



PITTSBURGH
P.U.G.
USERS GROUP

PERIPHERAL

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NUMBER 11

JUNE MEETING

The next regular meeting of the Pittsburgh Users Group will begin at 6 p.m. Sunday, June 19th 1983 (Father's Day) at the Community College of Allegheny County's South Campus.

The Group's program library will be open for copying programs or to accept returns between 5 p.m. and 6 p.m.

After the main business meeting we will break up into three interest groups: Basic, Extended Basic and Assembly Language.

LAST MEETING

At the May meeting, president Chuck Percherke, opened a discussion on the collection of a voluntary \$5.00 fee to help the Group purchase equipment.

Some equipment is needed to facilitate the record-keeping of the Group and to eventually be part of a complete TI 99/4A Computer System.

A poll of the members present was taken and the members almost unanimously approved the purchase of a Peripheral Expansion Box, RS-232 Card, Disc-Controller and a TI-Writer Program. These items will be ordered and presented before the Group at a future meeting.

It was decided that a committee should be formed to analyze the needs of the Group and make recommendations for the purchase of future equipment. Dave Haggerty volunteered to chair this committee.

A drawing was held to give away a program which was donated to P.U.G. The winner was 9 year old Amy Stefan. She selected five numbers at random and these winners had the opportunity to select a program from the 99/4

Program Exchange. The winners were:
Steve Stefan Carol Wilson
Keith Bajura John Asmonga
Alison Smith

Their selections will be distributed to the winners when they arrive.

A demonstration of the new TI Professional Computer (Pegasus) was given by Scott Naugle and Steve Shidel from the Pittsburgh Computer Store, 47 Clairton Blvd. (Rt. 51) Pleasant Hills, Pa. Steve was able to bring a number of command modules and programs that were available for sale to Group members. He also ran demonstration programs of the Word Star and Multi-Plan Disks which can be purchased for the TI Professional Computer.

John Dow demonstrated the TI-Writer and briefly outlined the capabilities of this excellent piece of software from Texas Instruments.

Roger Knupp demonstrated a new program which was written by P.U.G. member Mary L. Gotera called the "Mini-Editor" which uses the Mini-Memory Command Module, a cassette recorder, printer and either the TI 99/4 or TI 99/4A. This program allows you to use your computer like a typewriter and includes editing by cursor on a spreadsheet type of display. To order send \$9.00 to:

Mary L. Gotera
181 Carnegie Ave.
Clairton, PA 15025

MEMBERSHIP CARDS

At the May meeting, membership cards were passed out to all paid up members of P.U.G. This card will be shown for admission to all future meetings and the expiration date on the card will serve as a reminder as to when dues are payable. New members and guests are welcome.

CONTRIBUTING EDITORS

The author of each article in this newsletter will be listed. Please contact the author of the article for further information on specific subjects.

Articles are solicited from all P.U.G. Members and other interested individuals.

The Editorial Staff reserves the right to select and publish articles of general interest to the Group and as space permits.

Please share your programming hints or contribute a review of a new program or a command module.

NOTE: Articles published in the P.U.G. Newsletter may be reproduced if credit is given to the author and Pittsburgh Users Group (P.U.G.)

P.U.G. MAY QUESTIONNAIRE ???

We have had a poor response to the questionnaire in the May newsletter. We need your input to help the Group Officers determine the needs of the Group.

Please mail in your questionnaire or bring it to the June meeting. The results will be tabulated and a report given at a later date.

If you have lost or misplaced the questionnaire, some additional copies will be available at the June meeting.

HELP WANTED

The P.U.G. Officers have had some individuals volunteer to help the Group on various occasions, but no one has outlined what help is specifically needed. The Group will always need the support of its own members to continue to function. Contact any Officer if you feel you can volunteer a few hours a month to help out in these positions:

ASSISTANT LIBRARIANS Will help with the program library, before the meeting.

DEBUGGERS Will review new programs for clarity and completeness.

TYPISTS To copy programs and articles for the newsletter and library.

SET UP CREW To help organize tables and equipment before the meeting.

PE BOX DUAL DRIVES

It seems, according to the reprint on this subject in the May Newsletter, that I can't do what I've been doing for six months.

After pondering for some time the current carrying capacity of the PE Box power supply, and the probable timing and phase relationships involved with dual drives, it seemed to me the only way to tell if it would work was to try it. Surely, the capacity is not grossly excessive.

Succinctly, while I've heard a number of people say it won't work, I know of no one who has tried it and had that problem. (And I watch the TI-99/4 POST in The Source for just such things.)

In normal operation, only one drive at a time will operate. The only time two may run at the same time is on start-up. Whether because the regulator is "cold" on start-up, and therefore able to tolerate a greater than average load instantaneously, or because the specs are limited by the accuracy of regulation (rather than burn-out) I'm not sure. For whatever reason, the problem is more apparent than real. (And replacing a burned-out regulator with one of higher capacity, even if it were necessary, has to be far less expensive than trying to get the same capacity with external drives.) (Richard M. Bies)

SPEAKERS

The P.U.G. is looking for local speakers to address the Group at future meetings. If you are in contact with someone who you feel could present a short speech on an interesting topic to the Group, please notify an Officer of the Group. The speech could be from 10 to 30 minutes in length and can be for the general meeting or addressed to a special interest group after the general meeting.

I feel the criticism of the RAM Expansion re-printed in the May Newsletter requires re-evaluation.

Not that the numbers and specific tid-bits are inaccurate-- as I recall the "trees" are generally accurately described. However, that reviewer missed the "forest"! The RAM Expansion is probably the single most important peripheral for the 99/4, because it doesn't simply expand the RAM. In fact, the 32K RAM Expansion is the main memory of the system. (The 16K console is VDP RAM.)

It is quite true that the RAM Expansion is not useful in console BASIC. Console BASIC is a good environment in which to learn BASIC, and in which to do simple programs. I can't see anyone wanting to develop programs in which expanded RAM would be relevant just using Console Basic, however.

Beyond Console BASIC, the RAM is enabled. True again, there may be certain regions blocked. This is the price of the tremendous ROM capacity on-line. Note that with Extended BASIC, 56K of ROM power is present, without any peripherals. That's a lot of power--recall that the vaunted IBM PC has 44K ROM. (And the more powerful modules are about the same.)

The Bottom line? Users of Multi-plan on both systems report that they have more capacity on the 99/4 than on an IBM PC with 64K. That 64K may not be full of holes, but it apparently is occupied with software which TI keeps in ROM.

As I see it, "The proof of the puddin' is in the eatin'." and LESS MAY WELL BE MORE. (Richard M. Bies)

LOCAL COMPUTER CLUB

The Airport Computer Club, which is located in the Coraopolis area of Pittsburgh, invites all P.U.G. members to attend their meetings or exchange programs. A special rate for P.U.G. members will be \$6.00 per yr.

Their meetings are held the first Sunday of the month at 6:30 p.m. at Robert Morris College, Moon Twp., for information, call Tony Kalezis 262-2427

BY: Ross Sabolcik

TI's new adventure game is Tunnels of Doom. Unlike the Scott Adams adventures, Tunnels of Doom is a graphical adventure. It is very close to D&D in many ways.

The graphics range from 3D when you are walking down a hall, to 2D when you enter a room.

The variety in this game is incredible! There are up to 10 floors, 3 levels of difficulty, 4 types of characters, 30 types of weapons and 50 monsters and magic items!!

The game comes with a module and a cassette. On the cassette are 2 games: "Pennies and Prizes" and "Quest for the King." Pennies and Prizes is an easy game, good for getting used to how the module works. There are no monsters and all you have to do is find several prizes and some pennies.

However, the true game is "Quest" in this game you are trying to find the King before he is executed. You have to fight monsters and open vaults, chests, and doors to find magic items or a map.

Several nice features of this game are that you can travel in parties, so 3 or 4 people can play at the same time. You can choose how difficult and how many levels you want to play. Also, when you kill a monster, you are given experience points. When you get enough points, you move up a level. When you move up a level, you can kill monsters easier and you are harder to be killed. You can carry up to 2 weapons which do a set amount of harm to another creature (wounds) and you and each creature have a number of hit points which show how many hits you can take before you die. I have had this game for 2 months and I have only good things to say about it.

"Tunnels of Doom" is available from Texas Instruments for \$59.95

NEWSFLASH The June issue of COMPUTE! Magazine has articles on using the TI 99/4A with various printers.

Y.M.C.A. COMPUTER CAMP

The Cloverleaf YMCA will have a Computer camp on its summer program. This one week course is tailored for youngsters aged 12 to 16 and will instruct the camper in computer literacy, computer operation, learning the BASIC computer language and how to write interesting programs. Texas Instruments and a Commodore Computer will be used. The program is designed for an individual with little or no prior computer experience. The instructor will be Mr. P. Cunningham.

DAY/DATE: Monday thru Friday
SESSION I - July 18-22
SESSION II - July 25-29
SESSION III - Aug. 1-5
SESSION IV - Aug. 8-12
TIME: 9:00 AM to 5:00 PM MTWT
9:00 AM to 4:00 Friday
LOCATION: Cloverleaf YMCA at the
Newly Remodeled Program
Building
FEE: \$120.00 per person

Contact the YMCA at 653-7115 to make your reservation.

TI EXCHANGE CENTER

In addition to exchanging your defective Texas Instruments calculator, home computer, or learning aid, we also have available for your convenience BATTERY PACKS, CHARGES, AND PAPER for all TI calculators as well as SOFTWARE for the home computer, learning aids, and programmable calculators.

We offer a one-year warranty on all accessory and software purchases for calculators and learning aids, while the warranty on home computer software, accessories, and peripherals is 90 days.

For further information, please call 412-771-8112. Hours are 9:00am to 1:00 and 2:00pm to 4:00pm Monday thru Friday.

TEXAS INSTRUMENTS EXCHANGE CENTER

420 Rouser Road

Three Airport Office Park

Coraopolis, PA 15108 (Moon Township)

OPEN TO PUBLIC

The Andrew Carnegie Athletic Association in the US Steel building downtown Pgh. is now open to the public on Monday, Wednesday, Friday 12:00 noon to 1:00pm 600 Grant St. Green Level. Merchandise must be paid by check or money order. They have some of the lowest prices on TI hardware and software. Phone 391-3976 12 to 1

NEW PROGRAMS

The P.U.G. has received written programs from many sources which need to be copied from the original typed page and stored on disk and cassette for our program library.

These programs may need to be debugged and reviewed before they can be included in the general program library. Please see the Librarian, Pat Dean or the Secretary, John Asmonga at the meeting.

The Library is receiving more requests for programs than it has tapes and disks available to lend out to the members. If you can make a copy of the program that you borrow, our Library can catch up with the demand of the members in record time.

P.U.G. MEMBERS & USERS GROUPS

This newsletter contains the most recent list of the P.U.G. Program Library. Members can copy individual programs at the monthly meeting at the time assigned for the Library 5 p.m. to 6 p.m. or check out a disk or cassette from the Librarian.

Each disk or cassette will have a group of programs as numerically listed (Example: D1 = 10 Programs).

User Groups can order programs as listed on a one for one exchange on DISK ONLY by noting your request on your group stationary and including a copy of your Library of Programs.

All User Groups on the P.U.G. news letter mailing list, please include a copy of your Program Library with your next mailing.

- | | | | |
|----|---------------|------------------|--------------------|
| | D1 BOOGLER | D6 ASPIC | D10 CYBERDICE |
| | D1 CHECKER | D6 BONES | D10 DEFINECHAR |
| | D1 CRYPTOGRAM | D6 COUNTING | D10 FORCE1JOY |
| | D1 KENO | D6 DRAW | D10 GIANTS |
| C1 | D1 KNIGHTOUR | D6 FLAGS | C10 D10 JUMPJACK |
| | D1 ONEARM | D6 LETTERQUIZ | D10 LIFE2TITAN |
| | D1 OTHELLO | D6 SPEAKSPEL2 | D10 PIERINGSQD |
| | D1 ROBOT | C6 D6 SPEAKSPEL4 | D10 TRUCKER |
| | D1 SIMON | D6 SPEAKSPEL5 | |
| | D1 YAHTZEE | D6 SPELL 200 | D11 BALLMATH |
| | | D6 SPELL 33 | D11 CODEOFLIFE |
| | D2 AIRCRAFT | D6 TESTQUEST | D11 CONVERSION |
| | D2 ARTILLERY | D6 TRUEFALSE | D11 FIREBALL |
| | D2 BATTLEFORI | D6 VOCABTEST | D11 NUMCONVERT |
| | D2 CANNON | | C11 D11 SIGMA |
| C2 | D2 CHOPERESCU | D7 ASTEROIDS | D11 STATECAPS1 |
| | D2 LASERWARS | D7 CHIC | D11 STATECAPS2 |
| | D2 NIGHTBLOCK | D7 DOGEM | D11 TRIGTRIANG |
| | D2 SPACESCOUT | D7 EGGWARS | D11 WORDWORLD |
| | D2 SPACEWAR | D7 GOLDRUSH | |
| | D2 STARFIGHT | D7 JAWS | D12 BUMBLEMUSI |
| | D2 TERMITE | D7 NIGHTBLOCK | D12 CHRISTMAS |
| | | C7 D7 SHOOTING | D12 GODFATHER |
| | D3 AUTOBAHN | D7 SPACEJUNK | D12 HOTLUNCH |
| | D3 CAMEL | D7 SWORDS | D12 MUSICDEMO1 |
| | D3 CAPTURE | D7 TRAPSHOOT | C12 D12 MUSICEDIT |
| | D3 CIVILWAR | D7 WAGONWHEEL | D12 MUSICSYN |
| | D3 HAMURABI | D7 XRESCUE | D12 PINKPANTHR |
| | D3 INDIAN | D7 XTICTAK | D12 SEAHORSE |
| | D3 LUNARLAND | | D12 SINEWAVE |
| C3 | D3 OBSTACLE | D8 ALIEN | D12 STILL |
| | D3 ROADRACE | D8 ATTACKER | D12 STRAUSS(1) |
| | D3 SANFRAN | D8 BATLSTAR | |
| | D3 STARTREK | D8 CORNERWAR | D13 BOAT-SONG |
| | D3 TOURING | D8 CRAZYCLOWN | D13 HOLY |
| | D3 WUMPUS | D8 DOGFIGHT | D13 LOAD |
| | | D8 MARSLANDER | D13 MAINSCREEN |
| | D4 CRAZYLINES | C8 D8 REBELPILOT | D13 ORGAN |
| | D4 ELIZA | D8 RUSSIANWAR | C13 D13 PUPPY-TOWN |
| | D4 FRAMEUP | D8 SPACEBATT | D13 R-BOOGIE |
| C4 | D4 MASTERMIND | D8 SPRITER | D13 VENUS |
| | D4 MEMFULL | D8 TWRHANOI | D13 W-BOOGIE |
| | D4 MINER | D8 UPSCOPE | |
| | D4 MOTORCROSS | | D14 ADDRESSES |
| | D4 REBOUND | D9 CALENDAR | D14 CHECKBOOK |
| | D4 SECRETARY | D9 CALENDARPT | D14 CHISQUARE |
| | D4 UFO | D9 GRAPHBARS | D14 CPM |
| | | D9 HOMESEC | D14 EFILE |
| | D5 COUNTDUCKS | D9 LIBRARIAN | D14 ESTATE |
| | D5 GUESSPRESI | D9 MARKET | D14 EWORD |
| | D5 LIFEEXPECT | D9 MORTAGE | D14 FINANCIALM |
| | D5 LOWCASMATH | C9 D9 OVERFLOW | C14 D14 HOUSECOST |
| | D5 NAMETREES | D9 RULE78 | D14 INVENTORY |
| C5 | D5 SAYNUMBER | D9 TEXT | D14 LINEARREGR |
| | D5 TELLTIME | D9 TEXTEDITOR | D14 LOANANALYS |
| | D5 TYPETEACH | D9 TIMECLOCK | D14 PAYMENT |
| | D5 WORDQUIZ | D9 WINDCHILL | D14 PERT |
| | D5 WORLDBIRDS | | D14 RECEIPTEXP |
| | | | D14 STOCKRECOR |
| | | | D14 STOCKTRANS |
| | | | D14 STOCKTREND |

PITTSBURGH USERS GROUP PROGRAM LIBRARY JUNE 1983

Each group of numbers represents the programs listed.
 (Example: D1 = 10 Programs on one disk).

SOME PROGRAMS FROM OTHER GROUPS

```

100 REM THIS PROGRAM WILL PLAY AND PRINT THE
FREQUENCIES FOR 2 ADDITIONAL OCTAVES OF BASS NOTES ON
THE TI 99/4A. USE THEM AS SHOWN IN LINE 160.
105 REM BY JIM PETERSON REPRINTED IN THE SYDNEY NEWS
DIGEST FROM TEXNET.
110 DEF R(X)=INT(X+.5)
120 F=1652
130 FOR J=1 TO 25
140 READ M#
150 PRINT M#;" =";R(F)
160 CALL SOUND(500,22000,30,22000,30,F,30,-4,0)
170 F=F/1.059463094
180 IF J<>12 THEN 200
190 RESTORE
200 NEXT J
210 DATA A,B flat,B,C,C#,D,E flat,E,F,F#,G,A flat,A
    
```

```

100 REM THIS PROGRAM PLAYS TREMOLO NOTES. CHANGE
VALUE IN LINE 150 TO 1.01 OR 1.03 FOR MORE OR LESS
TREMOLO.
105 REM ST. JAMES INFIRMARY BLUES - JIM PETERSON
110 FOR J=1 TO 60 STEP 2
120 READ A,B
130 FOR L=1 TO A
140 CALL SOUND(-99,B,0)
150 CALL SOUND(-99,B*1.02,0)
160 NEXT L
170 NEXT J
180 DATA 2,330,2,294,4,330,4,294,4,330,4,294,4,262,B,220
190 DATA 2,330,2,294,6,330,2,294,4,330,4,262,12,247
200 DATA 2,294,2,262,4,294,4,262,4,294,2,330,2,294,4,
262,B,220
210 DATA 4,262,4,262,4,220,4,262,4,247,16,220
    
```

```

100 REM SINE-WAVE SPRITE EXTENDED BASIC
110 REM BY: BOB EAGLE
120 REM COPYRIGHT 1983, CIN-DAY USER GROUP
150 CALL CLEAR
160 CALL MAGNIFY(2)
170 DIM A(30)
180 FOR B=1 TO 30
190 READ A(B)
200 NEXT B
210 DATA 0,-4,-8,-12,-16,-20,-24,-28,-24,-20,-16,-12,-8,-4,0,0,4,8,12,16,20,24,28,24,20,16,12,8,4,0
220 CALL SPRITE(#1,42,5,89,120)
230 CALL JOYST(1,C,D)
240 CALL KEY(1,F,G)
250 IF F=18 THEN 260 ELSE 230
260 CALL POSITION(#1,H,I)
270 FOR J=1 TO 30
280 IF I>239 THEN I=1
290 CALL LOCATE(#1,H+A(J),I+J)
300 NEXT J
310 GOTO 230
    
```

```

100 REM TIDROME LIBRARY E301- REPRINTED FROM SYDNEY NEWS DIGEST
110 CALL CLEAR
120 PRINT ::" ***ARITHMAGRAPHS***":
140 PRINT " DEvised BY MIKE D'REBAN"
150 PRINT "ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ":
160 PRINT " SYMBOLS REPRESENT NUMBERS!"
170 PRINT " TRY TO FIGURE THEM OUT!":
180 CALL CHAR(48,"00103B10101010")
190 CALL CHAR(49,"00103B210102B")
200 CALL CHAR(50,"AASSAA55AA55AA55")
210 CALL CHAR(51,"FF010204081020FF")
220 CALL CHAR(52,"F0F0F0F0F0F0F0F")
230 CALL CHAR(53,"F0F0F0F0F0F0F0F")
240 CALL CHAR(54,"000103070F1F3F7F")
250 CALL CHAR(55,"80C0E0F0FBFCFEFF")
260 CALL CHAR(56,"003B3B003B3B")
270 CALL CHAR(57,"003030200B1B3B")
280 RANDOMIZE
290 A=INT(RND*1000)+1 360 H=B+X
300 B=INT(RND*1000)+1 370 A%=STR$(A)
310 X=INT(RND*150)+1 380 E%=STR$(E)
320 C=A+B 390 LE=LEN(E%)
330 E=A*B 400 F%=STR$(F)
340 F=B*X 410 LF=LEN(F%)
350 G=E+F 420 G%=STR$(G)
430 LG=LEN(G%)
440 H%=STR$(H)
450 LH=LEN(H%)
460 LA=LEN(A%)
470 B%=STR$(B)
480 LB=LEN(B%)
490 I%=STR$(I)
500 LX=LEN(X%)
510 C%=STR$(C)
520 LCL=LEN(C%)
530 M%="+ "
540 N%="- "
550 O%="- X "
560 PRINT TAB(1-LA);A;TAB(8);O%;TAB(14-LB);B;TAB(18);M%;TAB(26-LE);E
580 PRINT :TAB(3);"+";TAB(13);"+";TAB(24);"+ "
600 PRINT :TAB(1-LB);B;TAB(8);O%;TAB(14-LX);X;TAB(18);M%;TAB(26-LF);F
620 PRINT : "
640 PRINT :TAB(1-LC);C;TAB(8);O%;TAB(14-LH);H;TAB(18);M%;TAB(26-LG);G
660 PRINT : "
675 PRINT : "USE FCTM 'CLEAR' FOR ANSWER,"
676 PRINT "THEN TYPE 'RUN' FOR NEXT."
680 GOTO 680
    
```

```

100 REM MUSIC FROM STRINGS
110 REM CREDITED TO
120 REM TI SYDNEY HOME
130 REM COMPUTER USERS
140 REM GROUP
150 DISPLAY AT(12,6)ERASE ALL:"MUSIC FROM STRINGS"
160 A%="IAIEIKIKIKIKIEIAIEIAIE6KIKIPUIUIUIUI_1_I_U&P_I_XIUUIUIUIPIKIKIKIEIEIEIE
IPKIIIEIAIAIKIPIUIPIEIIISK"
170 FOR A=1 TO 98 STEP 2 :: CALL SOUND(VAL(SEG$(A%,A,1))#200,(ASC(SEG$(A%,A+1,1))-36)/10.0):: NEXT A
180 DIM B(28):: C=262 :: FOR D=0 TO 27 :: B(D)=INT(C*1.059463094^D):: NEXT D ::
B(28)=32000 :: B%="cKcKcMcJaKcMcOcOcPeOaMcKcMcKcJgK"
190 FOR F=1 TO LEN(B%)/STEP 2 :: CALL SOUND((ASC(SEG$(B%,F,1))-95)#120,B(ASC(SEG$(B%,F+1,1))-64),5):: NEXT F :: GOTO 160
    
```

Questions and Answers About the Foundation 128K Card

- Q. I don't program at all. I just use programs like Multiplan™ and TI-Writer™. I hope that if I buy the 128K card, I'll be able to work on spreadsheets and documents that are four times larger than those that fit in 32K. Is that how it works?
- A. Yes, but using those particular programs. You see, those programs were written to use only 32K. We have no way of modifying them to use 128K. Of course, similar programs could be written to use all the available memory, and then you would have exactly what you want.
- Q. What will happen if I plug in a 128K card and try to run Multiplan, TI-Writer, or something similar?
- A. It will behave just as if you only had a 32K card. For example, if you run Extended Basic and type "SIZE", the computer will tell you that you have "11840 BYTES OF STACK FREE, 24488 BYTES OF PROGRAM SPACE FREE."
- Q. Why is that? You'd think that the computer would be able to tell how much memory is available and to use all of it.
- A. Well, the TI computer can only address 32K bytes of expansion memory at a time. The way that Foundation provides 128K is by making it look to the computer like four separate 32K cards, only one of which is turned on at a time. This technique is called "bank switching".
- Q. Would you summarize the reasons for getting a 128K card instead of a 32K card?
- A. The best reason for getting the 128K card is that you write programs and you need more memory than 32K. If you don't write programs yourself, the best reason for getting a 128K card is that you want to be able to take advantage of large-memory programs as they become available. We are working on several ourselves, and we are also talking to several third-party software houses about writing and adapting software to use the extra memory.
- Q. What kind of programs are you working on?
- A. Well, the first and most important is called a "disk emulator". It allows you to read and write files from memory as if they were on a very fast disk. It provides a new device called "DSKX". You can OPEN files on it then INPUT and PRINT to them, all at memory speeds.
- Q. It sounds like this disk emulator is pretty important. Are you sure it can be done in the time frame you're talking about? Also, how much will it cost?
- A. It will cost less than forty dollars, and it will be available this summer. It's a very straightforward piece of software; nothing really exotic is involved.

Send check or money order to:

Foundation
74 Claire Way
Tiburon CA 94920

128K card(s) @ \$220
DSR option(s) @ \$ 10
Or call: (415) 388-3840

Q. When will that be available?

A. This summer. I should mention that in order to run the disk emulator, you need to specify that you want the "DSR option" when you order your 128K card. This costs an extra \$10. It provides several extra chips on the board that support what is called a "Device Service Routine".

Q. It sounds like I always need the DSR option. Is that true?

A. If you're a really excellent assembly-language programmer who already has a Mini-Memory™ module, you could get along without it. But otherwise you should definitely get it.

Q. I already have a 32K card. Can I use the 128K card in addition to it?

A. Unfortunately, the answer is no. There is no way to turn off the 32K card, so it always "collides" with the active bank of the 128K card. If you want the 128K card, you'll have to put an ad in the paper and sell your 32K card.

Q. What other programs will be available?

A. We are talking to several companies about spreadsheet programs, word-processing software, and games. Also, notice that with just the disk emulator you can do many interesting things. For example, it's incredible how much faster you can back up a disk if you only have a single disk system.

Q. How do I use the 128K card with Basic?

A. Well, again you should get the DSR option. It comes with a little program called MEM96 that lets you use 96K of add-on memory as if it were a relative file of 64 byte records. Meanwhile, the remaining 32K is available as a regular 32K expansion memory.

Here's a sample Basic program:

```
1. OPEN #1: "MEM96"  
2. A$ = "This is a message."  
3. PRINT #1, REC 10 : A$  
4. INPUT #1, REC 10 : B$  
5. PRINT B$
```

The above program will print "This is a message." If you put all your data in MEM96, you can access it at memory speeds while saving all the space it would take up in your program. By the way, the 96K pseudo-file "MEM96" is available to regular Basic as well as Extended Basic, which is a distinct advantage.

Q. Well, even if I remove all data, my BASIC programs are still too big. Can 128K help?

A. Sure. When the disk emulator comes out, you'll be able to copy programs from disk into the disk emulator. Under Extended Basic, you can use "RUN" as a program statement to execute programs on the pseudo-disk. So effectively, you'll be able to have 128K worth of programs in memory at the same time; you'll just have to break them up into several programs that chain from one to the next.

FROM KEITH IN CHICAGO

The latest news from the C.E.S. show in Chicago on TI is something that will make a lot of people happy. We will see some of the old familiar names like IMAGIC, FOX, SYNAPSE and maybe ATARI running on TI. These are on TI cartridges, but with their programs. (They were playing DEMON ATTACK on TI at the show) We just have to wait until Sept. or Oct. to see them in the stores. Also at that time, we should see the NEW 99/8 TI COMPUTER. It will have 64K of useable RAM, and 16K of GRAPHIC RAM, which brings the total to 80K. It also has 248K of ROM and will be 5 times faster than the 99/4A, so you will have to tell it to slow down to enable you to play the games on it. We will also see a new printer for TI. It's a BROTHER, and the price is around \$200. Look for a mini WIN-CHESTER disk also.

The main topic of discussion at the show was the problem of 3rd party software developers and the rights TI wants with their cartridges. A new product to get around this was shown by a software developer named ROMOX. They have a peripheral that plugs into the speech port, and a module slot on the top, (Just like the TI) to insert their cartridges. The price was \$39.95. This should make more non TI sanctioned modules work. Needless to say TI was not too thrilled with this. There were also more new manufactures with joysticks for the TI, and a selection of 15 games on cassettes from 99er-WARE (99er magazine people) for a price of \$9.00 each.

I hope to have more information at the meeting, and some literature to pass out. Chuck Percherke

BEGINNER'S BASIC

We will have a demonstration on the new TI software cassette PHT 6067 BEGEMNER'S BASIC TUTOR. It will be in the basic class room for those who wish to see it demonstrated.

CAMPING & COMPUTERS

The Allegheny Trails Council and Texas Instruments have a camping week for girls and boys (minimum age 10 years) including computer instruction, swimming, rowing, canoeing, tennis, volley ball, softball, riflery, archery, crafts and games, plus many more camp activities. It will be held at Egle Explorer Base on Heritage Reservation near Farmington, Pa. July 3-9th. Choose your level of interest. Cost for one week is \$140. which includes lodging and meals. For more information write to Allegheny Trails Council, B.S.A. Flag Plaza Pittsburgh, Pa. 15219 or call (412) 471-2927

LEARN BASIC

Steve Miller is offering classes to people in the South Hills area for a two hour, four week course. Price is \$40.00. For more information call 221-1894

TYPE IT IN

Check out the JUNE issue of the magazine ELECTRONIC FUN with COMPUTERS and GAMES, it has a program for you to type in called DRAGON MAZE. We hope to keep the TI name in this and other magazines when they review computer programs.

FROM THE TREASURER

A lot of members memberships expire the month of JUNE, please check with Mike at the meeting.

ASSEMBLY LANGUAGE

The P.U.G. Assembly Language Group has been meeting before the scheduled P.U.G. meeting at Community College of Allegheny County, South Campus between 4-6 p.m. and also on the first tuesday of the month at Western Psychiatric Institute & Clinic in Oakland. Contact John Dow for details.

AN ASSEMBLY LANGUAGE SUBROUTINE
By John Dow

In the last newsletter I tried to explain what assembly language is. This time, I include a complete example of a subroutine written by Jerry Rowell, past VP of our group and one of the more fluent assembly language programmers. The routine was written using the Dow Editor/Assembler, so the syntax is nonstandard in that there is a colon after each label and semi-colons are used instead of commas. The routine is called as follows from Basic:

```
CALL LINK("SORT",N,A())
```

where N is the number of (numeric) values in the array A to be sorted and where SORT has been entered into the REF/DEF table pointing to the first location.

```
000 LWPI >70BB
004 CLR R0
006 LI R1;1
00A BLWP @NRF GET SIZE OF ARRY
00E MOV @FAC;R1
012 MOV B R1;R2
014 SWPB R2
016 CI R2;>41
01A JNE L0
01C SWPB R1
01E CLR R2
020 MOV B R1;R2
022 SWPB R2
024 LI R4;100
028 MPY R4;R2
02A MOV R3;R2
02C MOV B @>B34C;R0
030 SWPB R0
032 A R0;R2
034 MOV R2;@N
038 JMP L1
03A L0 : SWPB R1
03C CLR R2
03E MOV B R1;R2
040 SWPB R2
042 MOV R2;@N
046 L1 : SRL R2;1
048 CI R2;0
04C JNE NXT
04E B #R11
050 NXT: MOV R2;@MB
054 MOV @N;R3
058 S R2;R3
05A LI R0;1
05E MOV R0;@JB
```

```
062 L2 : MOV @JB;@IB IB=JB
068 L3 : MOV @MB;@LB
06E A @IB;@LB LB=IB+MB
074 MOV @IB;R0
078 LI R1;2
07C BLWP @NRF
080 LI R4;FAC
084 LI R5;XIB
088 FIL: MOV #R4+;#R5+
08A CI R5;>712A
08E JNE FIL
090 MOV @LB;R0
094 BLWP @NRF
098 LI R7;FAC
09C LI R8;XIB
0A0 LP : MOV #R7+;R4
0A2 MOV #R8+;R5
0A4 C R5;R4
0A6 JLT L4
0A8 JNE LP0
0AA CI R8;>712C
0AE JNE LP
0B0 CB R5;R4
0B2 JLE L4
0B4 LP0: MOV @IB;R0
0B8 BLWP @NAS
0BC LI R4;FAC
0C0 LI R5;XIB
0C4 LP1: MOV #R5+;#R4+
0C6 CI R5;>712A
0CA JNE LP1
0CC MOV @LB;R0
0D0 BLWP @NAS
0D4 S @MB;@IB IB=IB-MB
0DA MOV @IB;R6
0DE CI R6;0
0E2 JGT L3
0E4 L4 : INC @JB
0E8 C @JB;R3
0EC JLE L2
0EE JMP L1
0F0 FAC: EQU >B34A
0F2 NRF: EQU >6044
0F4 NAS: EQU >6040
0F6 N : EQU >711B
0F8 MB : EQU >711A
0FA JB : EQU >711E
0FC IB : EQU >711C
0FE LB : EQU >7120
100 XIB: EQU >7124
```

Load the subroutine at locaton 7C00.

FOR SALE

New SPEECH SYNTHESIZER \$75.00
New EDITOR/ASSEMBLER manual \$10.
TOMBSTONE CITY module \$25.00
HOUSEHOLD BUDGET MANAGEMENT \$25.
Call Bob Proski 751-4778

1 DISK CONTROLLER (old style) and
DISK MANAGER MODULE \$60.00
Also CENTRONICS PRINTER W/STAND
and CABLE. Rick Bucci 262-4390

TAPE RECORDER for sale RED 462-3734

TEACH YOURSELF BASIC \$10. TE II \$30.
SPEECH SYNTHESIZER \$75. LOGO \$48.00
SPELL WRITER \$10. Chris 885-5692

We will provide the newsletter for
a \$5.00 fee to those who reside out-
side the local area and thus are un-
able to attend the meetings but wish
to "stay in touch".

The INTERNATIONAL 99/4 USERS GROUP
has just put out the first issue of
ENTHUSIAST 99 a magazine for TI
computer owners. It is free to thier
members, others may acquire it for
\$2.50. Write P.O. Box 67
Bethany, Ok. 73008

MORE FOR SALE

Call 481-4648 and ask for John to
take advantage of the special prices
on the following items:
GE Cassette Recorder \$25., RF Modu-
lator \$10., TI Joysticks \$12.50,
At \$10. each: Wampus, A-Maze-ing,
Mind Challangers, Diagnostic, and
Hangman; Plastic Storage Box.
At \$15. each: Video-Graphs, Football.
At \$20. each: Tombstone City, Parsec,
TI-Invaders, Personal Record Keeping.
At \$25. each: Munchman, Household
Budget; and for \$30. Adventure (cass.)

The following books will be avail-
able for sale to P.U.G. Members at
the next meeting:

- 10- "Smart Programming Guide for
Sprites" by Miller Graphics.
Reg. \$7.50 P.U.G. Price \$5.00
- 5- "Editor Assembler" Manuals
Reg. \$14.95 P.U.G. Price \$11.00
(A must for Mini-Memory Owners)
- 2- "Introduction to TI Basic" by
Don Inman, etc.
Reg. \$12.95 P.U.G. Price \$11.00
- 5- Boxes of Diskettes, 10 in a box
P.U.G. Price \$20.00 per box

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