

CLEVELAND AREA TI-994/A USER GROUPS NEWSLETTER

JUNE, 1989

OFFICERS	NORTHCOAST	TI-CHIPS	MEETING DATES
PRESIDENT	ERNIE MALNAR 289-7742	MATT ANDEL 676-9759	NORTHCOAST 1:30 P.M. TI-CHIPS 10 A.M.
V. PRESIDENT	MARTY SMOLEY 1-257-1661	GLENN BERNASEK 238-6335	EUCLIDIAN ROOM N.ROYALTON LIBRARY
TREASURER	FRANK JENKINS 283-8526	LIN SHAW 235-3912	EUCLID SQUARE MALL STATE RD & RT 82
MEMBERSHIP	CHUCK POULIN 731-6475 361 E. 280TH ST. EUCLID, OH 44132	JOHN PARKEN 331-2830 4172 W. 217TH ST. FAIRVIEW PARK, OH 44126	THIRD SATURDAY THIRD SATURDAY
SECRETARY	CHUCK POULIN 731-6475	MARY PHILLIPS 582-5009	JUNE 17, 1989
LIBRARY(DISK)	MARTIN SMOLEY 1-257-1661	HARRY HOFFMAN 631-2354	JULY 15, 1989
TAPE & MODS)	TOM NELLIS 475-4067	JOHN PARKEN 331-2830	AUGUST 19, 1989
HARD COPY)	DICK ALDEN 1-352-9172		SEPTEMBER 16, 1989
			OCTOBER 14, 1989

I think that everyone will agree that going to Lima was profitable, fun and informing for all who attended. See Glenn's report inside. We were able to clear \$110 from the software we were selling for Rodger Merritt which has been split evenly between the two clubs.

We received JIFFY CARD, an updated JIFFY FLYER and Giant Artist Posts (GAP) in time to take to Lima. Had hoped for some space for reviews, but our prolific writers have completely filled up the newsletter and then some! In summary, JIFFY CARD is a "What you see, what you get" card printing program which runs with the same commands as JIFFY FLYER which was reviewed earlier. Several enhancements have been made which make both FLYER and CARD more versatile. You have more choices to place LARGE fonts, pictures (CSGD) can be placed anywhere on the screen and can even be overlapped for an interesting effect. They print quickly and cards or flyers can be prepared and printed in only a few minutes. GAP prints TI Artist instances in sizes from 4X to 24X the original size for some interesting posters. With a line-up feature, there is a minimum of cutting and pasting the pages together. Remember, both CHIPS and NorthCoast continue to have these programs for sale. We have FORMSHOP (\$15), JIFFY CARD (\$15), JIFFY FLYER (\$10), GAP (\$15) and PICTURE_IT (\$10). Watch for some detailed reviews in the next newsletter.

Asgard had for the first time a new program called PAGE PRO99, another "What you see, what you get" graphic printing program. You can load TI-Artist instances (converted to a special format) and intersperse them with text (up to 28 pictures can be placed on one screen). You can have two fonts in memory, one a two-character high font and a one-character high font. This program looks very promising and hope to run it through its paces for a review for next month. It sells for \$24.95.

PRESS was NOT available at Lima and probably will not be for several more months. Chris Bobbitt assured us that it will be worth waiting for and was very apologetic by the delay. He said it is the largest program that has ever been written for the TI and compacting the program has been a major project. He also says that since November when it was supposed to have been released, some 52 new features have been added. He was very enthusiastic about continuing to release new programs as long as we continue to "buy".

Didn't anyone notice that last month I left out the name, address and telephone number of the advertiser in "Computer Shopper" which had such good buys on drives. The name is The P.C.Outlet, Inc., 2745 Hartland Road, Falls Church, VA 22043, phone 1-800-421-4124.

Next month will be our "double issue" of approximately 28 pages. This will be the July/August issue and will give your newsletter staff a much needed break. If you have any articles you would like to share, this is a good time to do it.

Note: We ran out of space to print one page of Wes' article which shows how the code for the instance looks in HEX.

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EXECUTIVE NOTES - TI-CHIPS

Mary Phillips

It was good to see a few members of the North Coast group at the TI-Chips meeting on May 13. Plans were being finalized for the Lima Conference on May 20. There were several unscheduled demonstrations.

John Parken, our membership chairman, reported the addition of a few out-of-state members. He asked for local members to volunteer as "pen pals" for the long-distance Tiers to keep them informed of Club activities. This would certainly be a more personal communication than the newsletter could be.

Harry Hoffman has taken on the Chips dist library. If members want disks copied, he asked that they call him at least one week before the meeting day. He can take calls between 3 and 9 p.m. There were about six copies of the disk library still available for \$5 each.

Vice President Glenn Bernasek was proud to show off his new TI keyboard which he had constructed from parts of another computer no longer in use. He provided a printed copy of the keyboard matrix. His new keyboard included separate groupings for numbers and function keys.

Harry Hoffman provided a tutorial on the TI-Writer portion of Funnelweb. Many improvements over the original program have been made. Each new version of funnelweb has a few more. The current version is 4.13.

John P. had been working on a multi-module connector on one cable. He did not yet have it operational, but expected he would very soon. The schematics for the project are available.

Instructions were given by Rodney Rhodes for adding additional drives to a TI system. Using an old IBM power supply box and a long cable, he could add two or three drives.

Les Kee presented his latest exercise in programming. This time he had written a regular BASIC program to calculate the square root of numbers. The statements loop so that each answer can be tested for accuracy.

A fascinating video-tape presentation was given by Oscar Prednety. A home-movie and videographer for many years, Oscar put to use a program called "Video Titles II". This program allows the user to add colorful and interesting title screens to home videos. Oscar's video was an excellent demonstration of its usefulness. The software package had originally been purchased from JKH Software, 491 South 31st Street, Arlington, VA 22206-1655.

Enthusiastic reports will be presented at the June meeting of the happenings at the Lima conference. Video tapes were to be made available of the proceedings. We hope everyone can come and hear all about it!

DOT COMMAND TWO-LINER CLARIFICATION

By Glenn Bernasek, TI-CHIPS - Cleveland, Ohio

This is just a short note to clarify an article by me that appeared in the May issue of the Cleveland Area 99/4A User Groups Newsletter titled, "Printer Dot Command Tricks". The two-liners in this article will work ONLY if you

have an AXIOM, DATABIOTICS' or a CORCOMP centronix parallel interface from your TI-99/4A I/O port to your printer. These interfaces support some form of LEFT MARGIN dot command. Whereas, the RS232 - PEB card does not. This is why some of you were unable to obtain the expected results when you ran my two-liners.

Please accept my apologies. Sometimes my intentions exceed my literary abilities.

THE 99/4A CONFERENCE AT LIMA, OHIO

The Lima User Group did it again! They put together another extremely successful multi-user group conference on the Ohio State University campus in Lima, Ohio. How successful was it? Just ask anyone of the 300 some people who either attended or provided vendor services at this multi- (and I do mean MULTI-) user group get-together.

However, you'll notice that the title of this article reads a little differently than you probably expect. The reason for this is that the good people in the Lima User Group DO NOT, for a very good reason, wish this event to be known as the "LIMA CONFERENCE". Both Charles Goode (Librarian and Master of Ceremonies) and Dave Szipp (President of the Lima User Group) stated that they would be happy to let any other user group run a conference in their own area if they so desire. To put it bluntly, don't expect the Lima users to host an event such as this "ad infinitum".

So give it a thought. The door has been opened for the Cleveland area users to, once again, think about 1990. This time it will be with both blessing and assistance from the Lima users. All we have to do is let them know what our intentions are.

Enough of that for now! Let's get on with the report on just what happened at the TI-99/4A multi-users group conference at Lima this last May. For starters, the attendance DID NOT apparently suffer a decline from last year's 300+ attendees. Although the official sign-in sheet recorded 246 registered visitors, at 2:30 that afternoon, many more than that just walked in without signing in. Therefore I "conservatively" estimated the total attendance to be somewhere in excess of 300! This is pretty good for a system who's active membership ranks have been predicted to be in a "tailspin" for the last three years. The TI-99/4A has just about the warmest corpse I've ever heard of!

The organization, once again, was professional to say the least! This year, the Lima people gave the 99'ers twice as many demonstrations to enjoy by having two meeting rooms and staggering the one hour presentations every half hour. This, if it were possible, was a great improvement over last year. The information available to the TI-99/4A users was plentiful.

Sessions put on by our own Marty Smoley (TI BASE TUTORIAL) and Ron Markus (THE DIJIT SYSTEMS AVPC CARD) were well attended and VERY well recieved. Marty grabbed the attention of everyone there with his presentation on the the combined power of the TI-99/4A and the data base software TI BASE. There were very few who walked out, after the session was completed, who didn't have their faith in the 99/4A

re-enforced to some extent. Ron, on the other hand, aptly demonstrated just what is being created in "firmware" for the TI-99/4A in the form of the super fast AVPC card. It's rather astounding to see a 99/4A work as fast as this after all that we have heard about the 'slow poke' TI. Talk about REFRESHING! Thanks to Marty and Ron. You both did us proud!!

There was so much to see and experience at this event, I know that it is nearly impossible to cover everything and everyone, and do them justice. However, I do feel that Irwin Hott, of the C.O.N.W.I., epitomizes the attitude of the loyal TI-99/4A user. Irwin, who (by-the-way) does seem to have a certain visual disability, seems to push the 99/4A to its limits, and then he creates new limits for the TI to reach. Mr. Hott demonstrated, through a highly successful experiment, just how we can change a preset command through the immediate (keyboard) mode. The techniques Irwin showed us were, in a word, astounding! As I asked Mr. Hott, "What do you have in store for us next year?"

I was amazed at the volume of software, firmware and vendor support there was for the TI-99/4A at this event. It was very evident that vendor support for the TI was as strong as, if not stronger than, it has ever been.

Whoever hosts the 1990 TI-99/4A Multi-user Group Conference, it will be one show well worth going to! This reflects well on the talents and the hard work of those who put together this conference. Lima, we all owe you our sincere thanks for a job well done on our behalf.

A REMOTE KEYBOARD FOR MY TI By Glenn Bernasek TI-CHIPS, Cleveland

It has been long time dream of mine to have a remote (detached) keyboard like the big boys. My big chance came when a scrap Televideo keyboard was made available. This keyboard had just about everything I would want for my remote unit. However, for the longest time, this keyboard sat in my office imitating a paperweight. I just didn't know how to go about achieving compatibility with my TI-99/4A.

Believe me, I tried just about everything (from tracing circuits on both the TI and the Televideo keyboards to attempting to understand the coding chips in the Televideo circuit board) to no avail. It was rapidly becoming a hopeless situation.

Then Harry Hoffman announced, at the April meeting of the TI-Chips, that he had obtained the Chicago User Group's manual of reproduced articles on hardware projects for the TI-99/4A. I volunteered to make a copy for the Chips' library. Naturally, I did some investigative reading as I was copying. Lo and behold, I came across no less than three (3) articles on how to build a custom keyboard for the TI-99/4A. (Needless to say, I found that I needed a bib and a napkin to catch the excess saliva created in my mouth as I read this treasure house of information!)

After digesting these articles, I decided that the most reasonable project for me to tackle was the REMOTE 99/4A KEYBOARD WITH SEPARATE NUMERICAL AND CURSOR CONTROL KEYPADS. There was the Televideo paperweight saying, "Go for it!"

My first step was to write out a version of the Wire/Pin to Key correlation table to serve as my guide for both keyboard compatibility testing and hard wiring of the remote custom keyboard for my TI. (A printing of this guide can be found elsewhere in this issue of the newsletter.) I soon found that the un-encoded portion of the Televideo keyboard wasn't compatible with my TI. Besides, I didn't want to commit myself to a project of wiring function keys and special operational keys with sophisticated electronics at this time. So the most sensible thing to do was to gut the Televideo by removing the circuit board from the keyboard. Boy-oh-boy! What a job that was! However, once this was accomplished, the Televideo keys were easily popped out of their support frame.

I then cut out a center area of this frame to accommodate the TI keyboard. I re-arranged the Televideo cursor (arrow) keys in a suitable pattern on the left side (including a FUNC key). The numeric key pad was placed in the original Televideo position on the right side.

In the center, I marked the position of the TI keyboard, and drilled four 8-32 clearance holes in the base of the Televideo plastic housing for the BRASS machine screws that will hold the TI keyboard in place. (I used brass because I wanted to be able to lock the keyboard angle in place by soldering the brass nuts onto the brass support screws.)

At this point, all there was left to do was to hard solder the two key pads onto the TI keyboard. I found that, in order to avoid or minimize soldering difficulty, it was best to cut the wire cable traces where the TI keyboard connects to the stiff connector cable that goes to the consol. (Remove the cable/plug assembly, and throw away the cable, but keep the 15 connector plug.)

All my key to keyboard solder connections were done on the solder points found on the backside of the TI keyboard's circuit board. I used AWG-24 solid conductor hook-up wire for this purpose. All I did was to bend a bare end of the hook-up wire at right angles, apply flux, wet with solder and attach at the proper soldering point on the circuit board (as per the wiring table). This way the wiring is solid and far less difficult to do.

The remote cable I used was a five foot length of fifteen conductor, 24 gauge ribbon cable from Radio Shack. I wired this cable into the rear of the TI keyboard circuit board at the appropriate places to coincide with the proper wire/pin solder points. I soldered the other end of the cable to the fifteen connector plug I kept from the TI keyboard. All I had to do was to plug it into the TI, where the old keyboard was originally plugged, and give it a try.

Other than a few misconnections, my 68RAA worked very well on the first try-out! The entire project took me about four days (at about two hours per day) to complete.

Once I took the time to clean the contacts on all of the keys, my new remote keyboard provided me with a handy - easier to use cursor control, a faster numeric key pad, a large function key that is easy to find and handy to use and most of all, a keyboard that is not imprisoned in the computer. NO MORE BUMPING THE WIDGET OR CARTRIDGES! Blessed is the computer that doesn't hang-up!

Subject: TI-99/4A Keyboard Wiring Guide
By Glenn Bernasek TI-Chips Cleveland, Ohio

Wire/Pin Number	Key
1	Y , U , I , O , P , ENTER
2	6 , 7 , 8 , 9 , 0
3	A , S , D , F , G , SHIFT
4	H , J , K , L , ; , SPACE
5	N , M , < , > , . , = , /
6	ALPHA LOCK
7	1 , 2 , 3 , 4 , 5 , ALPHA LOCK
8	1 , Q , A , Z , O , P , ; , /
9	5 , 6 , T , Y , G , H , B , N
10	Q , W , E , R , T , CTRL
11	Z , X , C , V , B
12	SHIFT , CTRL , SPACE , FCTN , E
13	2 , W , S , X , 9 , 0 , L , .
14	3 , E , D , C , 8 , I , K , < , >
15	4 , R , F , V , 7 , U , J , M



**TI-BASE - From INSCEBOT
TUTORIAL 9.2.1 By Martin Smoley
NorthCoast 99'ers - May 20, 1989
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I hate to have to make a correction already, but I must. Because I have the update chips in my TI 99/4 Impact Printer, I was able to set my line spacing for graphics in 216ths of an inch. The original TI Impact Printer is restricted to line spacing in 72nds of an inch. I can't go into it at this time, so if your graphic prints out in separate segments, check your printer manual for the proper codes.

The CF below is the last item I mentioned last month. It demonstrates a couple new tricks. One: Instead of using local space, we are displaying fields directly to specific screen locations. Two: Each time DSKNAP1 runs, it will display the current Running Total on disks, which is kept in slot 3. This total will be updated by the CF INVUPDT. Everything else is fairly simple. You are asked for the number of disks requested, or the number to be shipped. The answer is stored in ANS and if greater than zero DSKPRL1 is run. DSKPRL1 is the CF all our Graphics people will be interested in. It is very simple in it's straight through nature, but complicated in it's use of data and commands, which are accessed throughout the TI-Base system. NOTE: In an effort to help you make some sense out of this information I will reference past tutorials with the use of brackets. If you encounter a [8.1] for example, this means that a particular item, or idea, was covered in tutorial 8.1.

```
*
                                DSKNAP1
CLEAR
WRITE 5,9,"    NAME FOUND"
WRITE 9,3,"  Exp. Date  ",XP
WRITE 12,3, FN
WRITE 12,18, LN
WRITE 14,3, SA
WRITE 16,3, CT
WRITE 16,22, ST
WRITE 16,25, ZP
WRITE 20,1," Disks in stock = ",3.RTOT
WRITE 22,1," Disks requested = "
READ 22,22,ANS
WRITE 22,1,"
IF ANS > 0
DO DSK2.DSKPRL1
ENDIF
CLEAR
RETURN
*
* DSKNAP1      Save as DSKNAP1/C
* *****
* *****      03/31/89
```

The first thing done in DSKPRL1 is a check to see if our stock of disks has fallen below 50. If it has, the CF NOTE1 is run. NOTE1, which I listed on the next page, puts the message, "ORDER MORE DISKS", in the upper right corner of the screen. The message is stored in the Db MSRET, which we have opened in slot #4, [9.1.4]. The first PRINT statement starts the interesting stuff. PRINT 4.CD2 means print whatever is in field CD2, in the Db we have opened in slot 4. Once again we are using MSRET, but this time the field is designated X-type, [9.1.2]. The field contains 1B3324, and a bunch of zeros. TIB will interpret this as Hex code because of the X designation, and send it to the printer. The printer will see it as the Hex Code to change the line spacing to 36/216ths of an inch, [9.1.3].

```
*
                                DSKPRL1
* Copyright Martin A. Smoley 1989
*
IF 3.RTOT < 50
DO DSK2.NOTE1
ENDIF
PRINT 4.CD2,(e),(E),4.TO,(Drft)
REPLACE TEMP1 WITH " ";
: " Exp. Date " : XP
PRINT (E),TEMP1
REPLACE TEMP1 WITH TRIM(FN) : " ";
: MI : " " : LN
PRINT TEMP1
PRINT SA
REPLACE TEMP1 WITH TRIM(CT) : " ";
: ST : ". " : ZP
PRINT TEMP1
PRINT (CR),(LF),4.CD1
*
SELECT 5
FIND "OHIO"
PRINT (E),(e),4.FR,(Drft)
PRINT (CR),(LF),(E)
PRINT 5.GR1,(CR),5.GR1,4.NAME
PRINT 5.GR2,(CR),5.GR2,(CR),(LF)
PRINT 5.GR3,(CR),5.GR3,4.STREET
PRINT 5.GR4,(CR),5.GR4,(CR),(LF)
PRINT 5.GR5,(CR),5.GR5,4.CTSTZP
PRINT (CR),(LF),(CR),(LF),(Drft)
*
FIND "DISK"
PRINT 4.CD1,(E),(e),4.CTN,(CR),(e),;
4.CTN
PRINT (CR),(LF),(E)
PRINT 5.GR1,(CR),5.GR1,4.CD
PRINT 5.GR2,(CR),5.GR2,(CR),(LF)
PRINT 5.GR3,(CR),5.GR3,4.DNB
PRINT 5.GR4,(CR),5.GR4,(CR),(LF)
PRINT 5.GR5,(CR),5.GR5,4.DNX
PRINT (CR),(LF),(CR),(LF),(Drft)
SELECT 1
RETURN
*
* DSKPRL1      Save as DSKPRL1/C
* *****
* *****      04/01/89
```

Continued Next Page.

**TI-BASE - From INSCEBOT
TUTORIAL 9.2.2 By Martin Smoley
NorthCoast 99'ers - May 20, 1989
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36/216ths inch amounts to normal line spacing. The zeros are used for fill and will have no affect on the printer. NOTE: zeros are the only value that will have no affect on the printer. (e) is my printer Control Code for one line Enlarged Print, and (E) for Emphasized print, [8.1]. All this is to print TO: in Enlarged and Emphasized mode, at normal line spacing. The (Drft) then changes the print type back to Draft Mode. All the work you just went through is to demonstrate the ability to use data, built in printer controls, and controls of your own from special data fields in the same statement. The REPLACE statement is standard. We are placing some words and the persons expiration date into TEMP1. The print line changes the printer to Emphasized, (E), and prints everything we placed in TEMP1. The rest of this is standard, down to the PRINT (CR),(LF),4.CD1. In the past I initialized a BLANK and then printed it for blank lines. (CR) and (LF) will do the same job with no need for memory space. 4.CD1 sets the line spacing to 24/216ths inch, for the graphics. "AH the Graphics." SELECT 5 means make slot 5 TIB's main slot for a while. This is necessary for the FIND function. Our graphics are located in the DB named GRF1, in slot 5, [9.1.2, 9.1.3]. It is sorted on the field GRFNM which allows us to find the graphic data by it name, ie; OHIO. This technique would work quickly for a larger number of graphics and the names could be menu selectable. After OHIO is found we print From:, in the same manner as above, feed one line and reset Emphasized. The (E) will not affect the graphic, but will affect my name in 4.NAME. We then print 5.GR1, the first line of graphic, do a Carriage return with no line feed and print 5.GR1 over again. This is a Double Struck Graphic. Then we print my name, 4.NAME, in normal Emphasized mode. The next line prints the next part of the graphic with no text after it. Here is an important note. The graphic data I have set up in GRF1 has no CR or LF attached. TIB does not hang CR, LF on the end of X type fields. Actually it is better that way. However, this means that you must send a CR and LF after each graphic. The LF is the one that really fires the graphic print. This need not be done if normal data is sent after the graphic, because it will have it's own CR, LF on the end. If you compare the different graphic print lines, you'll see what I mean. You should also go over [9.1.3] a couple times. The last line in this group prints a couple blank lines to get to the next blank label. This is something you must remember when working with 15/16" labels. It is exactly one inch from the top line on a label, to where you print the top line on the next label. If you are working with 216ths inch increments, you must move 216/216ths to get to the next label. During the time we are printing the graphic label, we are feeding lines of 24/216ths each. This means we can feed 9 lines total to get to the next label, 9X24=216. If it doesn't work out that neatly, you can do a one time line feed at the end of the label to make up the difference. This value can be placed in an X-type field and used wherever you need it. I know this stuff sounds complicated and maybe even trivial, but if you're short even one or two 216ths, the printing on your label will slowly creep up until it's off the label. I've had this happen many times and you have probably had the same problem.

The next label prints out in the same manner, but the data is changed. Because of the FIND "DISK" statement, when GR1, GR2, etc. are printed, we now get the disk graphic instead of OHIO. The SELECT 1 statement points TIB back at slot 1 before the RETURN to the previous CF. It is then possible to find another name and do the whole thing again. One thing I'd like to cover is INVUPDT. This small CF is in charge of keeping track of the disk supply and who got what on which day. The first step is to SELECT 2 and APPEND a BLANK. This means we are working with SLSREC, which is in slot 2, and we have added some space to it so we can save some data to that space. The next three lines save the ID number, the present date and the quantity of disks shipped, from the members data named on the mailing label, to the SLSREC Database. This data could be used later to find out how many disks were shipped to whom, on what dates.

That's about it for this month. The LIMA meeting date is approaching rapidly and I haven't prepared my demo yet. Along with pages 9.2.1 and 9.2.2, I have included a TI KEY/CHARACTER CHART by JIM SWEDLW, I hope there will be room for it in the newsletter. I have been using this chart constantly to convert ASCII values to HEX. If you are working with the X-type fields, the only Hex you should need are >0 to >FF, or 0 to 255. This chart is for XBasic, but it really helps with everything we have discussed in the last couple tutorials.

NOTE: I intend to do a few more things with this graphics series, and the retrieval of information from multiple databases simultaneously. Keep an eye on this column for the next few months.

```
* Copyright Martin A. Smoley 1989
*
WRITE 2,28,4.MS1
WRITE 4,28,4.MS2
WRITE 6,28,4.MS3
WRITE 8,28,4.MS4
WRITE 10,28,4.MS1
RETURN
* Print a message from the DataBase
* in slot 4. This is CF NOTE1/C
* DB in slot 4 should be MSRET
*
*****

* Copyright Martin A. Smoley 1989
*
*
* INVUPDT
SELECT 2
APPEND BLANK
REPLACE ID WITH 1.ID
REPLACE SDT WITH .DATE.
REPLACE QTS WITH ANS
SELECT 1
REPLACE 3.RTOT WITH 3.RTOT - ANS
REPLACE 3.LDT WITH .DATE.
RETURN
*
* INVUPDT Save as INVUPDT/C
* ***** Ver. 2.01 04/01/89
```

Continued Next Month.

6

INSTANCE CONVERTER

by WESLEY R. RICHARDSON

NORTHCOAST 99ERS, CLEVELAND, OH, JUNE, 1989

INSTANCE-X is an Extended BASIC program which converts TI-ARTIST instances to a file suitable for TI-BASE version 2.01 to use as a database. Martin Smoley demonstrated the method of using TI-BASE for printing graphics in his article in the May, 1989 issue of the CLEVELAND AREA TI-99/4A USER GROUPS NEWSLETTER. He also had the idea of converting standard graphic data from other programs into TI-BASE. With the help of Deanna Sheridan, who suggested ARTIST instances as an extensive source for graphics, TI-BASE can now import and print graphics.

<u>FILENAME</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
INSTANCE-X	PROGRAM	Extended BASIC program
INSTANCE/S	DIS/VAR 80	Assembly source code
INSTANCE/O	DIS/FIX 80	Assembly object code
INSTANCE/C	DIS/VAR 80	TI-BASE command file
TI-WORLD_I	DIS/VAR 80	TI-ARTIST instance
TI-WORLD_H	DIS/FIX 255	Hex code instance data
TI-WORLD/D	INT/FIX 254	TI-BASE instance data
TI-WORLD/S	INT/FIX 255	TI-BASE structure file

The source code listing INSTANCE/S is for the assembly routines which are called from the Extended BASIC program. To assemble this program, type in the INSTANCE/S file and save it. Then assemble the file giving INSTANCE/S as the source code file and INSTANCE/O as the object code file. Use only the R option because BASIC cannot access object files which use the C compress option.

When running the INSTANCE-X program, it will look for INSTANCE/O on drive 1. After loading, select option 1) to print an instance directly to the printer. Give the input file such as DSK1.TI-WORLD_I and the printer name PIO.CR.LF or the equivalent. Selecting option 2) will convert an instance to hex code for use by TI-BASE. Give an input file name like DSK1.TI-WORLD_I and an output file like DSK1.TI-WORLD_H. Option 3) is for a brief information summary, and option 4) is to end.

Load TI-BASE 2.01 and enter the date in the form MM/DD/YY, for example 05/26/89. For the following instructions, the notation (ENTER) will indicate to press the Enter key. Once in TI-BASE, type SET DATDISK DSK2. (ENTER). If you are using only one drive, the files listed above will need to be on

your TI-BASE disk, and substitute DSK1 for DSK2 in these instructions. With your hex instance file, TI-WORLD_H in drive 2, type CONVERT TI-WORLD_H TI-WORLD_GO (ENTER).

Type HEXCODE (ENTER) under "descriptor", X (ENTER) under "type" and 254 (FCTN 8) under "width". The disk drive should run for a while, and then you will get the "." prompt. Type CATALOG DSK2. (ENTER) to confirm that files TI-WORLD/D and TI-WORLD/S were created. Type USE TI-WORLD (ENTER). Then type RECOVER (ENTER). Finally, type CLOSE (ENTER). If you have made it this far, you now have the instance in a database form which can be manipulated.

To print the instance, we must create a command file to tell TI-BASE what to print. Type MODIFY COMMAND INSTANCE (ENTER). When the screen clears, type in the file shown as INSTANCE/C in this article. Press (FCTN 8) when you are done to save the file and return to the command mode. With your printer turned on, type DO INSTANCE (ENTER) and the instance will print on your printer.

Instances up to 14 character positions wide, and any length up to 32 character rows long may be printed with this method. There is one problem, however. If the instance which you are printing has a long row of blank spaces, TI-BASE may not send these to the printer, and the printer will seem to print garbage, beep, eject paper, and so forth. If this happens with the particular instance you are printing, then you must add a few pixel positions (dots) which are printed to act as place holders.

NOTE: DO THE FOLLOWING STEPS ONLY IF YOU HAD PROBLEMS AT THE PRINTING FROM TI-BASE PROCEDURE. If that is the problem for your instance, then do the following, type USE TI-WORLD (ENTER). Type MODIFY STRUCTURE (ENTER). With the cursor on HEXCODE, press (ENTER) and change the "type" from X to C, then press (FCTN 8). Type SET HEADING ON (ENTER). Type SET RECNUM ON (ENTER). Then type PRINT ALL (ENTER). When the printer stops, type MODIFY STRUCTURE (ENTER). And press (ENTER) to move the cursor from the word HEXCODE to the "type" C. Press X and (FCTN 8).

If you examine the printout of the hex codes you will find a 20 followed by 00's near the end of each record. The 00's after the 20 are ignored, however long sequences of 00's prior or to the left of that 20 can be removed by TI-BASE when it is sending to the printer. Type EDIT (ENTER) and then use (FCTN 5) to go to higher record number or (FCTN 6) to go to lower record numbers. When you

...INSTANCE 2

have located the record with a long string of 00's to the left of the final 20, use the (FCTN S) or (FCTN D) to put the cursor on a 0 in the middle of a string of 00's. Change a 0 to a 1 and then press (FCTN 8) to keep the change and move the the next record. Do this for each record with a long string of 00's. After each record is changed, press (FCTN 8) and when you are done with all of the records, press (FCTN 9) to return to command mode. Type CLOSE (ENTER) to close the database.

Type DO INSTANCE (ENTER) to print the instance to your printer. When you are finished with TI-BASE, type QUIT (ENTER) to return to the TI title screen.

The more that I have used TI-BASE, the more impressed that I am with the power and flexibility of this program.

If you wish to get a copy of the files listed previously, send either a disk (SSSD or DSSD) with some of your favorite programs or copies of your club's last three newsletters to me at 27440 Pergl Road, Solon, OH 44139. I cannot send you any portions of TI-BASE.

-----890526WR-----

filename: INSTANCE/C

```
* INSTANCE/C
* TI-BASE INSTANCE PRINTER
* WESLEY R. RICHARDSON MAY, 1989
* NORTHCOAST 99ERS, CLEVELAND, OH
* CONVERT FILE USING FORMAT:
* FIELD DESCRIPTOR TYPE WIDTH
* 1 HEXCODE X 254
SET TALK OFF
SET RECNUM OFF
SET HEADING OFF
USE TI-WORLD
WHILE .NOT. (EOF)
PRINT HEXCODE (LF) (CR)
MOVE
ENDWHILE
PRINT (LF) (LF) (CR)
CLOSE
RETURN
```

filename: INSTANCE-X

```
100 REM INSTANCE-X V 1.0 TI-ARTIST INST
    ANCES CONVERTER
110 REM WESLEY R. RICHARDSON MAY, 1989
120 REM TI-99/4A EXTENDED BASIC
130 REM NORTHCOAST 99ERS, CLEVELAND, OH
140 DIM A(8),A$(8),C$(32,32)
150 GOTO 170 :: CALL CLEAR :: CALL INIT
```

```
:: CALL KEY :: CALL LINK :: CALL L
DAD :: CALL SCREEN :: CALL SOUND
160 B$ :: D$ :: E$ :: I :: J :: K :: P$
    :: W :: W$ :: X :: X$ :: Y :: Y$
170 !@P-
180 D$="DSK1.INPUT_I" :: P$="PIO.CR.LF"
190 CALL CLEAR :: CALL INIT
200 DISPLAY AT(6,4):"LOADING DSK1.INSTA
    NCE/O" :: CALL LOAD("DSK1.INSTANCE/
    O")
210 REM MAIN MENU
220 ON ERROR 800
230 CALL CLEAR :: DISPLAY AT(4,4):"INST
    ANCE-X CONVERTER FOR" :: DISPLAY AT
    (6,4):"TI-ARTIST INSTANCES TO"
240 DISPLAY AT(8,4):"PRINTER OR HEX FOR
    MAT" :: DISPLAY AT(10,4):"by WESLEY
    R. RICHARDSON"
250 DISPLAY AT(14,6):"1=PRINT INSTANCE"
    :: DISPLAY AT(16,6):"2=CONVERT TO
    HEX CODE"
260 DISPLAY AT(18,6):"3=INSTRUCTIONS" :
    : DISPLAY AT(20,6):"4=END"
270 CALL KEY(0,K,J):: IF J=0 THEN 270 :
    : K=K-48 :: IF (K<1)+(K>4)THEN 270
280 ON K GOTO 650,420,290,840
290 REM INSTRUCTIONS
300 CALL CLEAR :: DISPLAY AT(2,3):"INST
    ANCE PRINTING IS TO" :: DISPLAY AT(
    4,3):"EPSON TYPE PRINTERS."
310 DISPLAY AT(6,3):"HEX CODE OUTPUT IS
    16" :: DISPLAY AT(8,3):"CHARACTERS
    PER RECORD IN"
320 DISPLAY AT(10,3):"THE FORM 91FDC32B
    78605AE4" :: DISPLAY AT(12,3):"TYPE
    OF STRINGS."
330 DISPLAY AT(16,3):"FURTHER INSTRUCTI
    ONS ARE" :: DISPLAY AT(18,3):"IN FI
    LE INSTANCE-D."
340 DISPLAY AT(22,7):"PRESS ANY KEY"
350 CALL KEY(0,K,J):: IF J=0 THEN 350 E
    LSE 210
360 REM INPUT FILE
370 CALL CLEAR :: DISPLAY AT(14,6):"DSK
    0 TO EXIT"
380 DISPLAY AT(6,4):"INSTANCE INPUT FIL
    E?" :: DISPLAY AT(8,6):D$ :: ACCEPT
    AT(8,6)SIZE(-15):W$
390 IF SEG$(W$,4,1)="0" THEN 210 ELSE 0
    $=W$
400 E$=SEG$(D$,1,LEN(D$)-1)&"H"
410 RETURN
420 REM CONVERT TO HEX
430 GOSUB 360
440 DISPLAY AT(10,4):"OUTPUT FILE?" ::
    DISPLAY AT(12,6):E$ :: ACCEPT AT(12
    ,6)SIZE(-15):W$
```


...INSTANCE 3

```
450 IF SEG$(W$,4,1)="0" THEN 210 ELSE I
    F W$=D$ THEN 440 ELSE E$=W$
460 GOSUB 610
470 IF X>14 THEN CLOSE #1 :: DISPLAY AT
    (16,4):"INSTANCE IS MORE THAN" :: D
    ISPLAY AT(18,4):"14 CHARACTERS WIDE
    " :: GOTO 340
480 FOR J=1 TO 8 :: A(J)=0 :: NEXT J
490 A(7)=X :: CALL LINK("SIZE",A(),B$):
    : C$(0,0)=B$
500 FOR J=1 TO Y
510 DISPLAY AT(16,5):X;Y;J
520 FOR I=1 TO X :: GOSUB 630
530 CALL LINK("CODE",A(),B$)! CONVERT 8
    NUMBERS IN A() TO HEX STRING IN B$
540 C$(I,J)=B$ :: NEXT I :: NEXT J :: C
    LOSE #1
550 DISPLAY AT(14,4):"WRITING TO DISK"
    :: OPEN #2:E$,DISPLAY ,FIXED 255
560 FOR J=1 TO Y :: DISPLAY AT(16,5):X;
    Y;J
570 B$="1B41081B4B"&SEG$(C$(0,0),13,4):
    : FOR I=1 TO X :: B$=B$&C$(I,J):: N
    EXT I
580 W=LEN(B$):: B$=B$&"20"&RPT$("0",252
    -W):: PRINT #2:B$
590 NEXT J :: CLOSE #2 :: GOTO 210
600 REM SUBROUTINES
610 DISPLAY AT(14,4):"READING DISK" ::
    OPEN #1:D$,INPUT
620 INPUT #1:X$,Y$ :: X=VAL(X$):: Y=VAL
    (Y$):: RETURN
630 INPUT #1:A$(1),A$(2),A$(3),A$(4),A$
    (5),A$(6),A$(7),A$(8)
640 FOR K=1 TO 8 :: A(K)=VAL(A$(K)):: N
    EXT K :: RETURN
650 REM INSTANCE PRINT
660 GOSUB 360 :: DISPLAY AT(14,6):"XXX
    TO EXIT"
670 DISPLAY AT(10,4):"PRINTER NAME?" ::
    DISPLAY AT(12,6):"PIO.CR.LF"
680 ACCEPT AT(12,6)SIZE(-28):W$ :: IF S
    EG$(W$,1,3)="XXX" THEN 210 ELSE P$=
    W$
690 GOSUB 610
700 OPEN #2:P$ :: PRINT #2:D$;CHR$(10);
    CHR$(10);CHR$(27);CHR$(65);CHR$(8)
710 FOR J=1 TO Y
720 DISPLAY AT(16,5):X;Y;J
730 PRINT #2:CHR$(27);CHR$(75);CHR$(8*X
    );CHR$(0)
740 FOR I=1 TO X :: GOSUB 630
750 CALL LINK("NUMB",A())
760 FOR K=1 TO 8 :: PRINT #2:CHR$(A(K))
    :: NEXT K
770 NEXT I :: PRINT #2:CHR$(13);CHR$(10
    ):: NEXT J
```

```
780 PRINT #2:CHR$(27);CHR$(65);CHR$(12)
    ;CHR$(10);CHR$(10);CHR$(10)
790 CLOSE #1 :: CLOSE #2 :: GOTO 210
800 REM ERROR
810 CALL SCREEN(9):: FOR I=1 TO 200 ::
    NEXT I :: CALL SOUND(500,110,0):: C
    ALL SCREEN(8)
820 RETURN 210
830 !@P+
840 REM END
850 PRINT "STOP"
860 END
```

filename: INSTANCE/S

```
*****
*
* INSTANCE-X EXTENDED BASIC FILE *
* INSTANCE/S ASSEMBLY SOURCE FILE *
* INSTANCE/O ASSEMBLY OBJECT FILE *
*
* WESLEY R. RICHARDSON *
* MAY, 1989 *
* NORTHCOAST 99ER'S - CLEVELAND, OH *
*
*****
```

```
*
DEF CODE,NUMB,SIZE
*
NUMASG EQU >2008 WRITE NUMBER
NUMREF EQU >200C NUMBER GET
STRASG EQU >2010 STRING ASSIGN
FAC EQU >834A FAC ADDRESS
STATUS EQU >837C STATUS REGISTER
GPLWS EQU >83E0 GPW WORKSPACE
*
MYREG BSS 32 MY REGISTERS
BUF1 BSS 18 BUFFER 1
BUF2 BSS 18 BUFFER 2
SAVE DATA >0000 RETURN ADDRESS
*
* CODE - A() CONVERTS TO B$
* HEX CODE IN PRINTER FORMAT
* CALL LINK("CODE",A(),B$)
*
CODE MOV R11,@SAVE RETURN ADDRESS
LWPI MYREG SET UP REGISTERS
BL @GETA A() -> BUF1
BL @SCRPT BUF1-> CV1-> BUF2
BL @HEXSTR BUF2 -> B$
B @DONE BACK TO BASIC
*
* SIZE - A() CONVERTS TO B$ HEX CODE
* HEX CODE IN NUMBER FORMAT
* CALL LINK("SIZE",A(),B$)
*
SIZE MOV R11,@SAVE RETURN ADDRESS
```

...INSTANCE 4

```

    LWPI MYREG      SET UP REGISTERS
    BL  @GETA       A() -> BUF1
    BL  @TOBUF2     BUF1 -> BUF2
    BL  @HEXSTR     BUF2 -> B$
    B   @DONE       BACK TO BASIC

*
* NUMB - A() CONVERTS TO A() NUMBER
*         NUMERIC IN PRINTER FORMAT
*         CALL LINK("NUMB",A())
*
NUMB  MOV  R11,@SAVE RETURN ADDRESS
      LWPI MYREG      SET UP REGISTERS
      BL  @GETA       A() -> BUF1
      BL  @SCRPT     BUF1-> CVT-> BUF2
      BL  @HEXNUM    BUF2 -> A()
      B   @DONE       BACK TO BASIC

*
*****
*
* SUBROUTINES *
*
*****
*
GETA  CLR  R0        LOOP COUNTER A()
      LI  R1,1       VARIABLE NUMB A()
      LI  R2,>1000    LENGTH OF B$ = 16
      LI  R5,BUF1    BUFFER FOR B$
      MOVB R2,*R5+   STORE LENGTH OF B$
LOOP1 INC  R0        POINT TO ELEMENT
      BLWP @NUMREF   GET NUMBER
      LI  R2,>4041    OFFSET FOR 0, 100
      CB  @FAC,R2    IS IT < 100?
      JEQ V99       YES JUMP TO 99
      LI  R2,100     VALUE 100 TO 9999
      CLR  R3        SET UP CONVERSION
      CLR  R4        SET UP CONVERSION
      MOVB @FAC+1,R3 HIGH ORDER VALUE
      SWPB R3       RIGHT SIDE OF R3
      MPY  R2,R3     MULT BY 100, -> R4
      CLR  R3        SET UP LOW ORDER
      MOVB @FAC+2,R3 LOW ORDER VALUE
      SWPB R3       RIGHT SIDE OF R3
      A   R3,R4     R4 IS HEX 00 - FF
      SWPB R4       PUT IN LEFT SIDE
      JMP  ST01     JUMP STORE IN BUF1
V99   CLR  R4        SET UP FOR 0 TO 99
      MOVB @FAC+1,R4 GET VALUE
ST01  MOVB R4,*R5+   PUT IN BUF1
      CI  R0,8       FINISHED WITH 8?
      JNE LOOP1     NO, DO AGAIN
      RT            YES, RETURN

*
*****
*
SCRPT LI  R1,>0080   POSITION VALUE
      LI  R2,BUF1+9 END POSITION
      LI  R6,BUF2+1 POINTER FOR BUF2

```

```

    LI  R9,>7FFF    BIT MASK
SLOOP2 LI R0,>0080  BIT VALUE
      LI  R5,BUF1+1 POINTER FOR BUF1
      CLR  R7       OUTPUT BYTE
SLOOP1 CLR  R3      INPUT BYTE
      CLR  R4      INPUT BYTE
      MOVB *R5+,R3 GET BYTE
      SZCB R9,R3   GET ON BIT
      SWPB R3     PUT IN LOW BYTE
      MPY  R0,R3   ADJ FOR BIT
      DIV  R1,R3   ADJ FOR POSITION
      SWPB R3     MOVE TO HIGH BYTE
      AB  R3,R7    ADD TO OUTPUT
      SRC  R0,1    POINTER TO RIGHT
      C   R5,R2    LOOP DONE?
      JNE SLOOP1  NO, DO AGAIN
      MOVB R7,*R6+ SAVE BYTE
      SRC  R9,1    ADJUST MASK
      SRC  R1,1    ADJUST POINTER
      CI  R6,BUF2+9 LOOP DONE?
      JNE SLOOP2  NO, DO AGAIN
      RT            RETURN

*
*****
*
HEXSTR CLR  R0      LOOP COUNTER
      LI  R5,BUF1+1 POINTER FOR BUF1
      LI  R6,BUF2+1 POINTER FOR BUF2
LOOP2  INC  R0      INCREMENT COUNTER
      CLR  R4      SET UP REGISTER
      MOVB *R6+,R4 GET VALUE
      SWPB R4     TO LOW POSITION
      MOV  R4,R3   COPY VALUE
      ANDI R3,>00F0 GET LEFT VALUE
      SLA  R3,4    IN HIGH ORDER BYTE
      CI  R3,>0A00  VALUE < 10?
      JL  CONLL    JUMP IF LOW
      AI  R3,>0700  ADJUST FOR ABCDEF
CONLL  AI  R3,>3000  ADJUST FOR STRING
      MOVB R3,*R5+ STORE LEFT VALUE
      ANDI R4,>000F  RIGHT VALUE IN B$
      CI  R4,>000A  VALUE < 10?
      JL  CONRL    JUMP IF LOW
      AI  R4,>0007  ADJUST FOR ABCDEF
CONRL  AI  R4,>0030  ADJ. STRING VALUE
      SWPB R4     MOVE TO HIGH BYTE
      MOVB R4,*R5+ RIGHT VALUE IN B$
      CI  R0,8    FINISHED A() ?
      JNE LOOP2  NO, DO AGAIN
      CLR  R0     B$ IS NOT AN ARRAY
      LI  R1,2    B$ IS VARIABLE 2
      LI  R2,BUF1 LOCATION OF B$
      BLWP @STRASG WRITE B$ STRING
      RT            RETURN

*
*****
*

```

...INSTANCE 5

```

TOBUF2 CLR R0      LOOP COUNTER
        LI R5,BUF1+1 POINTER FOR BUF1
        LI R6,BUF2+1 POINTER FOR BUF2
LOOP3  INC R0      INCREMENT COUNTER
        MOVB *R5+,*R6+ MOVE VALUE
        CI R0,8    FINISHED WITH A()?
        JNE LOOP3 NO, DO AGAIN
        LI R6,BUF2+7 SIZE VALUE
        CLR R3     CLEAR REGISTER
        MOVB *R6,R3 GET SIZE
        SLA R3,3   MULTIPLY BY 8
        MOVB R3,*R6 STORE SIZE
        RT

```

filename: TI-WORLD_I

```

5,10
0,0,63,21,31,20,28,24
0,0,199,255,109,56,40,56
0,0,249,82,243,80,112,48
0,0,227,107,54,28,20,28
0,0,192,32,96,0,0,0
16,32,0,0,0,0,0,0
40,56,40,56,40,56,40,56
16,8,0,0,0,0,0,0
20,28,20,28,20,28,20,28
0,0,0,0,0,0,0,0
12,16,8,7,0,0,0,0
40,56,108,215,0,0,0,0
96,19,34,193,0,0,0,254
20,28,119,235,0,0,0,0
0,96,32,192,0,0,0,0
0,0,0,0,0,1,2,2
7,24,33,66,132,8,16,17
125,186,85,84,146,146,146,17
192,48,8,132,66,33,16,16
0,0,0,0,0,0,128,128
4,4,4,8,8,8,15,8
33,33,34,66,66,66,255,66
17,17,16,16,16,16,255,16
8,8,136,132,132,132,255,132
64,64,64,32,32,32,224,32
8,8,4,4,4,2,2,1
66,66,34,33,33,17,16,8
16,16,16,17,17,17,146,146
132,132,136,8,8,16,16,33
32,32,64,64,64,128,128,0
0,0,0,0,0,0,0,0
132,66,33,24,7,0,0,0
146,84,85,186,125,254,0,0
66,132,8,48,192,0,0,0
0,0,0,0,0,0,0,0
7,24,48,112,80,112,80,112
252,15,6,3,1,1,3,7
1,6,140,220,84,220,84,220
255,3,1,0,0,0,0,1
0,192,160,240,80,112,208,240
56,15,0,0,96,48,56,40
13,249,1,1,1,1,2,3
78,195,64,192,88,204,142,10
3,254,0,0,0,0,0,0
80,112,80,112,80,112,160,192
60,103,0,0,0,0,0,0
14,248,0,0,0,0,0,0
15,25,0,0,0,0,0,0
3,254,0,0,0,0,0,0
128,0,0,0,0,0,0,0

```



```

*
*****
*
HEXNUM CLR R0      LOOP COUNTER A()
        LI R1,1    VARIABLE NUMB A()
        LI R5,BUF2+1 BUFFER FOR B$
        CLR R6     ZERO
LOOP4  INC R0      POINT TO ELEMENT
        CLR R3     SET UP WORK AREA
        CLR R4     SET UP WORK AREA
        MOVB *R5+,R4 GET NUMBER
        CI R4,>6400 GREATER THAN 100?
        JL N99    NO, LESS THAN 100
        LI R2,>4100 VALUE 100 TO 9999
        MOVB R2,@FAC STORE X100
        LI R2,>0064 DIVISOR = 100
        SWPB R4    IN LOW POSITION
        DIV R2,R3  R3+R4/R2
        SWPB R3    PUT IN HIGH BYTE
        MOVB R3,@FAC+1 STORE HIGH BYTE
        SWPB R4    PUT IN HIGH BYTE
        MOVB R4,@FAC+2 STORE LOW BYTE
        JMP STO2   GOTO WRITE
N99    LI R2,>4000 SET FOR 0 TO 99
        MOVB R2,@FAC STORE X1
        MOVB R4,@FAC+1 STORE NUMBER
        MOVB R6,@FAC+2 BALANCE IS ZERO
STO2  MOVB R6,@FAC+3 BALANCE IS ZERO
        MOV R6,@FAC+4 BALANCE IS ZERO
        MOV R6,@FAC+5 BALANCE IS ZERO
        BLWP @NUMASG WRITE A() NUMBER
        CI R0,8    FINISHED WITH 8?
        JNE LOOP4 NO, DO AGAIN
        RT        YES, RETURN
*
*****
*
DONE  LWPI GPLWS    GPL WORKSPACE
        CLR @STATUS CLEAR STATUS REG.
        MOV @SAVE,R11 RETURN POINT
        B *R11     TO EXTENDED BASIC
        END

```

THE LIMA CONFERENCE

At this time I don't know if any of the other members who attended the Lima meeting are going to write articles for the newsletter on what took place there, but this is more of a commentary on the atmosphere rather than the content. As you will guess from the lines that follow, I had an unbelievably great time at Lima. We were mobbed by people most of the day, which seemed to be endless. Contrary to the normal stigma attached to the word mob, this mob was made up of the nicest, kindest, friendliest, most courteous bunch of people you would ever expect to meet. From the Lima members, who were running the show, to the users from across the country who dropped in to visit, the people were fantastic. I'd like to thank everyone involved with the conference, especially those directly involved in putting the whole thing together. The meeting appeared to be a great success, and I'm sure the members who traveled far to be there were satisfied with the results.

DELAYS

As some of you know, I am one of those seasonal people who has the least amount of TI time available from early spring to late fall. For this reason I normally fall behind in the mailing of library disks and other club related material. I'm sorry that the service falls off as it does, but I must work in order to support my habits. If you need something from me during the summer season, please be as patient as possible. I'll try to keep things moving as fast as I can.

CLEVELAND AREA 99/4A USERS GROUPS
C/O DEANNA SHERIDAN
20311 LAKE ROAD
ROCKY RIVER, OH 44116

CHECK YOUR EXPIRATION DATE.
THIS MAY BE YOUR LAST ISSUE!

Exp. Date: 08/87

For some reason many people from across the country, have been contacting me about problems they are having with their disk drives. I have not had the time to answer these letters, and I'm sorry to say, I don't have the time to help people repair their disk drives, or my own. As Deanna mentioned last month, disk drives are available through Computer Shopper Magazine at very reasonable prices. In the June issue I found Mitsumi 1/2 Hts for \$62.00 and MPI Full Hts for \$39.95. There were also Surplus (used) misc. full Hts for \$19.95 and power supplies for \$12.00. With prices this low I don't fix my own drives.

THE NEXT NORTHCOAST MEETING

Wes Richardson will demonstrate TI-LOGO. Many of us have LOGO, but don't really know what to do with it. Wes is going to try and enlighten us on the purpose and advantages of the language of LOGO. As you know if you attended the last meeting, Wes helped fill in by doing a demo of a graphic language called "G". Both Wes and G turned out to be a big hit with the members. Hopefully Wes will be available to do a complete series of demonstrations on several different languages and their relationship to each other. Wes already has the demonstrations prepared for the most part and from what we've seen so far they should be great.

Hope to see all of you at the next meeting. Marty



!! TIME DATED MATERIAL !!