with D having been predefined as the basic shortest duration. Then, a program line might read `100 T=1 :: V1,V2,V3=0 :: N1=C3 :: N2=E2 :: N3=E1 :: 60SUB 1000 :: N2=E2 :: N3=E1 :: 60SUB 1000 :: N2=C2 :: N3=E1 :: 60SUB 1000 ...etc.` to play a continuous melody note with a pattern of accompaniment notes.

As a variation of the above, the `60SUB` may be to a loop which plays the chord with a negative duration and a decreasing volume, as `FOR V=0 TO 30 STEP 5 :: CALL SOUND(-99, N1,V,N2,V,N3,V):: NEXT V :: RETURN` This gives the "decay", or fading volume, which is typical of piano music or other music where a string is struck or plucked. The slowness of loop execution places some limitations on the use of this technique in Extended Basic programming, but it has great potential in assembly, FORTH, or compiled Basic.

Many other effects are possible. Alternating two CALL SOUNDS in a loop, with the frequency in the second being a multiple of 1.01 to 1.03 times the first, gives a tremolo effect - `FOR J=1 TO T :: CALL SOUND(-99,N1,V1):: CALL SOUND(-99,N1*1.03,V1):: NEXT J`

Alternating the volume rather than the frequency, or both, can give other tremolo effects.

Two notes in one CALL SOUND, with the second being multiplied by about 1.03 over the first, gives a richer sound - `CALL SOUND(100,N1,V1,N1*1.03,V1)`.

Extending the -4 note into the melody range gives a reedy effect - `CALL SOUND(100,N1,V1,N2,V2,N3*3.75, 30,-4,V3)`.

TI music tends to have too strong a pulse, because the notes start and stop so abruptly. Therefore, it is better to play the preceding note through a rest, perhaps at a decreased volume, and the last note of a piece should always be faded out through a loop of decreasing volume.

***** PROGRAM REVIEW *****
by PATRICK MURPHY

EZ-KEYS
from ASGARD SOFTWARE

I personally have limited use of this program, but I will try to give a brief run down of the power of this fine program! This program does two jobs! It is a programming tool and a productivity tool. I aquired this fine program from the Chicago TI Faire via Dave Bradtmueller. Dave bought it for me from Asgard Software, P. O. Box 10306, Rockville, MD 20850, for \$14.95. This is a real value, considering what it does.

How many times have you been typing in an Extended Basic program (or Basic program) and have the ole' TI lock up on you? Well, this program will save the program you are typing in every 1 to 18 minutes!! Isn't that ingenious?! I have personally lost many typed in program lines to the machine locking up, and wishing I had saved earlier! This will do it for you automatically! I repeat, I am limited to my use of this program, but it appears it will take some time to understand the potential of it all.

23 lines can be entered for each program line!

Lower case character set is available!

All numbers and symbols are high lighted for super ease of debugging!

Cursor can be moved up and down within a program line!

Automatically save program - every 1 to 18 minutes!

Macros can be created to delete a range of lines, move & copy lines at a single key stroke!

Redefining of keys can be controlled from within a program or while programming!

Macros can be created within other macros to put often used info in one keystroke!!

668 characters can be set up for mundane data entry tasks...that is function and control keys, the arrow and ENTER keys!!

This program requires Extended Basic, 32K, one disk drive and your basic console!

At the end of this newsletter is a re-typed publication of the keystrokes needed for TI Artist... a reference sheet. Taken originally from the Dallas User Group.

Included at the end of this newsletter is a copy of how to put 64K RAM on board the TI-99/4A. Computer Shopper provides copies of interesting articles from other TI user group newsletters. This an example of what they will provide for 22 cents!!!

This is also a request for **SOMEONE** to take over the newsletter in the next three to four months! If I dont't have a taker, **YOU** will be without a newsletter! I expect someone who can keep up the caliber of this newsletter, or do not take the job!!!

Thank for all the help I have received from the officers and their articles. Thank!!

RENEW YOUR MEMBERSHIP NOW!

!! LIBRARY NEWS !!
to return next month!

RENEW YOUR MEMBERSHIP NOW!

W.I.S.H. LIST

- WISH GAC0686...A terminal emulator program that would transfer a complete disk rather than one file at a time.
- WISH TM0686...Would like a ribbon cable connector (female) for a 36 pin .100" card edge connector.
- WISH GAC0786...A program that would download different fonts to a dot matrix printer i.e., script, gothic, roman, etc.
- WISH JY0886...A program that converts CALL LOAD statements into assembly language source code.
- WISH BCD0986..Would like a used expanded system (RS232 Optional), at least one disk drive and 32K memory expansion.
- WISH GCC1286..Would like a cassette cable and educational programs or modules (primary level).

- ANSWER GAC0686...Use FREeware program "MASS TRANSFER" available from Stuart Olson, 25322 W. Wayside Place, Lake Villa, IL 60046. Program now in user group library.
- ANSWER TM0686...Connectors you want are available from PILGRIM'S PRIDE, 5 Williams Lane, Hatboro, PA 19040
- ANSWER JY0886...The program to convert CALL LOAD to ASM. LANGUAGE source or object code has been written by Tom Freeman of LA99ers and is in our library.
- ANSWER GAC0886...Program called OLDENG prints any TI-WRITER file in old english letters - also Character Sets and Graphics Design III provides 6 full character sets - can be purchased from TEXAMENTS.

ARTIST FUNCTIONS

SYMBOL	FUNCTION	TYPE	USE OF ENTER/FIRE	COMMENTS
D	Draw	cmd	start/stop	hold fire down
P	Point	cmd	place	
L	Line	cmd	begin/end	
K	K-line	cmd	begin/intermediate	D to exit
R	Rays	cmd	center/start/stop	D to exit
F	Fill	cmd	do	space to abort
V	Frame	cmd	1st. corner, opp. corner	
X	Box	cmd	1st corner, opp. corner	fills w/ pattern
O	Circle	cmd	center/edge	
Q	Disk	cmd	center/edge	fills w/pattern
CTRL-A	Clear Image	cmd		leaves color, pattern
H	Hor/Vert	cmd	begin/end	
N	Swap	cmd	new color/old color	
I	Invert	mode		negative image
E	Alpha/Numeric	cmd	begin loer left/stop	does not use fonts use CTRL x for width FCTN x for height
CTRL-B	Clear Color	cmd		leaves pattern
S	Store	menu		load/save/index picture
Z	Zoom	mode	select window	move with cursor cads
M	Mirror	mode		4 reflections
C	Hard Copy	menu		
FCTN-	Plot/Erase	mode		
FCTN-	Foregnd Color	cmd	change to next color	
FCTN-;	Corsor Speed	mode		fast/slow toggle switch
F icon	Foreground			color chosen will be foreground or backgrnd
P icon	Background			only P is solid
- icon	Pattern in use	mode	display next pattern	use P to clean up color borders
	Color Cursor	mode		

ENHANCEMENT FUNCTIONS

M	Move w/o color	top left/bottom right/place	T to check
M	Move w/color	top left/bottom right/place	T to check
C	Copy w/o color	top left/bottom right/place	T to check
D	Copy w/color	top left/bottom right/place	T to check
A	Alpha Numeric	menu enter/place text	SPACE to exit T to check
	Use a Slide	select place	SPACE to exit
S	Slides	menu	
	Define	pick box/define slide	SPACE to exit
	Erase	pick slide	SPACE to exit
	Rotate	pick slide	SPACE to exit
	Load Slide file		_S added to filename
	Save Slide file		_S added to filename
	Load Inatsance	enter name/place instance	T to check
	Save Instance	enter name/select top lft	I added to filename _I added to fulename
		bottom right	

keyboard cursor movement:
Horizontal/vertical--S/E/D/X
Diagonal--W/R/C/Z

Reprinted from the Dallas User Group!

How To Add 64K And Big Speed Increase

By - John Clulow

Based upon ideas from Mike Ballmann

The following is a step-by-step description of how to add 64K of RAM memory on the 16 bit bus. The present modification uses only 32K. This corresponds to the memory space of the 32K Memory Expansion. The modification yields a speed increase of about 50%.

Mike Ballmann is currently working on a circuit to allow CRU decoding of the remaining 32K. This will open up a whole new area of software, including such possibilities as a real DOS which could be loaded into RAM from disk on power-up. The 32K modification described below can easily be modified for full decoding upon completion of Mike's work.

You will need two Hitachi HM62256LP-12 RAMs. One source of these is Microprocessor Unlimited. They cost around \$12. You'll also need a 74LS21 and a 74LS153. These can be obtained from various electronics supply houses. All wiring should be done with wire-wrap wire. You should use a low wattage soldering pencil with a fine, pencil type tip.

The modification is done on the main board of the Black Silver console, and you'll need to refer to the Logic Board Component Location Diagram in the TI-99/4A Console Technical Data book.

- 1) Remove the board from the console, and identify the two ROMs. They are located between the GROM connector and the 9900 IC. One is parallel to the 9900 and the other is perpendicular to it. They are U610 and U611 on the Component Location Diagram.
- 2) Bend the pins on the HM62256 IC's closer so they will firmly contact the ROM pins when piggy-backed. One way of doing this is to place the RAM on it's side on a table and then move the body of the IC toward the table to bend the pins uniformly.
- 3) Bend out the following pins on both HM62256 RAMs: 1 2 20 22 23 26 27 28. These pins will NOT be soldered to anything on the ROMs. Holding the IC with the notch up and looking at the top, pin numbers start with pin 1 on the upper left, go down the left side, then across and up the right side. Pin 28 is opposite pin 1 on the end with the notch.
- 4) Place one HM62256 over the ROM that is parallel to the 9900. Make sure the notch points toward the 9900 and that the writing on the 9900 and the 62256 can be read from the same direction. Place the RAM such that pins 1 2 27 and 28 extend beyond the end of the ROM. The un-notched end of the RAM should line up with the un-notched end of the ROM. There should be a sort of "spring tension" that clamps the RAM pins onto corresponding ROM pins below it. This will help to insure good solder joints. If the RAM doesn't fit tightly, remove it and bend the pins closer.
- 5) Solder all RAM pins not bent out to the ROM pins below. Use a low wattage pencil with a fine, pencil type tip. Inspect each solder joint carefully in good light, under magnification.
- 6) Place the second 62256 on the ROM that is perpendicular to the 9900. The notch on the RAM points away from the 9900 and toward the edge of the board. As above, solder and inspect all pins that were not bent out.
- 7) Bend out the 74LS21 pins 1 2 4 5 6 8 10 12 14. Note that pins 1 and 14 are across from each other on this 14 pin IC.
- 8) The 74LS21 will be piggy-backed on the 74LS138 U504. This IC is located adjacent to the end of the board where the edge connector is. There are two 138's next to each other. U504 is the one nearest the end of the board. You will place the 74LS21 so that the UN-NOTCHED end lines up with the un-notched end of the 138 (pointing toward the cassette connector). Pins 1 and 16 of the 138 will extend beyond the notched end of the 74LS21.

Continued on the next page

More On The Memory Up-grade

CONTINUED FROM THE PRECEDING PAGE

9) Before positioning the 74LS21, solder 1/2" lengths of wire-wrap wire to the 138 pins 7 and 9. Then position the 74LS21 on top of the 138 and solder all pins not bent out to the 138 pins below and inspect the connections.

10) Bend out all of the 74LS153 pins EXCEPT 8 and 16.

11) Place the 153 over U613, a 74LS194. The notch will line up with the 194 notch and point toward the edge of the board away from the 9900. Solder pins 8 and 16 of the 153 to pins 8 and 16 of the 194 below.

12) At the end of the 9900 opposite to where the RAM's have been piggy-backed, you will see a line of three ICs. They are a 74LS00, 74LS32, and 74LS04. The 74LS00 is U606 and the 74LS32 is U605. Turn the board upside down so you can see the traces. Find the trace that runs from pin 11 of the 74LS00 (U606) to pin 13 of the 74LS32 (U605). Double check to make sure you're doing the pin numbering correctly. When you've found the trace, cut it with a knife so there is no continuity between the LS00 pin 11 and the LS32 pin 13.

13) Identify the piggy-backed RAM that is perpendicular to the 9900. Solder wire wrap wires connecting every bent out pin on this RAM to the corresponding bent out pin on the RAM that is parallel to the 9900. Pin 1 to pin 1, pin 2 to pin 2, etc. There will be eight wires in all to solder.

14) Solder wire-wrap wires to make the following connections on the RAM that is parallel to the 9900. Pin 1 goes to pin 24 of the 9900 (solder the wire to the 9900 pin on top of the board). Pin 2 goes to the 9900 pin 22. Pin 20 goes to two places. Connect pin 20 of the RAM to pin 22 of the RAM and also to pin 8 (bent out) of the 74LS21. There should be three wires coming off pin 20 of the RAM. Pin 23 of the RAM goes to pin 21 of the 9900. Pin 26 of the RAM goes to 23 of the 9900. Pin 27 of the RAM goes to pin 61 of the 9900 (fourth from the top on the right side). Finally, connect pin 28 of the RAM to pin 20 of the 74LS244 adjacent to the piggy-backed 74LS21.

15) Connect the following 74LS21 pins with a bare wire: 1 2 4 and 14. Connect the short wire from the 138 pin 7 to the LS21 pin 5 (bent out). Connect LS21 pin 6 to LS21 pin 12. Connect LS21 pin 8 (bent out) to the piggy-backed 153 pin 2. Connect the short wire coming from the 138 pin 9 to LS21 pin 10. Finally, connect the 74LS21 pin 14 to the 74LS244 pin 20 that you connected the RAM pin 28 to.

16) OK, we're almost done, so take a break and have a beer.

17) On the 153, connect pin 9 to pin 13 on the 74LS32 (U605). Pin 10 of the 153 goes to pin 14 of the 74LS74 next to it (U607). Also connect pin 10 of the 153 to pins 11 and 13 of the 153. Connect pin 12 of the 153 to pin 15 of the 153, and then connect pin 15 of the 153 to pin 7 of the 74LS00 U612 (next to the 74LS74). Connect pin 14 of the 153 to pin 11 of the 74LS00 U606; that's the one you cut the trace on.

18) That's it! Now have another beer before putting your computer back together. When you try it out, remember that this version isn't compatible with other 32K in the system.

If you have problems with this I can't promise I can help but feel free to give me a call or write EMAIL (419) 874-8838. Ask for John (or Hose-Head.)

A kit for this project can be ordered from

Bud Mills Services, 166 Dartmouth Dr. Toledo, Ohio

43614 Tel. 419-385-5946 Price is 27.00

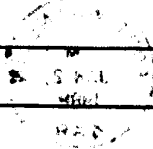
CREDIT: NORTHWEST OHIO SSER NEWS, JULY, 1987

CUT OFF AND RETURN TO PAT MURPHY AT THE NEXT MEETING

Wish I Sure Had...

W.I.S.H. (print or type please)

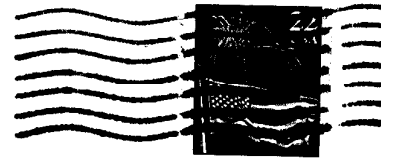
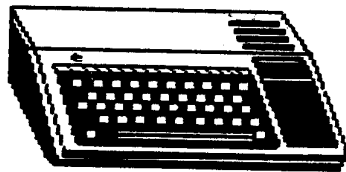
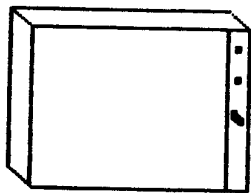
Answer to WISH # _____ (# = name and date rec'd...i.e.,GAC0586)



NAME And DATE

<input type="checkbox"/> \$15.00 Renewal	NAME: _____
<input type="checkbox"/> \$15.00 New member	ADDRESS: _____
<input type="checkbox"/> \$ 7.50 Subscribing Membership	CITY: _____ STATE: _____
OFFICE USE	PHONE: (____) _____ - _____ ZIP CODE: _____
<input type="checkbox"/> REC. <input type="checkbox"/> UNUM	INTERESTS: _____
<input type="checkbox"/> PAY <input type="checkbox"/> DATE	

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