



UG EDMONTON 99'ERS USER SOCIETY P.O. BOX 11983 ALBERTA, CAN. T5J-3L1

## Newsletter for the MID-SOUTH 99 USERS GROUP Vol 3, #7 July, 1985

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## PRESIDENTS BIT

Hello again. The last meeting went very well with the free cartridge we gave away as a door prize and all of the equipment and software that was sold at unbelievable prices! We will continue to have a door prize at the meetings but you must be there to win!

TI is still alive and well with some new equipment out which was shown at the recent Consumer Electronics Show. As of the writing of this article I have not heard much about what was shown except that TEX-COMP has come out with some type of TI-Compatable computer. By the next newsletter we should have full details on all of the new equipment in store for us.

I would like to apologize for being uncertain of a meeting place for the last two meetings but we were working on finding us a permanent meeting place. We will not be going back to the Board of Ed as they are not letting but a few back there after the teacher's negotiations because of having to cancel all the meetings of groups that go there whenever they need the place. We have now found us a new (hopefully permanent) meeting place at the Red Cross located at 1400 Central. It has plenty of room for us and looks real nice. It even has a snack room for us to eat in and most of all it is free!

I would like to thank all of the people who have donated money and equipment to our TIBBS board. We really appreciate the help. Remember, support our advertisers and remember that the TI Exchange center is there to support us with any equipment problems.

I wish to welcome those new members who signed up at the last meeting. I am glad you decided to join us. See everyone at the next meeting....

Gary Cox President



BASIC or EXTENDED BASIC, and will 'dump' any image to a printer exactly the way it appears on your screen!!! Printouts are made very quickly in NORMAL SIZE or DOUBLE SIZE with an **INVERSE OPTION which will print a** negative image of the screen! Use It in your own programs to enhance their power! Works great on the Gemini 10x, Epson, and TI printers! Comes with a 5 screen DEMO program! GREAT LAKES SOFTWARE 804 E. Grand River Ave. Howell, MI 48843 WRITE FOR FREE CATALOGI

## TI ALIVE

Many of you are concerned about where you are going to get future equipment and software and where your going to get your computer repaired if something ever goes wrong with it. This article is to assist you in relieving these worries. There are MANY hardware and software manufacturers still out there. In fact there is more software and hardware out there than when TI was still producing the TI99/4A. Everything you could buy when TI was making the TI99/4A is still available today and in most cases at prices far below their original selling price. However, the only problem is that most of it must be obtained through mail order which only means you must wait a few weeks sometimes to get what you ordered. TI is still (and will continue for a long time) to service the TI computer with it's many service centers across the country. We here in Memphis are lucky to have a TI Exchange center right here in Memphis! If you ever have any TI brand equipment go bad simply take it to the exchange center where they will give you a reconditioned model for the defective piece you give them so you do not have to wait for them to repair it! Many other companys have either bought out TI's remaining stock of software and hardware or have created their own TI compatible software and equipment. This software and equipment may be obtained through local dealers (in our group) or by mail requests. Listed below are the major manufacturers and retailers of equipment as well as several of the most popular magazines who carry articles and programs on TI. The local TI exchage center is also listed. Also the 1-800-TI-Cares number is still active if you have any questions.

TRITON P.O. BOX 0123 SAN FRANCISCO, CA. 94120 800-227-6900

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TENEX P.D. BOX 6578 SOUTH BEND, IN. 46660 Order line= 800-348-2778, Info line= 1-219-259-7051

UNISOURCE ELECTRONICS INC. 7006 UNIVERSITY P.O. BOX 64240 LUBBOCK, TEXAS 79464 800-858-4580

TEX-COMP P.D. BOX 33084 GRANADA HILLS, CA. 91344 1-818-366-6631

MYARC 1-404-928-8791

COMPUTER SYSTEMS SUPPORT 589 G STREET MILLINGTON, TN. 38053 901-872-4742 ELECTRONIC RAIN 901-454-9896 (24HRS)

#### MAGAZ INES

MICROpendium P.D. BOX 1343 ROUND ROCK, TX. 78680 #18.50 YEAR SUBSCRIFTION.

HOME COMPUTER MAGAZINE P.O. BOX 70288 EUGENE, OR. 97401 \$25 YR specify Tape or Disk for 2 free "ON TAPE" or "ON DISK"...

TEXAS INSTURMENTS CUSTOMER SERVICE CENTER 6584 POPLAR AVENUE, SUITE 110 MEMPHIS, TN. 38138 901-685-8154

These are just a few of the major retailers there are many more. Also there are at last count, officially over 300 TI users groups across the world! In fact, there are users groups in Canada, Australia, Belgium, Colombia, Denmark, Germany, India, Fhilippines, and England as well as all over the United States! So as you can see we are far from being alone. The TI is still alive!

Gary Cox

## TUTORIAL 1 - THE BEGINNING by Mack McCormick CI80 74206,1522

Here are the objectives of this first tutorial: 1. To introduce you to the Hexadecimal and Binary Numbering systems. 2. To introduce you to the assembler instruction format. 3. To introduce you to addressing modes. 4. First program. Adding two numbers and displaying them on the screen. 5. How to assemble.

Just a few words on Assembly language before we begin. It's not as difficult as you may believe. You will be communicating with the microprocessor at the first level above machine language, assembler. As you know, the machine actually communicates in binary 0's and 1's, on or off. Assembler allows us to talk to the machine in a language we can understand (Although I'm sure the uninformed would disagree). With these tutorials I will assume no prior knowledge of assembler or other number systems. Flease bear with me, I won't insult your intelligence and things will become more complex soon. Stick with the tutorials. Kead every book about assembler you can get your hands on. I will publish a bibliography of books soon. Don't get discouraged! Compuserve is a difficult medium thru which to provide assistance. I promise to answer your questions and if I don't inow the answer, I'll find gomeons else that can. I base mate this an interactive process, as with each other.

#### Numbering Systems

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Hexadecimal (HEX) and binary are merely different base numbering systems for counting. It's important we understand both of these systems in addition to base 10 or the decimal system because assembler uses all three. I will tell you up front that I use a calculator designed for these numbering systems usually but we need to understand the principles also. If you want to get a calculator, and I recommend that you do, there are several inexpensive models on the market. I use the Casio solar powered fx-451 scientific calculator for \$35. It supports HEX, OCT, BIN, LOGICAL OPERATORS, and all scientific functions. Works great! Craig Miller and others have also published programs which will allow you to use your computer but this has the disadvantage of requiring you to load another program every time you need to make a calculation, a real pain.

Binary Number System

As already mentioned, binary is the native language for your computer. Everything eventually gets converted to binary. Let's look at a decimal number first. As you know decimal means powers of 10. Each number represents a power of ten. For example 4175:

10^3=:	1000	4	Х	1000=4	1000
10^2=	100	1	X	100=	100
10^1=	10	7	Х	10=	70
10^0=	1	5	Х	1=_	5
				7	175

Binary numbers can be 1 or 0 only, hence base 2. The individual number is called a bit. A group of eight of these is called a byte. To convert the binary number 00001011 to decimal follow the same procedures you used with the decimal number:

Ignore any leading zeros.

2^3≈B	1	Х	8-	6
2^2=4	0	Х	4=	0
2^1=2	1	Х	2=	2
2^0=1	1	х	1=_	1
			1	11

To make it easier to communicate with the computer we most often use HEX. From now on I will use a > to indicate a number is in hex. Hex is base 16. That is a number may be 0 thru 15. To represent numbers greater than 9 we use letters of the alphabet. 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F. Just remember to use >A for 10 and count to 15 ending with >F. Let's convert >394F to decimal:

16^3=4096		3	Х	4096=:	12,288
16^2≖	256	9	Х	2 <b>56≖</b>	2,304
16^1=	16	4	X	16=	64
16^0=	1	F	X	1=	15
				:	14,671

The largest number you may represent in one byte is  $\pm F$  or decimal 255. The largest value in a word (two bytes) is  $\pm F(F)$  or -65,535.

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Enough on numbering systems for now, we'll cover minus numbers (twos compliment) and additional points as we encounter them in programs.

Assembler Instruction Syntax.

Like every computer language there are certain rules we must follow for inputting instructions. Unlike BASIC, assembler will not give you a warning or error until you assemble the program. Here's the general syntax:

LABEL OPCODE OPERAND COMMENT

Labels must begin in the 1st column and may be up to 6 characters long. One or more spaces follow. Next is the OPCODE. This is the actual instruction to be performed followed by one or more spaces. Next are one or more operands or data for the instruction to operate on followed by one or more spaces. Finally is an optional comment which may extend to column 80. Each time we use a new instruction I will fully explain it.

Addressing Modes.

There are five general addressing modes and one special addressing mode used for assembler instructions. We will examine each one in detail as we encounter them in a program. There is one type of addressing we need to look at now. We are going to be operating on individual bits, bytes, and words of memory. Think of the computers memory as a series of consecutive small pieces of memory laid out end to end. We can address any single byte of memory by hanging a label on it but frequently we must address a byte of memory some distance from that label. Think of it like an array. To get to the 5th byte from the label we could say LABEL+4. We used 4 instead of 5 because we must start counting from 0. Think of it like OPTION BASE 0 in BASIC. Lot's more on this later.

First Program. I strongly recommend you enter the program manually by typing it in instead of just cleaning it up using TI-Writer or Editor/Assembler. The only way to gain experience programming is to practice.

I've place the program separately to make it easier to read. It's is in Ft2 in next months newsletter.

Frogram explanation . These comments supplement the comments contained in the program itself. Any statement with an \* in column 1 is a comment and you may enter anything else on that line. One fairly unique thing about the 9900 microprocessor in the II-99 is the ability to designate your own workspace registers anyplace in memory or more than one set at a time. Think of registers as 32 consecutive bytes of memory that are used as your scratch paper for calculations. Thirty-two bytes is of course 16 words of memory. Because this is a 16 bit (i word) machine (something many of your friends can't brag about) that gives us 16 registers to use for our computations. We place an R in front of the number to designate that we are refering to a register. For scample, RO is conster zero and R15 is register fifteen (really by foth word of memory because we started counting with zero.) Here's the detailed explanation of the programs

DEF START

DEFines the entry point of the program so the computer may find it. Places the name START in the Reference/Definition table. More on this next time.

REF VSBW, VMBW

REFerence refers to console routine the program will use. In the advanced tutorials we'll create our own utilities.

This is a series of articles which will be continued in future newsletters.

## FORTH TO YOU, TOO!

by Lutz Winkler

#### Introduction:

According to our source there are quite a few people out there who got the TI-FORTH disk and documentation when TI made them available to user groups. But not very many do much with it. Why? Weil, the TI manual is not a tutorial, it assumes that you know something about FORTH. Though packed with useful information there are no instructions on how to begin. We will try to get you started from the very beginning. Hopefully we'll strike a happy medium, somewhere in between teaching and providing info that's useful to you. What is FORTH?

There was much hype when it became available to TI users, some of it was overdone, but it is faster than BASIC and there are some advantages which will not immediately be evident to a beginner. FORTH is a TIL (Threaded Interpretive Language) and it'll be hard for you to believe that there is no 6010 command. If that is hard to swallow, there is more a It uses RFN or post-fix notation (RPN) ■ Reverse Folish Notation). In other words, it's not 2 + 2 that equals 4 but 2 2 + . We'll find out more as we go along, for now let's just say that FORTH is very powerful, quite a bit faster than BASIC, compact, but perhaps more difficult to learn than As a matter of fact, knowing BASIC may make it harder on BASIC. you, because you'll be thinking BASIC until you get the hang of FORTH.

Getting started.

Before you do anything with your FDRTH disk, get out the DISK MANAGER and make a backup copy. Do all your work and experimenting with this copy unless you are prepared to get a new FORTH disk. Now plug in the EDITOR/ ASSEMPLER, opt for 3 (LOAD AND RUN) and enter DSk1.FORTH. After a moment the screen shows "BOOTING..." which is soon replaced by a menu. These are the LOAD options. For right now you need to concern yourself with only 2 of thems the normal or the 64-column editors. Your choice will depend on several factors: 1) your eyesight, 2) your monitor, and 3) how well you have adapted to using 'windows'. So jump right in and enter -64SUPFORT, After your disk drive is through you will see a tiny 'ok', meaning the 64 column editor has been booted. To see what your screen will look like type 34 EDIT <enter>. If you can read what is displayed on your screen, you'll More (Q)uit Hit ENTER to continue> want to stav with -64SUPFORT. If it's hard on your eyes, settle for the 40 column editor. To get an idea what it looks like, hit FUNCT-9(ESCAPE), then enter TEXT COLD. FORTH will re-boot and when it is done, enter -EDITOR. (From now on, 'enter' will mean to type in the word followed by the ENTER key.) Again enter 34 EDIT to see what your 40 column editor looks like. Programming in Forth consists of editing SCREENS, such as that number 34 screen you called up for editing. But we are not ready for that, yet. Hit ESCAPE (F-9 and enter FLUSH and do this: Make yourself an overlay strip so you can edit easily. Keys and their functions are explained on page 5, chapter 3, of the TI-FORTH manual. Now here is another thing you might want to find out right now: a display color that suits you. Since display color that suits you. Since you are still in the so-called 'interactive' mode of FORTH (no program is running) you can type this little ditty | | SEE 252 22 DO I DUP . 7 VWTR KEY 2 = IF ABORT ENDIF LOOP | After you get the ok type SEE. Don't worry if you can't read anything, at times the FG and BG colors match and there's nothing to be read. When you see a combination which gives you a good screen display, write down the last number (bottom of the screen) and continue to step through the loop (or exit via FUNCT-2). You have accomplished 2 things: 1) you know the editor you want. 2) you have chosen a screen color.

END SESSION 1.

#### BTUFF

After the last board meeting some of us who have been working with computers and electronic calculating machinery for a while got to swapping war stories about some of the history of these little buggers. I thought I would share some of these with the rest of you.

Like the time a computer operator got bent out of shape and threw a real of tape which proceeded to bounce off two walls and the floor before crashing through the glass door of a \$35,000 tape drive.

Or the time a truck driver was trying to save some money and dropped a 2,000 pound \$1,000,000 computer off the back of the truck while unloading.

Well, that just about fills up the available space this month. Maybe I will have some leftover space again next month to tell more of this kind of useless trivia.

#### Howard Watson

# Texas Instruments Customer Service Program

The owner of a Texas Instruments product may exchange a repairable, defective unit for a factory rebuilt replacement of the same model, or equivalent model as specified by Texas Instruments, by taking the defective unit to the Customer Service Center listed below:

> Texas Instruments Customer Service Center 6584 Poplar Avenue, Suite 110 Memphis, Tennesse 38138 901-685-8154

No fee will be charged, with proof of purchase, during the first 90 days. A nominal fee will be charged after 90 days from date of purchase. The replacement unit will be in warranty for the remainder of the original warranty period or for 6 months, whichever is longer. Defective accessories which are in warranty will be exchanged without a service charge, with proof of purchase.

Out of warranty exchanges will be charged at the rate in effect at the time of exchange. Exchanged units will be in warranty for 6 months.

For additional information regarding fees and mail in service, please call the Texas Instruments Customer Service Center listed above.

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## **TEXAS INSTRUMENTS**

1984 Texas instruments

## DOOR PRIZE!

A cartridge will again be given away as a door prize at this meeting. You will get to pick from our library (selective) cartridges which one you want. So don't miss the meeting, you must be there to win!

> Gary Cox President

#### REWARDING BOUND

Pleasant sounds can be so rewarding, and here's a tune that can be inserted into a BASIC or Extended BASIC program to brighten it up.

> 100 CALL SUUND(110,262,1) 110 CALL SOUND(110,330,1) 120 CALL SOUND(110,392,1) 130 CALL SOUND(298,523,1) 140 CALL SOUND(298,523,1) 150 CALL SOUND(350,523,1)

This sound advice comes from the Delaware Vally Users Group, Wilmington.

Edited from MICROpendium June 1985 issue.

## VOLTAGE DOES IT

William Fielden, of Louisville, Kentucky, writes: "Having tried loading many cassette programs and encountered the NO DATA FOUND or the ERROR IN DATA messages once too often I called TI to see if they could offer any help. From their assistance I found the computer is looking for a signal of one volt measured peak to peak. With this knowledge, I constructed a "Y" connector to allow the connection of a Volt-Ohm-Meter to be connected to the ear phone jack from the tape recorder. Next, I set the V.O.M. to 2.5 volts A.C. and tried loading a program while adjusting the volume control and leaving the tone at maximum. By adjusting the volume to give a reading of approximately one volt the program went right in. Then I again tried all the difficult programs that could not be loaded previously and found that out of approximately 50 all but one loaded on the first attempt, and that one loaded on the second attempt. Needless to say, I was very pleased."

From Micropendium June 1085 issue

#### TI-COMPATIBLE!

A new TI-compatible computer, the 10-99/9, and new line of peripherals for the T199/4A have been announced by Tex-Comp Users Supply Company of 6 and a Hills, California. Tex-Comp is a major retailer to products for the T199/4A computer.

becauses of the peripherals and computer has been done in

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secret "to avoid premature spreading of rumors that can beco distorted," said Jerry Frice of Tex-Comp, graduate engineer w directed the design development project. "We didn't want to ma any anouncements until we had a viable product, ready demonstrate and sell and a game plan for future development Price said.

The new product line is based on an all-new enclosure which orginal in design but suggestive of the designs currently used IBM and TI for their FC models. The basic product being offer by Tex-Comp is the TC-1, which comprises the enclosure, equipp with a heavy-duty regulated fan-cooled power supply, t double-sided, double density half height drives and a rear pan of six surge and spike protected electrical outlets, ea controlled by a switch on the front panel. This verson designed to complement the Corcomp 9900 expansion system whi Price said Tex-Comp feels is the best 99/4A expansion product the market. "With the TC-1 configuration which will be retail at about \$450 combined with the CorComp 9900 system, the TI us will have the finest state-of-the-art equipment with disk stora capacity equivient to eight TI singe-sided drives." he said.

The next product displayed by Tex-Comp at the Consumer Electroni Show in Chicago is the model TC-2 which has the CorComp 99 system and TI speech synthesizer built in along with the featur of the TC-1. This configuration is a complete expansion syst which will retail at about \$750. Model TC-3 is an upgraded TC with a 128k RAM and buffer board added to the TC-2 configurati and will retail at about \$875. The TC-99/9 is basically the TC 128k configuration with a modified 40/80 column TI processor boa added and designed to accept the new Wico smart keyboard which h a 10-key pad and built in trackball. TC-99/9 is a 128k ful compatible TI computer, which produced in small commercial ru should retail in the \$1,300-\$1,500 range, fully configured with color monitor. "We are currently conducting both market and co studies to determine if this product can be viable in light of t existing market and price range" said Price.

Edited from Micropendium June 1985 issue

#### EQUIPMENT SELLOUT

The following equipment is being offered for sale by Prest McDaniel

Two complete systems:

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System 1 - Console, TI printer, monitor, P.E. Box, 32K, KS-2 card, Disk Controller, and two TI disk drives.

System 2 - Console, 1I printer, monitor, P.E. Box, 32K, RS-2 card, disk controller, one TI disk drive, modem.

Preston also has lots of software for home or office includi TI-Writer and Multiplan.

Preston would like to sell the two systems for \$1,500 together

will consider breaking them up into pieces if he can't sell the package. While Freston did not say so, I would assume he would part with them for \$750 each.

Call Freston McDaniel at 682-7970 evenings and weekends or 682-5616 at work.

## LIBRARY BIT

Fierre has started up a few new rules for the library to make it easer on him to copy programs and easier for everyone to obtain programs. There is now a 5 program limit on the number of programs you can obtain each month from the main program list. However, on the update list you may obtain an unlimited amount of programs from that list. That is the list that has the best programs on it anyway such as screen dump, neatlist etc...

Those who now wish to have cassette programs or books should contact Adolph Butler at the meetings. He is now handling that portion of the library to make it easier for those with only a cassette piayer to obtain programs. It may be a month or so before Adolph gets the cassettes completely organized for easy copies but we are doing our best to make it easy for our members to obtain programs from our library.

Please be patient with Pierre and Adolph as it takes a lot of work to keep the library going and Fierre also operats the TIBBS board. However, orders for programs should get back to you within a month. Any suggestions and vounteers are welcome!

#### Gary Cox

## MEMBERSHIP NOTICE

On your newsletter you will notice some figures above your name and address. The first figure should be a Y if you are a member. The next figure is the date that you joined or last paid your dues. If you have not paid your dues for a year you need to do so. If there is an 83 there you especially need to do so. The next figure is the date you last attended a meeting. So if your membership dues are due please pay up so you will continue to get your newsletter, library access and all of the other benefits. Thank you.

#### SHOPPERS CORNER

Howard Watson has a few ribbons which will work on the Gemini 10X printer for \$1.65 each. See him at the meeting.

Have a used item you want to sell or need to find? Anyone wanting to buy, trade or sell any 99/4A product may post a notice in the Shopper's Corner. Free for members - \$1 per item for non-members. Notices may be given to Brenda Watson at any Users Group meeting. Notices should be brief (no more than three lines 65 characters lines  $G_{\rm corr}$  (prod).

## ANNUAL DUES

Is your annual membership due? To find out, look at the mailing sticker on the back of this newsletter. If it has dollar signs (\$\$\$) on it, it is time to renew your membership. Your membership in the group is required for use of the library, the Bargain Corner deals and the newsletter. Your dues are the only funding the group has to pay its bills and produce and mail the newsletter, so please pay when your time comes. It is only \$15.00.

## PROTECTION

There are strong FEDERAL LAWB against duplicating copyrighted programs. Please don't break these laws!

## TIBBS BULLETIN BOARD 357-5425

LIBRARY PROGRAM ORDER FORM ID • NAME \_\_\_\_\_ PHONE (\_\_\_\_\_\_ TAPE TURNED IN \_\_\_\_\_ COPIES ON TAPE 1. \_\_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 4. 2. \_\_\_\_\_ OR DISK TURNED IN \_\_\_\_\_ COPIES ON DISK 1. 4. 5. \_\_\_\_\_ 2. 3. COMMENTS:

I YES, I WOULD LIKE TO WORK ON THE LIDRARY COMMITTEE. Mail form to: Pierre LaMontagne, 3805 Denver, Mamphis, In., 38127

## DISCLAIMER

The Mid-South 99 Users Group is not affiliated with or sponsored by Texas Instruments and has no relationship with them, implied or otherwise. Any mention of a company or product is not an endorsement of either the company or the product.

## ANNOUNCEMENT

The TIdBits newsletter is available in LARGE PRINT for the visually impaired. Contact Howard Watson for copies.

## FREE NEWSLETTERS

When you come to a meeting as a visitor for the first time and become registered on our files by filling out a "User Profile" sheet (does not obligate you to join), you will automatically receive three issues of our newsletter, TIdBits. If you have not joined our club within three months, you will notice three pound signs (###) on your mailing label. That means this is the last free newsletter you will receive. You must pay the annual membership dues to continue receiving TIdBits afterwards. Watch your newsletter label and pay your dues to ensure that you keep receiving the newsletter.

#### CALENDAR

MEETINGS: July 18, August 22, September 19. WORKSHOPS: July 20, August 24, September 21.

## OFFICERS

Gary Cox	President	358-0667
Rick Glisson	Vice-President	386-11 <b>59</b>
Yvonne Morgan	Secretary	372-7002
Tara Kirby	Treasurer	388-1104
Pierre LaMontagne	Chairman - Library	353-3067
Howard Watson	Editor - Newsletter	755-4859
Dick Vandengerg	Chairman - Frogram	521-9560
Beth Woodliff	Chairman - Public Relations	386-1297
Mac Swope	Chairman - Equipment	363-0735

#### GROUP MAILING ADDRESS

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