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WASHINGTON D.C. AREA
TI 99/4 USER'S GROUP

NEWSLETTER

VOL #1

DECEMBER, 1982

ISSUE #1

Bill Whitmore, President

Richard D. Sturgell, Editor

NEXT MEETING - THURSDAY DECEMBER 9 7:00 PM
AT THE

SHERATON WASHINGTON HOTEL

2660 WOODLEY RD NW JUST OFF CONN AVE
IN THE

DELAWARE SUITE

The SHERATON WASHINGTON HOTEL is located at the corner of Connecticut Ave. and Woodley Rd.N.W. in Washington, D.C. The METRO -REDLINE stop at Woodley Park-Zoo Station is only a short walk to the 24th Street entrance to the Hotel. Parking is available on the street or in The Hotel Parking Lot. The best entrance to the Parking Lot is from Calvert Street. Rates for parking are: 1-2 hours \$3.00, 3 hours \$5.00. Dining at The Hotel Coffee Shop for those that arrive early will find the Menu priced from about \$7 up. Also The Americus Room - Gourmet Dining \$15 up.

The DELAWARE SUITE is located on the Lobby level - ask any of The Hotel employees for directions if required.

Merry Christmas - Happy New Year

Help - We need a meeting place somewhere in Maryland. If you know of a school, Church, etc near the Beltway in Maryland please check the availability on the second Thursday of any month and charges if any for use of the room.

BOOK REVIEW

Obviously there are many books available for the computerist to buy. There are books on computer architecture, computer languages, computer games, how to make money with your computer, books that list programs for the home, etc. For the experienced computerist the choice of which books to buy may not be a very tough one. However, for the inexperienced computerist, the decisions may indeed be a very tough one. From time to time your editor will have book reviews. Anyone who wishes may also submit a review for publication. In fact I really encourage you to share with others your opinion about books you have purchased.

The book I will review is one I personally have found to be very useful. The book is BASIC Computer Programs for the Home. The book is by Charles D. Sternberg. Almost every program in the book can be entered in the TI 99/4 and 4A without altering the basic format of the program. The programs will need the tabs changed to fit the TI screen width. The book is divided into the following chapters:

- Home Financial Programs
- Automobile Related Programs
- Kitchen Helpmates
- Scheduling Programs for Home Use
- List Programs for Every Purpose
- Miscellaneous Programs for the Home
- Tutorial Programs for Home Use
- Conversion Programs
- Recreational Programs
- Hobbyist's Diaries

Each program listing is preceded by a description, functions of the program, instructions for use, data entry, output description, and comments. After the program listing, the author gives several examples of the expected output. The author lists a table of the major symbols he uses and a description. This table can be very useful in analyzing the logic in the program.

As you can see from the above list most of the home use type programs are included in the list. The book includes programs on check book balancing, mortgage projections, household expenses, household budgets, trip planning, diet planning, supermarket list, tv scheduling, addresses, utility health records, weight control, addition, subtraction, multiplication, division, and more. Many of the programs are written using data statements to input the data for the program. When the data used is extensive, the use data statements is an efficient programming technique. Sternberg uses search techniques to sort the data in the program. These search techniques can be used in programs you may write yourself.

If you can only afford to buy one book, I feel this should be that book. There is so much that can be learned by entering these programs into your computer and by analyzing the techniques Sternberg uses.

The book sells for \$11.95 and may be purchased at most of the computer stores. I know from personal experience that Chafitz in Rockville and Wills Computer Store in Marlow Heights carry the book.

IDEAS FROM OTHER CLUBS:

Each month we receive newsletters from other clubs. We appreciate hearing from these clubs. We all grow in knowledge in this sharing process. No publication can survive without contributors. We need contributors. Several club members contribute ideas almost every month and we appreciate their efforts. We you also contribute ideas? I hope so. We need you.

How do you contribute ideas. Ideas may be submitted hand written, typed, on tape or disk if you use print statements, and when TI's word processing is available through that program. Like any other publication there are deadlines that must be met. Ideas submitted by the 10th of month will be included in the next month's newsletter. Ideas submitted later than the 10th may be included, but there are no guarantees. Any items of an emergency nature will be included up the time of printing. If you have any questions, please feel free to contact me.

On this page and the next several pages are ideas received from HUG (Houston Users Group) and ROM (Users Group Of Orange County). We thank them for sharing with us.

HUG

RANDOM NOTES

From the TI Impact Printer Users Guide: "In general, the computer performs and sends a PRINT statement to the printer the same way it does to the display screen. However, data are not printed until the computer encounters a PRINT statement with an ending comma or semicolon, until the file is closed, or until the record exceeds the length specified in the OPEN statement. For more information on the print-list clause, see the 'BASIC Reference Section' of the Users Reference Guide."

```
Example: 100 OPEN #1:"RS232"
          200 PRINT #1:"THIS IS A PRINT STATEMENT."
          300 CLOSE #1
          400 END
```

```
Example: LIST "RS232" (Lists the entire program)
          LIST "RS232":100-300 (Lists lines 100-300)
```

The HUG receives newsletters from other groups each month, these are available at the meeting for your information. We usually have newsletters from the 99/4 Users of America, Australia National News Digest, Chicago 99/4 UG, Cin-Day UG, MSP UG, Portland Users of Ninety-Nines, Washington DC Area 99/4 UG, JSC UG, TI-Home (England), the Dallas UG, and the International Users Group. By the way, we have received word that the International Home Computer Assoc. in California has started covering other computers though they say they will still cover the 99/4 too.

TI BASIC does not have a SIZE command, however, you can approximate this in the following manner: Enter the program, but do not use lines 1 & 2. Add these lines to the program -

```
1 A=A+8
2 GOSUB 1
```

Then RUN the program, after a few seconds the program stops running and the message "MEMORY FULL IN 1" is displayed. Type the following imperative command: "PRINT 14,800-A;"BYTES USED":A;"BYTES REMAINING". When you press enter, the approximate size will be displayed. Be sure and delete lines 1 & 2 before running your program.

ROM

Printer Woes?

Are you tired of having your programs hang up because you forgot to turn on the printer? Here is a routine to fix that..

```
100 OPEN #1:"RS232",OUTPUT
110 PRINT "TURN ON PRINTER"
120 PRINT #1
130 CALL HCHAR(23,3,32,15)
```

First it prints TURN ON PRINTER on the screen. Then it tries to print a space on the printer.

If the printer is not turned on, the program will hang up at line number 120, and the message will stay on the screen. When you turn the printer on, the program will erase the message and continue.

If the printer was already on, the message will just flash briefly on the screen and then be erased immediately.

Tape Users

Extended BASIC has an undocumented, but implemented, feature of interest to users of cassette tape systems. RUN "CS1" can be used as either a command or a statement. By using a statement such as: 560 RUN "CS1" programs can be "chained", i.e. one program can call another program. The screen will give the normal instructions for loading a tape and when the program is loaded, the computer will automatically start running the program!

This is equivalent to the commands:

```
>OLD CS1
>RUN
```

but it is under program control.

32K RAM Users

CALL LOAD(-31878,0) does not disable sprite motion in Version 110 of Extended BASIC, and consequently does not speed up program execution. TI does not know which byte will disable sprite motion. When they find out, they will publish it in the TI User's Newsletter.

In Extended Basic, finding the minimum of two numbers or variables is easy with a built in routine: MIN(X,Y) returns the lower of X or Y.

The following is a clever way to obtain the minimum of two numbers in TI-Basic (contributed by Wes Irby):

```
200 MIN=X+(X-Y)*(X>Y)
```

The variable MIN will be equal to the lessor of X or Y (or equal to X if, X=Y). Note that:

<u>if</u>	<u>(X>Y)</u>	<u>MIN</u>
X<Y	0 (false)	X
X>Y	-1 (true)	Y
X=Y	0 (false)	X

PROGRAMMING HINTS

This 'poke' program can be used to insert a value into an array. This is helpful if data is being entered from the keyboard and some data was left out of the correct sequence.

```

100 REM <<'POKE' ROUTINE FOR ARRAY >>
110 REM << BY: JOHN G. KORMAN >>
120 REM << DATE: JULY 25, 1982 >>
130 REM << POKE ROUTINE >>
140 M=10
150 DIM E$(10)
160 FOR J=1 TO M
170 READ E$(J)
180 IF E$(J)=" " THEN 200
190 NEXT J
200 L=J-1
210 REM ** PRINT ARRAY **
220 OPEN #1:"RS232/S.BA=9600.DA=8"
222 PRINT #1:"RUN"
230 FOR J=1 TO L
240 PRINT #1:E$(J);" ";
250 NEXT J

260 PRINT #1:
270 DATA A,B,C,D,E,F," "
280 REM // 'POKE' ROUTINE //
290 INPUT "POKE BEFORE # ":B
300 PRINT #1:"OLD #=";B;"; VALUE AFTER INSERT:=";E$(B)
310 L=L+1
320 FOR J=L TO B+1 STEP -1
330 E$(J)=E$(J-1)
340 NEXT J
350 PRINT #1:"ENTER INSERT VALUE: ";
360 INPUT E$(B)
370 PRINT #1:E$(B)
380 REM << PRINT NEW ARRAY >>
390 FOR J=1 TO L
400 PRINT #1:E$(J);" ";
410 NEXT J

```

```

RUN
A B C D E F
OLD #= 4 ; VALUE AFTER INSERT:=D
ENTER INSERT VALUE: X
A B C X D E F

```

NEW BOOKS.- Prentice-Hall, Englewood Cliffs, NJ 07632 announces the following new future editions:

UCSD PASCAL, A CONSIDERATE APPROACH by David Price. Publication date: January 27, 1983. \$ 18.95 cloth, \$ 12.95 paper back. Especially written with the novice programmer in mind. The book contains many sample programs.

POCKET COMPUTER PRIMER, by Hank Librach. Publication date: December 30, 1982. \$ 16.95 cloth, \$ 9.95 paper back. Written for the TRS-80/Sharp PC1211, it

contains many programs for a variety of disciplines. Intended for class room as well as individual education.

POCKET MAGIC, by Bill L. Behrendt. Publication date: December 30, 1982. \$ 15.95 cloth, \$ 9.95 paper back. It contains 25 intriguing games for the TRS-80/Sharp PC1211. Programs are said to be animated. As an example, one of the programs is called Sky Diving, while a second one plays a game of jacks. A third one deals with a biological warfare game, and so on. (Maurice Swinnen)

MULTIPLE OUTLET STRIPS.- Larry Hughes. I found two good sources for these handy devices. An outlet strip resembles a heavy-duty extension cord, but with a difference: instead of having just one, single female outlet at one end, it has several of them, now almost universally with three-prong outlets. Some strips allow up to twenty appliances to be plugged in. Here are some inexpensive models, which could be put to good use when you have to plug in all those separate boxes the old style 99/4 consists of:

Radio Shack # 61-2620, 4 outlets, with circuit breaker and six-foot cord, \$ 15.95.

Radio Shack # 61-2619, 6 outlets, with circuit breaker, six-foot cord and on/off switch, \$ 21.95.

A best buy is Heathkit # HD-1274 with 12 outlets, a fuse, a twelve-foot cord and an on/off switch for \$ 22.95. Of course, this is a kit and you will have to do some minimal soldering. But you can save yourself a considerable amount of money by spending a couple of hours putting this easy kit together.

MONEYMAKING OPPORTUNITIES:

At the computer show in October we learned that publishers are actively looking for writers. Richard Mansfield, Senior Editor for Compute Magazine, is looking for people to write articles. He said they do not need to be letter perfect. They have on their staff people who can dress up an article. They pay \$50 to \$400 for articles. Jessie Katz, Editorial Assistant for the Robert J. Brady Co., is looking for book writers. If you are interested in either of these opportunities contact the following:

Richard Mansfield
Senior Editor
Compute Magazine
625 Fulton St.
P.O. Box 5406
Greensboro, NC., 27403
(919)275-9809

Jessie Katz
Editorial Assistant
Robert J. Brady Co.
Bowie, MD., 20715
(301)262-6300

CHRISTMAS SPECIALS
FOR TI CLUB MEMBERS

(BUY PERIPHERAL EXPANSION BOX AND ONE CARD AND GET BOX FOR ONLY \$175.00)

PERIPHERALS

PHP 1200 PERIPHERAL EXPANSION BOX	\$185.00
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PHP 1260 MEMORY EXPANSION CARD (32K RAM)	218.00
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NEW - - PARSEC - - -Only \$32.00

THE ABOVE ITEMS AVAILABLE TO TI CLUB MEMBERS. PLEASE CONTACT PETE EDDY ON (703) 631-1744 AFTER 6 P.M. WEEKDAYS OR ALL DAY ON WEEKENDS. MOST ITEMS AVAILABLE AND CAN BE DELIVERED IN TWO DAYS FROM DATE OF ORDER. CALL FOR PRICE ON ITEMS NOT LISTED.



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Dealer inquiries welcome.



FOR SALE:

Ken Bancroft, 29 Blondell Ct., Lutherville, Md., 21093, has the following items for sale:

- PHP1600 TI MODEM \$140.00
- PHP1700 TI RS232
- PHP2200 TI 2200
- Several TI software modules

Ken says the above are in their original cartons. Ken bought his system complete(used) and dosen't need all of the items. Several of the items have never been used. He is interested in trading some of the software items for other software. Ken's telephone number is: (301)252-7294.

Carl Savillo has the following software items for sale:

- SECURITY ANALYSIS \$35.00
- THE ATTACK 25.00
- VIDEO CHESS 50.00
- HANGMAN 15.00
- CONNECT FOUR 15.00
- TUNNELS OF DOOM 45.00
- (CASSETTE)
- TI-INVADERS 25.00
- ADDITION & SUBTRACTION I 30.00
- MULTIPLICATION I 30.00
- NUMBER MAGIC 15.00

Contact Carl at (703)339-6428.

Rebecca Sturgell has the following item for sale:

- HOUSEHOLD BUDGET MANAGEMENT \$30.00

WANTED:

PHP1700 RS232 Acessories Interface with its related manuels. Call Rev. Keith Koch (301)459-6829.

NEW TI SOURCES:

The SOFTWARE STORE in Rockville, Md. is now carrying TI products. The store is located at 842-A Rockville, Pike., Rocville, MD.

SAVE is a mail order house in Atlanta, Ga. You can call their toll free number---800-241-2682---for orders and product pricing information. SAVE accepts VISA, Mastercard, check, or money order. They charge 3% for credit cards. Shipping is prepaid for orders over \$300.00. SAVE's address is 1782 Marietta Blvd., N.W., Atlanta, GA.

FOR SALE - New SIEMENS DOUBLE SIDE DISK DRIVE For The PERIPHERAL EXPANSION BOX. You can now have up to 250K storage per diskette. \$275.00

**Wm. Whitmore
(703)777-4647**

Box 267

Leesburg, Va. 22075

VA res add tax

The next four pages are more listings of club library programs.

DISK: B27-BKUP

Comments by: Oscar Farah 2 September 1982

1. Program: COLORCRYND File Size: 22 Sectors.

Language: TI BASIC

Description: This a coloring program which draws 8x8 pixel-blocks. The arrow keys are used to direct the cursor over the the screen. The color of the trace can be changed as well as the background screen color.

Comments: In the original program, the instructions included in the program stated that to change the colors, you had to push the "shift key" followed by the color code of your choice (or "s", followed by the color of your choice); a number of attempts to change the color were not successful. A study of the program revealed that the key to push in place of the "shift key" is the "B" key followed by the color code. Additionally, on the 99/4A, the down key would not work. The copy on the above disk was corrected to permit its use on the 99/4A and the instructions modified to indicate the correct procedure for changing colors.

As for the program itself, it is quite entertaining, just the right thing for winter evenings. The designs/pictures created can be saved on Disk only, and, unlike the 99er crayon program in Assembly language, more than one file can be stored on one disk! Note, however, the recording procedures requires 3 minutes! (180 seconds!!). Another record for TI Basic!

2. Program: COLORCRYNT File Size: 20 Sectors.

Language: TI BASIC

Description: This is the same program as "COLOCRYND" above except that this one permits saving/loading from cassettes.

Comments: Errors described above were also corrected.

3. Program: ELEM-ARITH File Size: 21 Sectors.

Language: TI BASIC

Description: This is a program for very small children that teaches (1) Counting, (2) Addition, (3) Subtraction. Problems in the three subjects are given and the student must type in the answer.

Comments: The program requires that the student be able to read or be assisted by an adult. The graphics are simple but effective. "Display at" commands could help speed up the program, but I am not sure that a child would like speed. I am sure, however, that music, if added would make the program more interesting to the child.

4. Program: FIRSTADDTN File Size: 11 Sectors.

Language: TI BASIC

Description: This program is also for small children that can read. it teaches addition only.

Comments: The child must enter the sum of two numbers. Red dot clusters representing the two numbers are displayed to permit the child to count them. In my opinion, a better choice of colors would help this program.

5. Program: KNIGHTS File Size: 13 Sectors.

Language: TI BASIC

Description: This program is for a game similar to the popular game "MASTERMIND", where, the sequence of a group of letters, randomly ordered by the computer must be found.

Comments: This game does not even begin with a "CALL CLEAR" statement, is text only (black letters on green background), with no sound except for input BEEPs from input statements. Otherwise, if you like MASTER-MIND, you could like this one.

6. Program: KNIGHTTOUR File Size: 29 Sectors.

Language: TI BASIC

Description: The object of this game is to move the knight (of chess) on a chess board and visit all the squares without visiting the same square twice.

Comments: The game is very well done, the graphics are good, music is good, the screen displays are excellent and the game quite challenging.

7. Program: MEMORYMAZE File Size: 33 Sectors.

Language: TI BASIC Special Equipment: Joysticks

Description: In this program, you can choose the length of a maze, which is then generated by the computer. You are shown this maze, and then it is erased and its up to you to find your way out. If you make a mistake and run into the wall, you could be zapped back to the starting point.

Comments: Although the game is quite entertaining, the author spent a lot of time programing the screen to make beleive that "DISPLAY" type statements exist. This results in extra lines of code, which wouldnt be bad, except that the choice of red for background with black letters, suggests that the author may have some form of eye-blindness (or maybe it is me!) The game is quite slow (even for TI-Basic slow!) and can be made into an entertaining game if speeded up.

8. Program: SCRAMBLE File Size: 21 Sectors.

Language: TI BASIC

Description: There are two games in this program:
1 - Scramble
2 - Reverse

In Scramble, you have a choice between two sizes of letter matrices with which you try to construct words. The computer generates the matrices but does not decide whether a word exists. Your score is computed on the different letters you use.

In reverse, the computer generates a randomly arranged sequence of numbers (1-9). The object is to reverse portions of this sequence to get the numbers in ascending order.

Comments: The two games in this program could be entertaining, the addition of sound would definitely improve both games.

VERBOTEN

Hirschy

A two player alphabet game. Players take turns choosing letters of the alphabet. One letter gives you a bonus. Another letter is verboten and erases that players score and ends the round. Players cumulative scores are totalled after each round.

CONSOLE ONLY REQUIRED

PROGRAM LIBRARY

Reminder to the people who are transferring library programs from disk to tape - please be sure to return both tapes and disks at the December meeting. Also, please provide a catalog for each disk that you have transferred to tape. Thank you.

All members are urged to donate their own and public domain programs (no copyrighted programs, please) to the Club library. Share your programs with your fellow Club members. Let others use and enjoy your creations.

To donate programs, put them on a tape or disk with your name on it, and give it to Larry Hughes at a meeting. He will return your tape or disk at the next meeting, or by mail, if you include a stamped, self-addressed envelope.

Catalogs of the program library will be available at the next meeting. Program names that begin with an "X" require Extended BASIC.

GOOD NEWS! New member Ken Geremia has access to a high-speed cassette tape duplicating system and has generously offered to provide high-quality tape duplicates for the cost of the tape alone! Just \$1. Here's how it will work.

First of all, you must be a member of the Club in order to receive programs from the library. To verify your membership, please bring the page of your newsletter that has the mailing label on it. Second, due to the large number of program requests, we ask that everyone please follow the instructions below, exactly. Program requests that do not follow the instructions will not be fulfilled. Third, each member is entitled to receive one copy of each tape.

To receive programs on disk, show your newsletter and give the enclosed Tape/Disk Request Form and initialized disks to an Assistant Librarian. Print on each disk label your name and the disk number that you want copied to it. There is no charge.

To receive programs on tapes, fill out the enclosed Tape/Disk Request Form completely. Before or after a meeting, present your newsletter, the Tape/Disk Request Form, and a check or money order to one of the Assistant Librarians. Make the check or money order out to "Washington DC Area TI 99/4 Users Group" in the amount of \$1 for each tape ordered. No cash will be accepted. You will receive your tapes at the next meeting upon presenting your newsletter, or by mail, if you include a stamped, self-addressed envelope. (Be sure to include enough postage for the number of tapes you have ordered, and use a strong envelope, preferably a padded one.) The Club is not responsible for tapes that are mailed.

Some programs will not appear on the tapes due to one of the following reasons: 1. the program is too big. due to a hardware limitation, Extended BASIC programs larger than 12K cannot be written to tape. 2. the programs reads data files from disk, and thus the program cannot be run on a tape-only system.

The following programs will not appear on tape: XCRZYCLOWN, XKISMET, XAMZNGGRAC, XYOULIGHT.

We need a volunteer to handle the disk-to-disk duplication. Please contact Larry Hughes, 667-3574.

We are trying to provide a unique and valuable service to Club members. Volunteers and suggestions for improvement are most welcome.

(Larry Hughes)

TAPE/DISK REQUEST FORMName _____
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A.C.

Date submitted ____/____/____

Circle the number of each tape/disk that you want, or
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21	22	23	24	25					

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(111882)

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 Envelope enclosed, ____/____/____ Date mailed

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CONSUMER ELECTRONICS

TI Relocating Staffers To Free Space for Mfg.

By STUART ZIPPER

LUBBOCK, Tex. — Texas Instruments' Consumer Group is relocating hundreds of administrative employes to a newly rented facility here to free space for manufacturing.

The area vacated at the main facility reportedly will be used to make the 99/4A home computer, and TI's portable Compact Computer, which is expected shortly (EN, Sept. 27).

Company officials confirmed they had leased the 92,000-square-foot former headquarters of T.I.M.E.-DC, Inc., a freight forwarding company.

The lease was reportedly completed early last week, and by mid-week a large number of TI staffers had vacated their offices and relocated into the T.I.M.E.-DC building. TI did not reveal how many workers would be affected, how many square feet would be freed for manufacturing.

Sources close to the company, however, estimated the number of relocated employes to be "in the hundreds." The workers formerly occupied two of the eight buildings in TI's Lubbock facility. The consumer group occupied a total of five buildings, with TI's Semiconductor group in another three.

Only one of the Consumer group buildings had been dedicated to electronics assembly, with a plastics fabrication shop and TI's consumer product repair center in another two.

According to sources, TI was facing overcrowding in many office areas and an inability to expand manufacturing.

As previously reported, 99/4A production at the main Lubbock plant had already been expanded from one to three lines earlier this year, and 99/4A lines were added to a second plant in Lubbock and to TI's Rieti, Italy, facility. Five other TI plants have begun making various components for the 99/4A (EN, Sept. 27).

The production rate for all plants has been estimated to be about 30,000 99/4A computers per week. TI has declined to comment on those estimates.

Analysts said TI is trying to fill a gap between demand and production rate. That gap was estimated at between 160,000 and 250,000 units for the holiday selling season. Scattered reports from around the country of retailers issuing rainchecks to 99/4A customers added credence to those estimates, the analysts said.

Once the Christmas selling season is over it is expected that the new manufacturing area will also be used to gradually phase in production of the Compact Computer — an entry-level device with lower price and capability than the 99/4A — and a high-end home computer software-compatible with the 99/4A program library.

PRINTER PARALLEL INTERFACE CONNECTIONS:

Connection TI pins 1 thru 9 to the 36 pin printer connector pins 1 thru 9, then TI pin 10 to pin 11, TI pin 13 to 13 and TI pin 16 to printer pin 16.

FOR SALE: One IDS 440 Paper Tiger Printer w/graphics \$450
Phone 301-460-5518 7-9PM I.B.Tice, Rockville, Md.

LOST ISLAND

Mel Rosenquist
Greencastle, Pa.

One to four player game, computer does not play.
You are shipwrecked on a deserted island! You must decide to work on your boat or dig for gold. If you spend too much time digging for gold you are killed in a typhoon! You may trade tools and gold with other players to help you finish your boat in time.

Needs call files(1) and extensive deleting of instructions to work with disk version.

CONSOLE ONLY REQUIRED

MOTOCROSS

Steer your car around the race track using the keyboard to make the car point up, down, right or left. Two levels of difficulty with the second track being very tricky!
Crashing sounds and witty sayings if you hit the wall.

CONSOLE ONLY REQUIRED

ONE CHECK

David Sztain
Van Nuys, Ca.

One player board game in which you try to remove all ones from the board by diagonally jumping over them. Computer does not play or indicate that no legal moves remain.

CONSOLE ONLY REQUIRED

Washington DC T199/4 Users Group

Name _____

Address _____

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Phone _____ Zip _____

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Mail to: JIM HORN, Box 2168, Falls Church, Va 22042

LOGO TIPS #4--While in the TURTLE Mode try to SETCOLOR[number1, number2] where number1=0-15; number2=0-15 and let the Turtle draw rainbows.

LOGO TIPS #5--Try FREEZEing several sprites. TELL one or more to change an attribute (color, shape, speed, etc.) now THAW. Only the sprites you "talked" to will THAW. All others will still FREEZE.

LOGO TIPS #6--In TURTLE Mode characters 33-95 can be placed anywhere on the screen with PUTTILE. However, 96-255 can not be placed in the drawing area of the Turtle, but they can be placed in the bottom section of the screen.

LOGO TIPS #7--The ; in LOGO can be used like REM in Basic or ! in Extended Basic to make remarks in your program.

Rev. Keith G. Koch

BILL WHITMORE
BOX 267
LEESBURG, VA., 22075



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