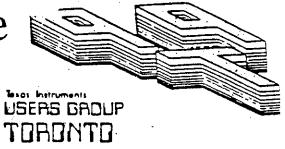
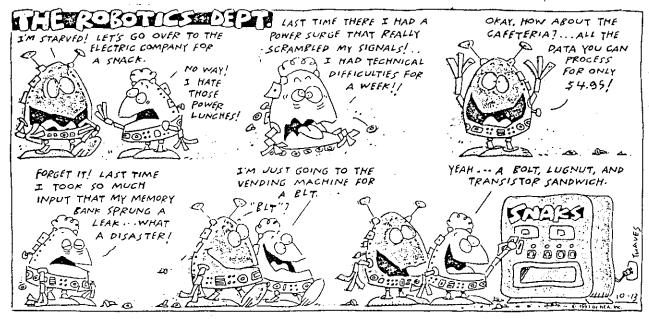
Newsletter Nine-T-Nine March 1992 Issue













FROM: 9T9 USERS GROUP 15 KERSDALE AVE. TORONTO, ONT., M6M-1C9 CANADA

To:



NEWSLETTER 9T9

9T9 USERS GROUP

9T9 USERS GROUP EXECUTIVE COMMITTEE

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Steve Mickelson (657-1494)

MEMBERSHIP FEE'S

FULL MEMBERSHIP
NEWSLETTER SUBSCRIPTION\$30.00 / year

All memberships are household memberships. A newsletter subscription is only for those who do not wish to attend meeting, but wish to receive our newsletter and have access to our library. You are welcome to visit one of our general meetings before joining the group, if you wish more information contact either our president, in writing, at the clue address on the front cover or by phone.

The meetings are usually held on the last wednesday of each month, (exceptions are December's meeting date, usually mid-month and the months of July and August, when there are no meetings. Consult this issue of Newsletter 979 for the date and time of the next meeting, meetings are usually held at NeII Atlen's place. 32 Graysfone Gardens, south of Bloom St. just west of Islington Ave., at 7:30 P.M. from 7:30 - 10:30 PM.

The 919 User's Group supports the Toronto BBS - the 13 tower BBS #(416) 921-2731 - 300/1200/2400 BPS - 24 brs - Sysop - Gary Bowser

MAILING ADDRESS:

9T9 Users Group: 15 Kersdale Ave., Toronto: Ontario, M6M 1C9, Canada

Any business wishing to reach our membership may advertise in our newsletter.
The rates are as follows. (width by height):
FULL PACE (7" x 10") \$30.00
HALF PACE (7" x 5") \$15.00
GUARTER PACE (7" x 2 12")
QUARTER PACE (7" x 2 12")
Please have your ad s camera ready and paid for in advance. For more information contact the editor. Don't forget, that any member wishing to place ad s, may do so free of charge as long as they are not involved in a commercial enterprise.

NEWSLETTER ARTICLES

members are encouraged to contribute to the newsletter in the form of articles, mini programs, helpful tips, hardware modifications, jokes, cartgons and questions. Any article may be submitted in any form by mail or modem, we welcome the reprinting of any article appearing in this newsletter providing credit is given to the author and 919. If more information is required, call the editor. The names, 919, Nine-T-Nine, Newsletter 919, 919 Users Group, and Nine-T-Nine Users Group are Copyright. (c), 1979-1992, by the 919 Users Group of Toronto, canada, all rights reserved.

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TI Nine T Nine Users Group Income Statement December 21st 1001

ASSETS

Nifty, huh? . . . I built

this new drive out of a toaster.

BALANCE SHEET December 31st, 1991

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Cecil G. Chin Treasurer/Office at Large

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TIDBITS

-By Steve Mickelson, President 9T9 Users Group Compuserve 76545,1255; Delphi SMICKELSON; GEnie S.MICKELSON

Last Month's Meeting:

Last month, Gary Bowser gave a report of Fest West '92. Since Gary ran a booth, I don't think he had much time to browse, as would the average attender. I've included a reprint of a report of the fair in the newsletter, for those who missed the meeting. Gary, also, gave a demo of an assortment of software he picked-up in Arizona.

The meeting continued, with a financial report from Cecil, and a report on membership status, from Randy. Andy reported that he would need more software for a feature disk. I gave Andy an assortment of software, from various sources, including Lima U.G. "Frueh Ware", (thanks to Charles, Andy and company!).

Regarding some queries re: the feature disk, I'll reiterate, that the 9T9 Feature Disk, will become available on an irregular basis, based on the availability of new shareware/fairware and Public Domain software. Because the release of software cannot be predicted, it is not possible to determine just how many Feature Disks will become available, and therefore we cannot accept pre-payment for the disks. Andy has assured me that he will provide something for the newsletter, as each Feature Disk becomes available.

9T9 Reunion?

It was generally agreed, by the majority of those present, the 9T9 Users Group will investigate the possibility of sponsoring a re-union meeting of all current and past members of the 9T9 Users Group, in recognition of the tenth anniversary of the club. I was corrected, by Randy, in finding that our club, called the TITO, was founded in 1979. The newsletter, then called "The TITO Trace". The name TITO was changed to 9T9, as Texas Instruments took exception with our group using their copyrighted name.

I've decided to change the copyright notice within the newsletter, to reflect our age. I guess this reunion, could be called the "Lucky 13 Reunion".

Further discussion, brought a consensus among those present, that we would attempt to poll, via telephone, former members, to see how many former members might attend such an event.

Budget concerns:

There is concern with increases in postage, no income from Feature Disks and rising postal costs, as to how the club could maintain the current newsletter exchanges. The cost of printing and postage runs to about \$2.00 per issue per exchange. Multiply this amount by forty exchange newsletters; then multiply that amount by ten issues, (\$2.00 X 40 X 10 = \$800.00), you can see the drain placed on the club's treasury. The executive, therefore must decide in dropping about exchange newsletters, from our mailing lists. We will check to see how much interest amongst our membership exists for each of the exchanges. Hard decisions will have to be made regarding return for the investment, (a lousy criteria, I know, but the club's viability must come first). Therefore, we will drop 10 of the 40 current exchanges.

To readers/exchange officers, who find that they have been dropped from our mailing lists, may I suggest a subscription to the newsletter, if you would like to continue reading our news.

The alternative of increasing membership dues, was rejected, as it was felt unfair to pass on any more expenses to members, in these hard times.

Library listings:

As we are not busy producing Feature disks, I hope to get an updated library listing, from those in charge of the library, of all the current TI-99/4A and Geneve software listings. That's it for this month's Tidbits!

INTRODUCING PRINT'N WEAR

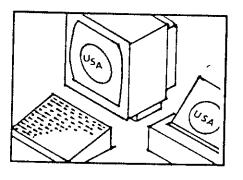
BY FOTOWEAR

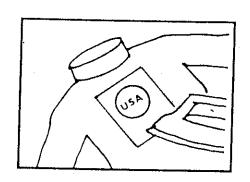
Make your own custom press ons for garments with your Home Computer, Graphics Software and Dot Matrix Printer

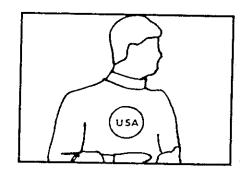
- <u>EASY AS</u> - <u>1</u>

2

3







4 SHEETS 8.5 x 11 \$9.95 10 SHEETS 8.5 x 11 \$17.95 20 SHEETS 8.5 x 11 \$32.95

SEND CHECK OR MONEY ORDER TO THE COMPUTER T-SHIRT SHOP SUITE 157 1050 STATE HWY 35 SHREWSBURY, N.J. 07702

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	4 SHEETS	\$9.95		
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		TOTAL		

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"TI EXPLOITS #3" by Ed Hall (MANNERS)

In my previous two articles, I left out all mention of dates. I need to reconstruct at least approximate dates of some of the major changes to show a trail which displays how long it actually took to create my "MONSTER" TI. Therefore, this article will include a brief history of my portable TI console's early life as well as the recent changes not yet put to paper.

I became a licensed amateur radio operator (ham) back in about 1978 and then a TI enthusiast around 1983. Being a ham operator as well as a TI enthusiast, I was quite interested in linking the two together. In some of my tinkering I used the joystick port as an input/output connection to control devices and eventually to key the transmitter of a hand held transceiver. Then I broke into a new area called packet radio around 1987.

Packet radio was great! It was very similar to phone links such as calling up a BBS or linking to computers via a modem. But, this was over the radio, which added some dimensions. For one, the communication is totally open. This means that conversations can be received by non-participants. Another is the capability to tie more than two stations together. And yet another is the ability to monitor several BBSs without actually connecting, which means that they can let you know if you have mail without you having to call them. This and the once a year event called "Field Day" led me to make several changes to my console over the years.

Field day is a contest weekend spent trying to make the most contacts possible in a 24 hour period, normally from a remote location on generator power. A contact is "talking" to another station and passing location and station type back and forth. For our radio club it means setting up a camp out in a field on Friday night, setting up antennas and equipment on Saturday morning and running the station(s) from Saturday afternoon to Sunday afternoon. This is where packet came in and my need (want) for my portable system.

In order to run truly portable I put a Radio Shack power supply in the console and ran it and a 12VDC television from the cigarette lighter in my car for the 1987 field day event. The other equipment involved was the TEII cartridge and a Boxcar RS232 connected to a packet radio controller hooked to my radio. The following months were spent making changes and about that time I wrote _TI EXPLOITS #1_ which explained some of the work I had done.

After that field day I continued to make changes in preparation for the next year. The first of these changes was to mount a 32K chip in the console. The next item added was a stand-a-lone set of drives I constructed using a Percom controller and three Oki 1/3 height drives. These additions and some of the previous year's components saw me through field day 1988.

Shortly after field day I took the drives apart and made my major changes to the console. I took the Percom board and mounted it inside the console with a 3.5 inch floppy, and while I had the console apart, I mounted the RS232 inside also. This and the addition of a 12VDC 12 inch monitor got me through field day 1989.

About that time my user group (MANNERS) was making final plans for our International TI Expo here in Washington DC, and I knew that I needed (wanted) to add something more before the show. My addition was in the form of a 4 bank Supercart built into the console. This was accomplished with a 32K chip, E/A chip, memory cap, GROM port connector and 5 bank dip switch. I mounted all the components on a small PC board and mounted the board to the back of the GROM port. The final result was a 4 bank Supercart which was able to be turned on and off, an EDITOR/ASSEMBLER chip which was able to be turned on and off, and a RESET switch I added just because. The other two switches were used to swap between the 4 banks of Supercart memory. The switches are mounted so as to protrude through an opening in the vent slots just behind the GROM port. This was the console I showed at the TI Expo in September of 1989.

At the Expo I met Bud Mills from Horizon fame and we discussed the addition of a RAMDISK to the console. This was something already done by Jan Joel Janowski and described in MICROpendium during the recent summer (1989). My approach was somewhat different from the one in MICROpendium in that I used a board supplied to me by Bud Mills which had the edge connector removed and some slots cut so that it fit directly into the console above the main board. I traced out and decided on all my connections and then compared them to those in MICROpendium and most were identical. I did have one thing going for me the Jan Janowski had trouble with. I already had a disk drive in the console so I didn't need to add anything to fool the ROS as he did. Originally I started with 512K, but in late 1990 I added the additional 512K to bring the RAMDISK to 1 Megabyte.

Is my "Monster" finished? Probably not! What's left? Who knows! I would like to have a more portable monitor. Then again maybe I'll just leave it the way it is for a while. Here is a list of all the items thus far: Alpha lock diode to block joystick interference, 12volt DC input capable console power supply, 32K single chip memory expansion, Percom disk drive controller capable of running three drives, 3.5 inch floppy, BOXCAR RS232 with one parallel port and one serial port, built-in 4 bank Supercart/Editor/Assembler system with reset, and 1 Megabyte Horizon RAMDISK.

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HORE COMPUTER GLOSSARY FOR REALISTS
                                                          417-1511-1-20-2-2
                     C Elwin A. Roziskie C
                  . Treasurer's portion of SMAU6 meeting
. . Yrites numbers that nobody can read (GOSUB+HEX=CHAOS)
                  . A nerd or anyone who can read HEX
                  . Mama's husband
          . . . . Use with above if Mama remarries
          . . . Termite food
            . . . Produces programs with many, many error messages
COINC . . . . . . Name of MEROEd files named Company and Corporation
            . . . Usually round (cornbread is square)
                                                                            "Melym, is it true you bought an exercise
                                                                                    bike for your robot?"
CALL SPGET . . . . . Use to order out Italian dinners
           . . . Redial; you forgot the garlic bread
           . . . Carpentry term for a rafter support
                 . Provides a new source of error messages
                                                                              9T9 - PAGE 6
                 . What the wife spends the paycheck on
```

. . Command that changes the subject; I WILL!

FEST WEST 1992 February 15-16, 1992

THE HUGgers HOOSIER USERS GROUP People Helping People

By Don O'Neil

OPA.

(May be freely distributed provided proper credit is given)

Attending vendors (partial list)

Bud Mills Services (Horizon)
Comprodine
Rave 99
9640 News
Asgard
ESD
The Taylor Co.
Western Horizon Technologies
Notung
MS Express
Crystal
C. Regena



1'

The doors opened at 9:00 am Saturday to an enthusiastic crowd. As the vendors did their last minute setup (myself especially), the crowd gathered around the tables to see the array of new products and demos. Among the most "shocking" demos present were those by The Taylor Co. run by Chris Taylor, WHT and Crystal software. TTC was show casing their innovative operating environments in Wycove Forth using the RAMBO memory expansion. Crystal was demoing their latest release of Midi Master 99, and occasionally sneak peeks at version 3.0. Finally, WHT was demoing their new product Digi-Port.

All in all it was a very successfull gathering, at last count around 250 visitors passed through the doors. Even ESD decided to show up, and contributed an IDE controller and Hard Drive to the raffle on Sunday. Here is a short list of what each vendor was promoting for the weekend:

Bud Mills Services (Horizon):

All the usual stuff, Horizon 2000 RAM disks, FGRAM's, RAMEO upgrades, and Memex cards. Among their new products shipping within a month, Digi-port and 4a Memex.

Comprodine:

Many amazing new games from Quinton Tormanen- His new releases of WAR ZONE II, MINE FIELD, and BACKSTEINE version 1.2. Also there was ARTIST CARD SHOP, a new utility for generating greeting cards.

Rave 99:

Rave was showing their FE/2 expansion box, and the new speech adaptor KIT.

9640 News:

Beery Miller was selling the new version of LGMA Fortran, GEME, Windows 9640 and a host of other 9640 and 99/4a related software packages.

Asgard:

New products from Asgard this year were TI-FEI, and a new version of YAFP.

ESD:

ESD showed up and brought along an early prototype of their new HD controller; unfortunately it was not functioning for a demo. ESD anticipates an April 15, 1992 release date for the new IDE controller. Negotiations have taken place and Barry Boone will be writing the DSR. Prices are in the \$160-\$300 range depending on floppy and hard drive configuration. An IDE controller with 40 Mb drive was priced at \$220.

The Taylor Company:

Chris Taylor's newly founded company was present to show off the capabilities of the 99/4a with Wycove Forth and the RAMEO memory addition. His demo's included an incredible graphics operating system with pull-down menus and windows running on a standard 99/4a with RAMEO. He has many promising new products that will hopefully come to the market soon.

Western Horizon Technologies (Myself):

WHT showed its new version of the Digi-Port software and hardware. Pricing and delivery for this product was announced, and will be shipped through Bud Mills Services. WHT showed its prototypes for the 4a Memex memory card and Accelerator. Flyers were distributed explaining other services WHT provides, like FLD and EFRCM programming.

Notuna:

Notung was present to promote their Disk o' Dinosaurs, and new MIDI Master songs.

MS Express:

Showed their sliding blocks puzzle game.

Crystal Software:

An amazing demonstration of the capabilities of Midi Master 99 and Midi Album. Along with Mike's two keyboards, I brought along my expensive keyboard and we filled the house with amazing music that had Tom Freeman dancing in the aisles!

Regena:

Regena was there to promote her new RASIC software for teaching the alphabet, and other new BASIC programs.

OPA:

OPA showed up to show their new POP (Pile of Programs) cartridge that allows you to hold up to 2Mb of cart's in one. They also announced a new EPROM for the Geneve that automatically boots the 9640 into TI mode WITHOUT A DISK!!! Also announced was the ROS 9 series for the Horizon 3000 Randisks; this ROS is an EEPROM based ROS instead of a RAM based one.

After Saturday's event was the vendors forum, hosted by myself. Here are the two documents that arose from that event, one describing its purpose, and the other the results.

VENDORS FORUM

A meeting of the minds. Hosted by Don O'Neil of WHT

This open discussion between the consumer and the supplier is aimed at

reconciling differences of "wants and needs" to help re-inforce the continuing support of the 99/4a. We hope that business can take the suggestions and complaints from the public to help the current vendors serve you better. This discussion is OPEN TO THE PUBLIC and we hope that you will join us! Topics of discussion this evening will be:

>SOFTWAKE, where is it going?

>HARDWARE, when should you buy, and what?

>SUPPORT, what is support? who has good support?

XOPEN SYSTEMS, why should we share information, and when?

>OFEN DISCUSSION, put your FRAISE and complaints on the table.

TONIGHT AT 7:30 pm in the DEMO ROOM.

The National Committee for TI Standards (NCTIS)

The HUGgers Newsletter

Committee proposal, generated at Fest West 1992, Phoenix Arizona.

To form hardware, software and configuration standards to extend the life of the 99/4a and bring order to the the community.

In these hard times, the TI community need a direction to go. In the past other committees have been formed, such as ANSI to generate standards for hardware and software developers to follow. The standards set forth by NCTIS will aid the users and developers in providing a better software/hardware solution for you. Once standards are set, it is recommended that all current and new software is labeled as standard #1... compliant. These standards should have acronyms for easy recognition.

The following guidelines were discussed at a "Vendors Forum" on February 15, 1992 in Phoenix Arizona. These are recommended standards for the community to ponder upon until May 1992 at the Lima fair, at which time the standards will be decided and publicized.

LEVEL #1: TI 99/4a Console, 32k memory expansion, cassette, and EA/5 loader (EA, Supercart, TI Writer, Multiplan, etc.)

LEVEL #2: Level #1 system FLUS: RSZ32, and DSSD Disk drive and controller

LEVEL #3: Level #2 system FLUG: at least 128k of CPU RAM, bankable at the >6000 space.

LEVEL #4: Level #3 system PLUS: 9938/58 VDP with 192k VDP RAM

PLEASE remember that these are recommendations generated by this first meeting, and are by no means locked in stone. We are presenting these ideas to you, the user, the developer, the market. Please take our recommendations and think carefully about them, and forward your ideas to your local user group, and then on to the Lima fair.

We appreciate your support.

MIDI-Master Review by Bill Buckeyne, Great Lakes

This is a product that will allow the TI Computer to play music on a keyboard rather than through the speaker of your monitor. It consists of a connection from the RS232 Card to the input plug of the keyboard and a disk of programs to set the process in operation.

It was created by Michael Maksimik. It can be purchased for \$45.00 from Crystal Software, 635 Mackinaw, Calumet City, IL or Asgard Software. It will work on the TI-99/4A or Geneve 9640. Required is a Disk Drive, XB or E/A module and RS-232.

Be sure to check that the keyboard has a MIDI input. Some of the keyboards I am aware of are the Casio MT240, Casio CT-650, and Yamaha PSR-300. The sounds of keyboard voices have different numbers, but provision is made for this in the software. A menu choice is made available to patch numbers for the voices to the particular keyboard that you own, so that the sound is compatible with the programmers conception of his work.

Several sources for files to play different songs are available. 5 files are on the original MIDI disk to demonstrate the possibilities. GEnie has the same files and maybe 6 additional ones. CONNI Users Group came up with 1 additional song on their January 1992 DOM. Harrison Software has started a new unit which is called J.C.Bach Music and has the complete Anna Magdalena Notebook songs for the MIDI. I am sure more sources will available soon.

Of course the greatest fun comes in creating your own songs.

This is done very easily. If you remember from your elementary school vocal music teacher, the lines of the treble clef staff are EGBDF (Every Good Boy Does Fine) the spaces are FACE (simply spell FACE). The Bass Clef (or bottom staff) GBDFA (Great Big Dogs Fight Animals), spaces ACEG (All Cows Eat Grass), you can write the letter names in your sheet music. The durations are Whole(4 counts), Half (2), Quarter (1), Eighth (1/2), Sixteenth (4 notes to a beat), on down the fractions.

Mike Maksimik set up SNF which stands for Symbolic Note Format and with the TI writer(or any word processor) you simply enter the key- board voice to play it on (see the manual that came with your keyboard) such as O=piano. l=harpsichord etc. the note you want to sound and the duration. For example 1.1B.W would mean voice one B in the second Octave from the bottom for a Whole note(4 counts).

The keyboards vary in the amount of keys. My MT240 has octaves (count 7 keys from the left side and each 7 keys is an octave) so you would have OC 1C 2C and 3C. Each of the 7 keys following this numeral would be numbered the same. OC OD OE etc. 1 voice/l note/l duration per line on your TI Writer listing. The menu option 4 compiles all these notations into memory and option 2 plays the song.

If you have any questions, see me and I will try to answer or check my Docs.

Bill Buckeyne

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RARE OFFICIAL TI EDUCATION CARTRIDGES: THE SCOTT FORESMAN MATHEMATICS COURSEWORK SERIES reviewed by Charles Good Lima Ohio User Group

I can't say enough about nice things about this software. It is, in my opion, far superior to the MILLIKEN MATH SEQUENCES II cartridge software many of us are familiar with. When it comes to teaching students NEW mathematical concepts, as opposed to just reinforcing previously learned concepts with drills, there is nothing better than the SCOTT FORESMAN MATHEMATICS COURSEWORK SERIES. None of the basic math education software for Apple or MS-DOS computers is as good, in my opinion. You can actually sit a student down in front of the computer, start up the module, and have the computer do the complete job of teaching the student an unfamiliar math concept without any further human intervention. I have done so with my 1st grade daughter and 5th grade son, and I have talked to a couple of elementary school educators who use 99/4As and who have confirmed that these cartirdges are actually self teaching. I find this amazing! This software is computer assisted learning at its very best.

All cartridges in the MATA COURSEWORK SERIES were written by Thomas Hartsig. They seem to be designed for in classroom use, but also can be used at home. Each makes liberal, use of sprites and color graphics, music, and especially speech, and each is based upon a particular theme. The powerup cartridge menu gives a choice of several activities, the last being a random review of the others. At the beginning of each activity, the student is given the choice of 1- A TEACHING EXAMPLE, or 2- PRACTICE EXERCISES. Selecting 1- really shows the magic of the cartridge. The problem is set up graphically on screen step by step. Digits float around the screen as the problem is solved, and while all this is happening the computer TALKS the student verbably and with on screen words through each step of the solution. You really have to see all of this to appreciate how good these tutorials are.

When 2- PRACTICE EXERCISES is selected a problem is displayed and the student is asked to solve it digit by digit, usually from right to left, just as the problem would be done with pencil and paper. A wrong answer gets a "try again" the first time. If the student waits too long the computer prompts on screen and verbabally "your turn" a couple of times and if no solution is attempted the computer then solves the problem. If too many problems in a series are solved incorrectly or not at all the computer says "you can do better than this" and immediately begins to display some additional TEACHING EXAMPLES.

The better known software in this series, cartridges that are not rare, include ADDITION AND SUBTRACTION 1, ADDITION AND SUBTRACTION 2, MULTIPLICATION 1, and DIVISION 1. The activities of the "rare" c1983 cartridges are listed below. Both NUMERATION cartridges are listed in TI's last 1983 price list. None of the others are mentioned in official TI

promotional literature.

NUMERATION 2- at the carnival.

This was available from some dealers in late 1983 but was less commonly available than Numeration 1.

TI, in its 1983 pamphlet "Texas Instruments Home Computer Program Library" lists this cartridge as appropriate for "late elementary, 10-12 years". 1- 4 DIGIT NUMBERS. (Write four thousand two hundred five. Which digit is in the hundred's place?)

- 2- COMPARE NUMBERS. (Which of two is larger?)
- 3- Rounding numbers (To the nearest 10s with 5 or more rounding to the next digit.)
 - 4- 5 AND & DIGITS
 - 5- 7, 8, AND 9 DIGITS
- 6- DAILY USE OF NUMBERS (Weigh produce on a scale and round to the nearest 10 ounces.)
 - 7- REVIEW.

MULTIPLICATION 2- Highty Multiplication.

This has a cute graphic of a little flying super hero, Mighty, who saves the day if you answer correctly. I wrote about this module previously under the topic of "never released software" but I subsequently found it listed on some TRITON catalogs.

- 1- MULTIPLYING 10 AND 100. (3x10=? 3x100=?)
- 2- MULTIPLES OF 10 AND 100 (3x7=? 3x70=? 3x700=?)
- 3- 2 AND 3 DIGITS TIMES 1 DIGIT.
- 4~ 2 DIGITS WITH RENAMING. (I used to call this "carrying".)
 - 5- 3 DIGITS WITH RENAMING.
 - 6- MORE THAN 1 RENAMING.
 - 7- WORK PROBLEMS.
 - 8- REVIEWING IT ALL

ADDITION AND SUBTRACTION 3- Adventures in Addition and Subtraction.

- 1- ADD 2 DIGIT NUMBERS.
- 2- SUBTRACT 2 DISIT NUMBERS
- 3- REGROUP OBJECTS (*13 ones equals 1 ten and 3 ones.*)
- 4- ADD WITH RENAMING
- 5- SUBTRACT WITH RENAMING
- 6- ADD 3 DIGIT NUMBERS
- 7- SUBTRACT 3 DIGIT NUMBERS
- 8- REVIEW.

MUMERATION 1- Under the Big Top.

II considers this suitable for "early elementary 5-7 years" The cartridge was available from some dealers by the end of 1983 but I never personally saw one in the stores.

- 1- NUMBERS TO 9
- 2- COMPARE NUMBERS (3(5)
- 3- HOW MANY TENS
- 4- NUMBERS TO 99
- 5- NUMBERS IN ORSER ("5 is one less than 6.")
- 6- DRDINAL NUMBERS (First, second, third, etc.)
- 7- NUMBERS TO 999
- 8- REVIEW

FANTASTIC FRACTIONS 1

- 1- WHAT IS A FRACTION
- 2- A FRACTION OF MANY ("How many boxes are black? How many total boxes are there? What fraction are black?)
 - 3- EQUAL FRACTIONS (1/2 = 2/4)
- 4- MIXED NUMBERS (Whole number plus fraction, such as 2 1/4)
 - 5- APPLICATIONS (Show 5 1/3 on ruler scale.)
 - 6- REVIEW

DECIMAL DELI 2

There is reference to a DECIMAL 1 in the literature, but I havn't ever seen DECIMAL 1.

- 1- PLACE VALUE (ones, tens, tenths, hundredths, thousandths; 92.475 equals "ninety two and four hundred seventy five thousandths")
 - 2- COMPARING, ORDERING (*5.374 is greater than 5.334*)
 - 3- CONTING PLACES (35.8284, four decimal places)
 - 4- MULTIPLYING DECIMALS
- 5- ZEROS IN THE PRODUCT $(0.04 \times 0.1 = 0.004;$ "We need two zeros in front of the four to make three decimal places.")
- 6~ APPLYING DECOMALS (Each roast beef sandwich costs \$3.93. What is the cost of 7 sandwiches?)

DONE

RARE OFFICIAL TI EDUCATION CARTRIDGES: THE SCOTT FORESMAN MATH ACTION BAME SERIES reviewed by Charles Good Lima Ohio User Group

Most of these games are more fun, in my opinion, than the "Computer Math Games" series. They are probably best used in a home rather than a classroom environment, since math concepts already learned are reinforced but you aren't taught any new concepts. It is necessary to solve a math problem in order to make a move. An incorrect answer sometimes results in the computer displaying the correct answer to the problem. but you don't get an explanation of HOW to obtain the correct answer. None of these c1983 games are mentioned in any TI promotional literature I have seen. They were all, apparently, released by Scott Foresman after *Black Friday*, although they are mentioned in Scott Foresman ads prior to then. All these gemes have on screen instructions, make good use of music and color graphics, and have three levels of difficulty, usually labeled HARD, HARDER, and HARDEST. Although originally designed to be run from cartridges, we have all these games on library disks 112b and 114a in a format that will run out of extended basic without the need for a gram device.

FROG JUNE

This game for 1 or 2 players teaches counting and reading of basic numbers. It is NOT a "frogger" type of "cross the

freeway" game. You and your opponent's frogs jump around the pond from one lily pad to another. You (enter) the answer of each displayed problem. If the answer is correct your frog will jump and you win lily pads. The faster you answer the more lily pads you win. The winner is the first player to win 20 lily pads. Problems are of the "Give 3 more than 48" or "52 54 56 58 Give the next number" type.

SPACE JOURNEY

You have two minutes to guide your space ship home to earth in this one player game. To move your ship you must answer a PERCENT problem correctly such as "Give 3.157 as percent" (315.7%). before you land you mist either intercept ten meteors or land on five different planets. After each correct answer you may do either. The game is not easy. If meteors hit your ship you become lost in space and the game ends. If you land on a planet some disaster usually occurs which requires you to solve extra problems to get off the planet. For example, "Your ship has engine trouble. You can repair it only if you answer two problems correctly." Finishing within the allowed two minutes isn't easy, even if you know the math!

PICTURE PARTS

This is, in my opinion, the most amusing of this group of math games. It resembles FACE MAKER. Every time you correctly answer a basic addition, subtraction, or multiplication problem you get your choice of parts to add to the face you are building on screen. Face shape, ears, nose, hat, mouth, eyes, etc are added one at a time. When you are finished you have a very amusing looking face that you yourself created.

PYRAMID PUZZLER

This is a two player game, or one person can play against the computer. The object is to be the first to climb to the top of the pyramid. If you land on your opponent's square he is pushed down one space. You get to move Left/right or up/down each time you answer a MULTIPLICATION problem correctly. Problems are basic "number fact" problems.

STAR MAZE

You move a little creature called THID through a maze to his home planet. Every time you correctly answer a division problem (no remainders) you can move THID two spaces in the maze with the arrow keys. Sometimes you bump into a BADID star that sends you further back from the end of the maze. This game is timed. The faster you solve the maze the more points you earn. You can select the time allowed (and hence the game's difficulty), 2, 3, or 4 minutes.

MUMBER BOWLING

I wrote about this game a couple of years ago as a "never released" module. Later I learned that it was sold in limited quantities. The game teaches DECIMALS AND FRACTIONS. You are asked a question and must solve it quickly. If the solution is correct you bowl your ball and the time required

to solve the problem determines the number of pins knocked down and your score. You only get two seconds to solve the problem and get the maximum score of 10 pins. Usually I can't type the answer that fast even if I know the answer immediately, so I have never bowled a perfect game with NUMBER BOWLING. Still, it is fun to try.

##DONE##

RARE OFFICIAL TI EDUCATION CARTRIDGES: THE SCOTT FORESMAN READING SERIES reviewed by Charles Good Lima Ohio User Group

These modules resemble PLATO software in that they present specific language arts concepts in a text formt and then ask a series of questions to text the student's knowledge of the concept. Unlike PLATO software, the Scott Foresman modules make good use of music and color graphics. The rare modules DO NOT make use of speech synthesis, unlike some of the more common cartridges in the Scott Foresman READING series. These cartridges seem to be designed for in classroom use, which may be why they were not made commonly available to the public. The "suitable age" designations below are taken from the Fall 1987 TRITON catalog which lists most of these modules.

READING TRAIL

Suitable for ages 8-12, this cartridge teaches about the characters, setting, and points of view in stories. Famous characters from the Wizard of Oz and a separate story about fishing are used to illustrate specific points.

READING POWER

Suitable for ages 8-12, this module teaches research skills involving the dictionary, encyclopedia, and library card catalog. Specifically the student learns how to find information that is organized alphabetically in these kinds of reference materials. A dective story called "The Lion's Charm" with color anamation and music is used in some of these activities.

READING RAINBOWS

This is one of the rarer of the "rare" READING modules. It has been listed in very few catalogs over the years. It teaches how things are alike, parts and wholes, and sizes. Speech synthesis is used effectively. My first grade daughter whipped through this in a very short time, so I assume it is designed for first grade (age 6).

READING WONDERS

Another of the more rare modules, READING WONDERS teaches the student to distingush between various types of fiction and non fiction. Several colorful stories are used to illustrate what is and is not historical fiction, modern realistic fiction, science fiction, biography, autobiography,

and information articles. I suspect that this is probably for ages 11-13

READING ADVENTURES

This uses a variety of stories to teach, within a paragraph, main and supporting details, drawing conclusions, and sequential relationships. I have seen this one mentioned, but not described in catalogs. It looks like about ages 8-10, but I am not sure.

READING CHEERS

I would have guessed this was for 2nd grade, but my 1987 TRITON catalog says ages 8-12 (2nd grade is age 7-8). The module teaches root words with endings (lazy and lazily), contractions, and compound words.

All of the above "rare" modules are c1983. To complete the record I will briefly describe below the more commonly available 1982 Scott Foresman titles in the READING series.

READING ON

Some nicely illustrated science fiction stories illustrate the use of maps, schedules, graphs, and why and how people use them. For ages 8-9

READING FUN

There is minimal use of speech synthesis in this 2nd grade level module. Four colorful stories illustrate problems and how people solve them, why things happen, and how characters feel.

READING ROUND UP

Four stories based on an "American Wild West" theme are used. Concepts taught are figures of speech, word meaning, and idioms. The module is designed for ages 9-10.

READING FLIGHT

For ages 11-12. A neat story about an archaeological dig on a south seas island called Bolo Island teaches classifying, summarizing, and outlining information.

DONE

VERY RARE OFFICIAL TI MODULES:
COMPUTER MAIN GAMES I, III, and IV
reviewed by Charles Good
Lima Ohio User Group

These three Addison-Wesley education modules are each listed for \$39.95 suggest retail in TI's last published 99/4A catalog dated June 1983. They are part of a series which includes the commonly available copyright 1982 COMPUTER MATH 6AMES II and VI. The I, III, and IV modules have a 1983 date on their title screen.

I obtained them as COMMAND MODULE SIMULATOR disk files (and now also as Grankracker files in the Lima UG software library), and at first I thought they had never been officially released by TI. I have never seen them advertised in Triton, Tex Comp, or Tenex catalogs. Even Mike Wright, who has more different kinds of TI modules than anybody else I know doesn't have these modules. I finally dicovered that Eunice Spooner actually has one of these modules, GAMES III, complete with TI published documentation. Even now (January 1992) it is possible to purchase GAMES III from TM Direct Marketing, but without any documentation. Larry Conner, a TI dealer who has sold lots of rare II stuff to collectors told me that all three of these rare modules have passed through his hands. Larry said, "As I recollect, those are really neat games that make good use of the TI's special features." Apparently only TI sold very limited quantities of these modules directly for \$39.95 each. Because of price I doubt if they sold very many.

Quoting from page 2 of my "VI" module's documentation:

"It is essential for all of us to know and understand how fundamental mathematics operations are performed. In order to develop this understanding, students must have the opportunity to practice, for only through practice can they develop strong mathematical skills. The Computer math Games VI Solid State Cartridge is one of five modules of math games that can help provide this opportunity. The program was designed by Charles Lund, Supervisor of Mathematics for the St. Paul, Minnesota, public schools and the staff of Addison-Wesley Publishing company in cooperation with the staff of Texas Instruments Incorporated. The Games included in the cartridge are both fun and challenging, with an entertaining, motivating format designed to capture and hold attention."

"VI" is one of five modules?!?! The series includes I, III, III, IV, and VI, all of which have a title screen that names Charles Lund as author. There is no V. Apparently someone at Addison-Wesley or at Texas Instruments doesn't know how to count! There are some II modules that teach this skill I believe.

The options and difficulty levels of the math games that are in these modules make them suitable for students with a wide diversity skill levels. The documentation for my "II" and "IV" modules claims suitability for school grades I through 9. The unreleased "I", "II", and "IV" are probably appropriate for a similarly wide range of grades.

These rare 1983 modules offer you a choice of text in five languages. (The older COMPUTER MATH GAMES II and IV are only in English.) When you PRESS ANY KEY TO BEGIN you are presented with the following options. It is suprising to see almost the entire startup menu screen filled with selections.

PRESS

1 FOR TI BASIC

2 FOR ENGLISH

3 FOR FRANCAIS

- 4 FOR DEUTSCH
- 5 FOR ITALIANS
- 6 FOR ESPANOL

All these language options function properly in COMPUTER MATH GAMES I. However, the Italian and Spanish options are not functional, in "III" and "IV", and cause the computer to lock up. Each COMPUTER MATH GAMES module contains several distinct games. These games are described individually below. All have plenty of music and colorful screen displays.

COMPUTER MATH GAMES I:

The game of SQUARE OFF:

Two people or one person and the computer can play against each other. You are shown a grid with a dot on screen at the intersection of each set of coordinates. You can chose to have coordinate 0,0 at the lower left, with positive numbers extending to the right along the x axis and up along the y axis. Dr, you can specify coordinate 0.0 to be in the middle of the screen, with positive coordinate numbers extending to the right and up and negative coordinate numbers extending down and to the left of 0,0. You can specify 2-14 rows and 2-9 columns in your coordinate system, making the game very simple or very complicated.

Each player alternately inputs a set of adjacent coordinates in the form 0,0,0,1 (position 0,0 and position 0,1), and the computer draws a line between these two dots on screen. If a mistake is made and the entered coordinates do not exist or are not adjacent or already have a line between them the player is given a second chance. Then it is the other player's turn. The object of the game is to close boxes by drawing the fourth side of the box and to prevent your opponent from doing the same. When you close a box you get a free turn. The player who closes the most boxes wins.

This game gives practice using an X-Y axis coordinate system and in the use of negative numbers. To win requires a lot of thought and strategy. I enjoy this game. The computer is a challenging opponent. So are some of my children.

The game of DOT-DOT-PLOT:

This is for one player. You are again presented with a coordinate system, this time with only the X and Y axes showing. There are initially no on screen dots at each coordinate junction. You have your choice of putting the 0,0 location at the extreme bottom left and having only positive numbers on the X-Y axes, or placing 0,0 in the center of the screen and having both positive and negative numbers extend up/down and right/left from 0,0.

You are to help the computer draw a picture. Your choices are Pine Tree, Airplane, Lobster, Dog, Car, Rabbit, Castle, or "Any of these". The computer puts the first dot on screen and you specify the coordinates of this dot. The next dot is then displayed and you specify the coordinates of the second dot. The computer then draws a line between the

previous dot and the new dot. Another dot is then displayed, and when you identify its coordinates properly a line is drawn from the previous line to this new dot. In this way your picture is drawn "dot-to-dot" style until it is complete. When the picture is finished you are given a total of right and wrong guesses and told the total number of dots in your picture. The airplane, for example, takes 20 dots with connecting lines.

You need a good monitor for this game. It is sometimes difficult by sight alone to accurately move from the first blinking dot of the new picture in the middle of an otherwise nearly empty screen back to the edge of the screen where the X and Y axes are located and get an accurate fix on the location of the dot. It is easier with subsequent dots, because you have the location of earlier dots to help guide you.

The game of MATH BOXES:

This game requires two human players. First you input the player's names and select the type of number;

- 1- Whole numbers (all positive)
- 2- Integers (whole positive and/or negative numbers)
- 3- Decimals
- 4- Simple fractions

Then you select the problem type (+-*/). Finally, you select the size range of each of the two numbers in the problem (from -999 to +9999 if "Integers" is selected). The screen then displays 12 math problems arranged in three rows and four columns. The first player selects two adjacent problems to solve and if correct gets a line drawn between the two problems. If incorrect, the opposing player gets the line. The computer gives different colors to the lines of the two players. The object of the game is to draw a box with these lines and prevent your opponent from doing so.

Depending on the options selected at the beginning of the game, the game can be "gosh darn hard" even for me, or easy enough for my first grade daughter to play successfully.

The game of BEANS AND PITS:

This game requires two human players and gives practice in interpreting numbers based on hundreds, tems, ones, tenths, and hundredths. The computer randomly transfers beans from a small pits (holes) to a combination of large and small pits. The large pits represent a number composed of 100's, 10's, ones, etc. Beans distributed to large pits stay there. Beans in small pits have to be cleared out so that eventually they are all in the large pits. The first player to completely clear out his small pits is the winner. This sounds confusing, and it is. However, the computer does most of the work of moving pits about between pits and declaring a winner, so the game is in fact fairly easy to play.

After a winner is declared, each player is asked the "number" represented by the beans in his large pits. If there are 5 beans in the "1" pit, 8 beans in the ".1" pit, and 2 in the ".01" pit the correct answer is 5.82, but being able to answer correctly has nothing to do with winning or losing. The winner and loser are determined randomly by the computer. Learning how to determine the winner's and loser's

"number" is the only mathematical learning experience of the game, but has nothing to do with the random win/lose chances.

I am not terribly impressed with this particular game.

COMPUTER MATH GAMES III

These are all timed card games. A player gets 30 seconds to come up with the correct answer of the opponent gets the point. Some but not all of the games suffer from the anomaly of not having aces or face cards in the deck. Instead, players sometimes get to play the 11 of spades, 12 of hearts, 13 of clubs, etc. If mistakes are made, the correct answer is NOT indicated in some of these games. In most of these games it isn't actually necessary to solve the math problems in order to win the game. Winning is by luck, and if you can't compute your score, the computer does it for you. Knowing WHY you won (or lost) and have the

The game of MAR: (2 human players)

Each player in turn is shown two cards and asked to pick the larger of the two (eg. 10 of spades vs. 12 of clubs) by designating the card on the right or left of the screen display. A correct answer is worth one point. If the cards are of equal value and the player correctly recognizes this, three more cards are dealt and the player is asked to indicate the higher of the last two cars dealt. In this case the problem is worth 4 points. The player with the most points wins. In case of a tie, the shortest elapsed time determines the winner.

This game is suitable for kindergarten and first graders. It teaches RIGHT, LEFT, and number recognition from 1 to 13.

The game of FiASH: (1 or 2 players) You get to select the maximum value on the cards (2-13, no 1's). Next the type of problem is selected: 1-Arithmetic 2-Reduce the fractions 3-Squared arithmetic

If you select "1-Arithmetic" you then get to select addition, subtraction, multiplication, or division. The first three are intiger (whole number) problems with intiger answers. Division requires that you specify an integer quotent (always at least 1, never 0) and an integer remainder. For example, 6 of clubs divided by 4 of spades gives a quotient of 1 and a remainder of 2.

"3-Reduce the Fraction" presents a fraction (numerator-slash-denominator) and asks for the reduced form as a single fraction. For example, the game accepts "10/9", not 1 1/9, as the reduced form of "10/9".

"3-Squared Arithmetic" gives you the additional choice of 1-Addition or 2-Subtraction. You have to calculate the square of the displyed problem, as in (10-4) 2. You need to know your MULTIPLICATION number facts in addition to your addition/subtraction facts

The game of IN BETWEEN: (1 or 2 players)

The highest card in the deck can be between 3 and 13 (no aces or deuces). The computer displays 3 cards and asks. "Is

the middle card between the other two in value? 1-Yes 2-No^{*}. If the display is 9-7-7, the correct answer is NO. As does MAR, this game teaches number recognition and also the relative order of the recognied numbers.

The game of TWENTY-ONE: (1-3 players).

The computer is dealer and an additional player. The dealer's complete hand is shown at the start of each hand with one dealer card not showing. Players are given 2 cards and asked if they want more cards. The usual Blackjack rules apply. This is the only game where face cards are so identified (as J, B, and K instead of 11, 12, and 13). When the deck is exhausted the computer reshuffles the cards and play resumes.

There is no betting. Players and the dealer just win or lose hands indefinately until they tire of the game. Other than the lack of betting the game is very realistic. It is as good as any of the other "Blackjack" games written for the TI.

The game of ZERO: (1-3 players)

Here the red cards have positive points and the black cards have negative points. The game is played like TWENTY ONE or blackjack, except that the object of the game is to have a score as close to zero as possible.

COMPUTER MATH GAMES IV

The game of NIM 25: (one player against the computer)
This is the old "pick up anywhere from 1 to x blocks and
the person who picks up the last block wins" game. Barry
Traver has discussed the mathematical basis behind this game
in recent issues of his disk magazine.

There are 25 consecutively numbered blocks to be picked up. Number 25 is the last to go. You are given the option to go first or second and asked to chose the maximum number of pieces that can be picked up in a turn (max of 2-25). Unless you learn the secret the computer will usually win. Math skills are not needed to play or win, but it is fun to try and figure out the number of the highest numbered block that will be left on screen after each "pick up".

The game of MATH DARTS: (2-3 players)

You can select the number of players, the type of math problem (+-1-), and the maximum and minimum possible values for the numbers in the FIRST NUMBER +-1- SECOND NUMBER problems. Once ranges are selected, the computer randomly puts 10 numbers within the range on the left side of the screen as a target. Opitonally, the players can select the specific numbers to be placed on the target. A colorful man appears and throws two darts at the target. The numbers hit by the darts are the two numbers in the math problem. You get 10 seconds to solve each problem.

The game of 500: (2-4 players)

This game gives practice in recognition and interpretation of decimal numbers. You see a nice graphic of

a baseball pitcher throwing the ball, which stops aidway towards the batter. You are then given a problem to solve. If solved correctly within 10 seconds the batter hits the ball in the air. If solved incorrectly the batter hits a grounder.. You can chose the maximum number of digits to the right and to the left of the decimal place. Problems are of three types.

1- "What is the compact form of 700+50+9+.4+.03?" The answer is 759.43.

2- "What is the expanded form of 509.43?" The correct answer is 500+9+.4+.03.

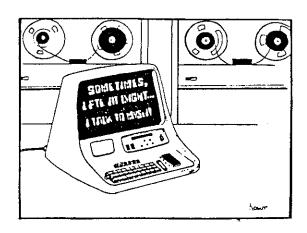
3- "In the number 711.5 the number in the tens place is what digit?" The answer is one.

The game of WOODCHUCK: (1-4 players)

You can select +-\$ or / problems, and you can specify the high and low range of numbers to be placed on each of two dice. Then either the computer randomly generates numbers within this range on the dice or you select specific numbers within the ranges to be on the dice. You also have the option on your turn to roll the dice or to pass. Math problems ask you to +-\$ or / the numbers on the two dice. The answer is the number of points you earn, and your goal is to accumulate a specified number of points. Just to make things interesting, every now and then a dragon appears on the dice when they are rolled. The dragon eats all of a player's points and the player must start over from zero. The dragon makes this game really maddening!

SUMMARY

There is a lot of variety in these games. I like some better than others. They are all entertaining and they all make good use of music and color graphics.



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Tips/Hints/Info

- Pete Zitz - the S.A.A. 99ers

TIP: Editor/Assembler. Another undocumented feature has been found. In the Assembler when asked for the OPTION, you type RLS (for Registers, List and Symbol table dump). You may also type in "T" for full TEXT, which gives you each byte rather than just the first one in each line.

Want to change the speed at which your cursor flashes? Type in this line: CALL INIT :: CALL LOAD(-31748,N) Where N=O to 255. 0= no flash, l= normal, and 2 and up is faster.

OLD TRICKS FOR NEW (AND NOT SO NEW) USERS

West Penn 99'ers

Joseph Cohen, P.O. Box 647, Venedocia, Ohio 45894

Though many of us tend to ignore most of the cartridge software for our computer, with the exception of TI Extended BASIC and, possibly, Multiplan, Logo II, Editor/Assembler, and TE-II (for speech), many of the cartridges are very enjoyable. In order to give you an excuse for searching your closets and basements looking for those hidden modules, I'd like to point out that many of them have undocumented features ranging from useful to interesting to amusing. Here are a few examples.

Many are probably familiar with "The Secret of Personal Record Keeping: Implementing DISPLAY AT and ACCEPT AT without Extended BASIC." published way back in 99'er magazine and reprinted in The Best of 99'er, page 76. Briefly, TI BASIC with the PRK module contains the commands CALL D() and CALL A() (similiar to DISPLAY AT and ACCEPT AT). Presumably this also works with the Statistics module, but I do not have this one and could not verify it. I have been told that this is a result of the hybrid nature of certain modules, containing both GPL and BASIC coding. Perhaps someone knows or could discover additional undocumented features of this cartridge (I have extra PRK modules if anybody would like to experiment with it), and possible other cartridges with call console BASIC routines (e.g. Tax/Investment Record Keeping).

Next, the TI Disk Manager cartridge offers a proprietary protection feature that does not allow the Disk Manager to copy a protected diskette. To use it, press the FCTN X key ten times while on any menu screen. You will hear a beep (if your monitor has sound!) and) (will appear at the center top of the screen. Any diskettes initialized at this point will be proprietary protected. Each time you address them using the Disk Manager cartridge (e.g. to catalog such a diskette), a low-tone beep will sound (not present for unprotected diskettes), informing you that the diskette is protected. The protection information is stored in sector 0 on the diskette. This type of protection is ineffective against the sector disk copiers and has been discussed in the past. I wonder if anybody knows more about it. The DM-1000 offers protection and unprotection of diskettes; is it the same kind as the TI Disk Manager cartridge?

Now to a few game cartridges. Moonmine, Alpiner, Munchman, Munchmobile, and Hooper have a test mode, where you can select the starting level. So if you wanted to see what it is like to play at those levels you could never reach, here is a good reason to plug those cartridges into your 99/4A! The test mode is obtained by pressing SHIFT 8, 3, 8 at the game title screen (SHIFT 8 only, for Hooper), and on Burgertime, pressing SHIFT 8 gives a message: "Code modifications by John M. Phillips."

Have you always played Parsec as a one player game? Here is something different, for a two player team. If the fire buttons on both joysticks are pressed simultaneously, Spaceship Parsec will not overheat. Horizontal lines will appear on the screen, but they do not disturb the game and would allow, in fact, one to see the Bynites when they turn invisible.

This is certainly not an exhaustive list. If anybody knows about other "tricks," would they please let me know.

TORONTO COMPUTES!

Have you ever tried listing a Basic or XB program with the printer? It prints out in 80 columns. This saves paper but it doesn't look like the screen display. And if you want to publish a program, the 28 column format is the only way to go. I keep forgetting the printer But. commands for getting a 28-column listing so when I saw an article with the printer commands spelled out, I decided to put them in a short program and let the disk do the remembering for me. The printer has to be turned on first, then run this short program to set the printer, then load the program that you want to list (OLD DSKn.File name). Then enter the standard command LIST "PIO".

Here is the program:

100 REM PROG-LSTER

110 OPEN #6:"PIO"

120 PRINT #6: CHR\$(27); CHR\$(

81);CHR35(28)

130 END

Line 120 may be different for some printers. Also, the last number, 28, could be changed to another value such as 40 if that is your prefered column width.

P.S.: I experimented first with trying to save a program to disk in a D/V28 file but the computer wouldn't "list" anything but a D/V80 file, even if I opened the file ahead of time as a D/V28 file. The command is: LIST "DSK1.File_name", and adding any file specifications resulted in a syntax error message.

-Phil Van Nordstrand, JSC Users Group

T-shirts by laser print

San Francisco's ETC Co. is selling a new Easy Transfer Cartridge kit which allows adventurous laser printer owners to print colour text or artwork on paper and then transfer any printed colour images to T-shirts, transparencies, mouse pads or plaques.

The user creates the text or artwork in any computer program that supports a laser printer and can output the image or

text in reverse print.

ETC Co. sells special colour toner cartridges to replace the regular toner cartridge found in laser printers with a Canon CX or SX engine.

The user then prints a reverse image of the desired text or graphic on normal paper, using one or more of the ETC colour toner cartridges.

Multiple-colour images are printed by changing colour cartridges and reinserting the printed graphic back into the printer as many times as different colours are required. ETC Co. sells black, blue, brown, green, red and yellow cartridges.

Once the colour image has been printed

on paper, it can be transferred to other materials by applying heat and pressure. According to ETC, a home iron is sufficient for transferring smaller-size images to fabrics.

Otherwise, a heat transfer press (costing up to \$1,000) is needed for sufficient heat and pressure to carry out large-size transfers, or transfers to materials such as metal, plastic or wood.

ETC believes that this more expensive option might appeal to small business people who could use customized colour transfers for promotions. Or, ETC says, some users might want to set up a part-time business printing personalized colour transfers for T-shirts, sweatshirts and plaques.

Easy Transfer Colour Cartridges sell for \$195 U.S. (\$230 Canadian) each. Sample transfers and promotional literature are available from EMS Co. at (800) 336-1599.

ETC Co., 1335 Sixth St., San Francisco, CA 94107, (800) 336-1599 or (415) 621-5586.

TI System For Sale

- 1) TI console with 32K memory expansion built-in
- 2) TV RF Modulator
- 3) TI Peripheral Expansion Box, which includes:

RS232 card, disk controller card, one Full-height SS/SD drive, plu

plus two external drives

- 4) All necessary documentation
- 5) Several TI-related books
- 6) Extended Basic cartridge
- 7) Hunt the Wumpus cartridge

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