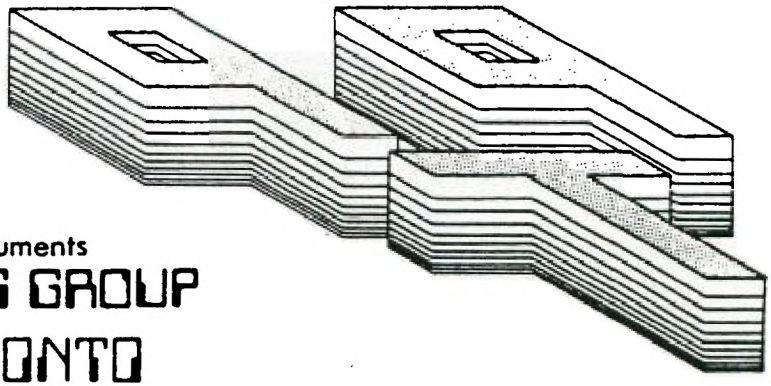
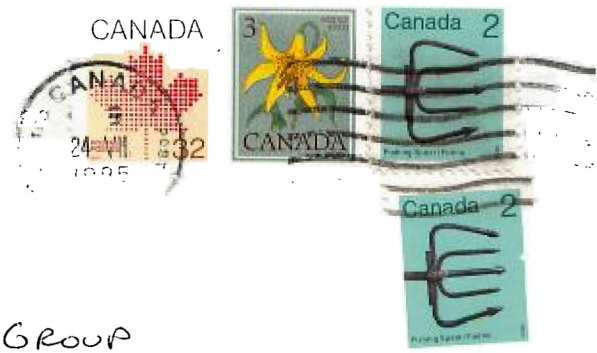


Texas Instruments

USERS GROUP TORONTO

FOR THE TI-99/4A COMPUTER

JUNE 1985



NINE T NINE USERS GROUP

29 INGLESIDE DR.
DOWNSVIEW, ONTARIO
M3K 1V2

EDMONTON USER'S GROUP
BOX 11233
EDMONTON, ALTA T5J 3L1

EXECUTIVE COMMITTEE

PRESIDENT	Emile Verkerk	(633-1451)
VICE-PRESIDENT	Dave Rust	(449-2576)
SECRETARY	Randy Rossetto	(469-3462)
TREASURER	Peter Sandford	(839-7387)
OFFICER AT LARGE	Boyd Brown	(793-3761)
PAST-PRESIDENT	Lloyd Lindsay	(743-3868)

NEWSLETTER EDITOR

Emile Verkerk

LIBRARY COMMITTEE

Randy Rossetto

MEMBERSHIP FEES

FULL MEMBERSHIP	$25.00 / year
ASSOCIATE MEMBERSHIP	$12.50 / year

All memberships are household memberships. An associate membership is only for those who live beyond the consulting distance of Toronto, 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 our secretary in writing at the club address on the front cover or call and leave a message with his answering machine.

NEXT MEETING

The meetings are held on the last Tuesday of each month. The next meeting will be held on July 30, 1985 at Black Creek Library, 2141 Jane Street in Downsview, starting at 7:30 pm. The meeting is in the auditorium. The library is on the east side of Jane Street, just south of Wilson Avenue and is the ground floor of an office building.

COMMERCIAL ADVERTISING

Any business wishing to reach our membership may advertise in our newsletter. The rates are as follow. (width by height):

FULL PAGE	(6" x 7 1/2")	$40.00
HALF PAGE	(6" x 3 1/2")	$20.00
QUARTER PAGE	(3" x 3 1/2")	$10.00

Please have your ads camera ready and paid for in advance. For more information contact the treasurer.

Don't forget, that any member wishing to place ads, may do so free of charge as 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, jokes, cartoons 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 9T9. If more information is required, call Emile Verkerk.

DISCLAIMER

Opinions expressed in this newsletter are those of the writers and are not necessarily those of the 9T9 USERS GROUP. 9T9 cannot assume liability for errors or omissions in articles, programs or advertisements.

LETTERS TO THE EDITOR

Attached is a list of transliterate commands that can be used with the TI-WRITER formatter to access its special functions. I tried using the commands suggested by Nicos Evdemon in the last issue of the newsletter, but like you had trouble with some of them. I find that my commands are simple to use, once a file is set up and loaded prior to typing in the Editor mode.

I had spent many hours trying to access these commands: I couldn't make heads or tails of the instructions concerning the Transliterate Commands in the TI-WRITER manual, the Epson RX-80 manual wasn't much help, and from a couple of letters over the past year or two in 99er/Home Computer Magazine it seemed that I wasn't the only frustrated person around. Reading Nicos' article seemed to clear up a lot of my questions.

I hope the above is of use to some of the people who read the newsletter, which, by the way, I thoroughly enjoy reading each month.

Dave Harrison
Cabri, Saskatchewan

- thanks for the vote of confidence. I hope that more people were helped by the article. Dave's transliterates appear elsewhere in this newsletter. -ed.

```
1420 RETURN
1430 CALL SCREEN(15Ø,1397,5)
1440 CALL KEY(Ø,K,S)
1450 IF S=Ø THEN 1440
1460 IF K=13 THEN 1470 ELSE 14
1470 RETURN
```

EDITORIAL

Hello again! Another month, another newsletter, packed with information for your reading enjoyment.

First of all, let me thank those who are starting to actively participate in your newsletter. That includes those who sent in letters and articles, as well as those who phoned timely information to me before press time.

The big news this month is that we are moving our meeting place. From now on we are meeting at Black Creek Library, 2141 Jane St., at the southeast corner of Jane and Wilson. We have rented the auditorium, which is in the basement of the library so there is now plenty of room as well as adult size chairs. Unfortunately, there is only air-conditioning, no bar as some of you requested.

The next bit of news this month is that there will be NO summer break. Your membership dues are for a calender year (January to December) and most of you expect 12 meetings. To meet (no pun intended) with your expectations, there will be meetings all summer, although the August meeting will be the last Wednesday of the month due to scheduling difficulties.

Like a boxer delivering a one two knockout punch, this months issue contains another equipment modification article, this one reprinted from the IO PORT (Lehigh 99'er Computer Group). Add 8K to your Editor/Assembler module.

Profile looks at a programming effort (PRO WRITER - word processor) written by a twelve year old club member. An article on transliterates in TI- Writer submitted with a Latter to the Editor by Dave Harrison, a member from Saskatchewan and an array of informative information round out this months newsletter.

Running out of space, time and mind. Until next month, Happy Computing . . .

```
100 REM ***********************
*****
110 REM * CHECKBOOK RECONCILIAT
ION *
120 REM ***********************
*****
130 REM BY EMILE VERKERK
140 REM TI BASIC
150 REM COPYRIGHT 1982
160 GOSUB 1400
170 PRINT " CHEQUEBOOK RECONCIL
IATION IS A PROGRAM WHICH ALLOWS
ONE TO BALANC E ONE'S
CHEQUE-BOOK."
180 PRINT :" IN ORDER TO DO THIS
YOU WILL NEED TO HAVE YOUR BANK
STATEMENT, HEQUE REGISTER AND
CHEQUES."
190 PRINT :" IF THE BANK STATEM
ENT AND CHEQUE REGISTER DO NOT
BAL- ANCE YOU HAV E MADE AN
ERROR"
200 PRINT "IN YOUR BOOKKEEPING.
FIND THE ERROR AND TRY
AGAIN!"::::" PRESS ENTE R TO
CONTINUE"
210 GOSUB 1430
220 GOSUB 1400
230 PRINT ::" IF THE BALANCE PER
CHEQUE REGISTER IS NEGATIVE THE
ER-ROR IS IN OUR FAVOUR ELSE"
240 PRINT "THE ERROR IS IN THE
BANK'S FAVOUR AND WE DON'T WANT
THAT, DO WE?"
250 PRINT :::::::" PRESS ENTER TO
CONTINUE"
260 GOSUB 1430
270 REM
280 DIM C(26),D(16)
290 DIM C$(4,25),D$(15)
300 FOR X=1 TO 26
310 C(X)=0
320 NEXT X
330 FOR X=1 TO 16
340 D(X)=0
350 NEXT X
360 FOR X=1 TO 4
370 FOR Y=1 TO 25
380 C$(X,Y)=""
390 NEXT Y
400 NEXT X
410 FOR X=1 TO 15
420 D$(X)=""
430 NEXT X
440 GOSUB 1400
450 INPUT "FIRST NAME: ":A$(1)
460 PRINT
470 INPUT "LAST NAME: ":A$(2)
480 PRINT
490 INPUT "ADDRESS: ":A$(3)
500 PRINT
510 INPUT "CITY: ":A$(4)
520 PRINT
530 INPUT "PROVINCE: ":A$(5)
540 PRINT
550 INPUT "POSTAL CODE: ":A$(6)
560 PRINT
570 INPUT "ACCOUNT NO. ":A$(7)
580 PRINT
590 INPUT "TODAY'S DATE (DY/MO
/YR) ":A$(8)
600 PRINT
610 INPUT "BANK BALANCE: $":B(1)
620 PRINT
630 INPUT "CHEQUEBOOK BALANCE:
$":B(2)
640 PRINT ::"ENTER CHEQUES NOT
CLEARED AND BANK CHARGES NOT
ENTERED IN CHEQUE EGISTER."::
650 FOR X=1 TO 25
660 INPUT "CHEQUE NUMBER ":C$(1
,X)
670 IF LEN(C$(1,X))=0 THEN 770
680 PRINT
690 INPUT "PAYEE ":C$(2,X)
700 PRINT
710 INPUT "DATE (DY/MTH) ":C$(3
,X)
720 PRINT
730 INPUT "AMOUNT $":C(X)
740 C(26)=C(26)+C(X)
750 PRINT
760 NEXT X
770 PRINT ::"ENTER DEPOSITS NOT
RECORDED AND BANK CHARGES NOT ON
BANKSTATEMENT." ::
780 FOR Y=1 TO 15
790 INPUT "DATE OF DEPOSIT/CHAR
GE (DY/MTH/YR) ":D$(Y)
800 IF LEN(D$(Y))=0 THEN 860
810 PRINT
820 INPUT "AMOUNT $":D(Y)
830 D(16)=D(16)+D(Y)
840 PRINT
850 NEXT Y
860 B(A)=B(2)+C(26)-D(16)
870 IF B(1)<>B(A)THEN 920
880 CALL CLEAR
890 PRINT "***** CONGRATULATIONS
*****":::" YOUR CHEQUEBOOK
RECONCILES":" WITH THE BANK
STATEMENT"::::::::
900 GOSUB 1370
910 GOTO 960
920 CALL CLEAR
930 PRINT "********** OOPS! ***
*******":::" YOUR CHEQUEBOOK DOES
NOT":" GREE WITH YOUR"
940 PRINT " BANK STATEMENT"::::
:::
950 GOSUB 1370
960 REM PRINT RECONCILIATION
970 CALL CLEAR
980 PRINT TAB((28-((LEN(A$(1))
+(LEN(A$(2))))))/2);A$(1);"
";A$(2)
990 PRINT TAB((28-(LEN(A$(3)))
/2);A$(3)
1000 PRINT TAB((29-((LEN(A$(4
)+(LEN(A$(5))))))/2);A$(4);",";A
1010 PRINT TAB((28-(LEN(A$(6
)/2);A$(6)
1020 PRINT
```

SUPER-MODULE

Adding 8K to Your E/A Module

by Ron Gries and Jonn Clulow
New Horizons

Questions about this project may be directed to Ron Gries:

(419) 874-1414

The project described here adds 8K of RAM memory to the Editor/Assembler Module. At the present time a circuit for battery backup is not available. We hope to present one sometime in the near future (when Ron gets time to do it). But you should find the 8K addition useful even without battery backup and especially so if you do assembly language programming.

As usual, neither Ron and I nor the New Horizon users group can assume responsibility for any loss or damage arising from the information presented here. We also do not assume responsibility for its accuracy or completeness. If you decide to attempt this project, you do so entirely AT YOUR OWN RISK.

The memory used is the Hitachi CMOS HM6264P-15 ($34.95). If you want the capacity for battery backup later on, you'll need the more expensive version ($39.95). Prices on both devices will probably drop in the next few months. One source of the RAM chip is JDR Microdevices, 1224 S. Bascom Ave., San Jose, CA 95128 Ph: (800) 538-5000.

(check out elsewhere in the newsletter where this chip is available for $20 Cdn. - ed.)

Another required item is a TI game module which is foiled on both sides. To determine this, push back the sliding door and see if there is metal showing on both sides of the edge card. Several games have such a board; we happened to use a Munch Man module which was purchased for $.99.

You'll also need an Editor Assembler module, of course. Because the project involves transplanting the E/A GROM chip, it does involve some risk of destroying the E/A module! It is a good idea NOT TO TRY IT WITH AN E/A MODULE YOU CAN'T AFFORD TO LOOSE.

The only other parts you'll need are a 1K resistor (eg., Radio Shack 271-023) and some insulated wire - preferably wire wrap (eg., 278-501). You'll also need a vacuum type solder remover, rosin core solder, and a soldering pencil.

We strongly recommend that if you have had no prior experience handling CMOS devices, desoldering components from printed circuit boards, etc. you should ASK SOMEONE TO HELP YOU.

First unscrew the shell of the game module and open it by pulling the case apart at the ends of the slotted side. Remove the PC board while holding the sliding door down. Note the position of the spring device and the grooves it fits into in the sliding door. Note that the spring is on the UNDERSIDE of the PC board.

Unsolder and remove the GROM and ROM chips. They should be located as shown in FIG. 3. The ROM chip is the larger of the two. To remove them heat each solder connection on the underside of the board and use the vacuum device to remove most of the solder. Then gently pry up on one end of the device while heating pins on the underside of the board at the same time.

A capacitor should be located next to pins 21-24 of the ROM. Desolder the ground end from its soldering pad, leaving the +5V end (nearest the back of the board) attached. With a knife carefully break the foil between the two adjacent soldering pads where the capacitor was connected FIG. 2. Then resolder the ground end of the capacitor to the pad on the right. Finally, solder one end of a short piece of wire to the pad on the left (where the capacitor used to be) and the other end to hole 18 of the removed ROM (See FIG 1 for pin numbering). This will be the seventh hole from the back of the board on the side closest to the capacitor.

When a command module is inserted, it normally resets the computer. If you want to disable this auto-reset in the new E/A module, remove the resistor at the opposite end of the board (See FIG 3).

Figure 1 gives a pin diagram of the HM6264 RAM with a typical 4K ROM superimposed. You will note that the actual width of the two chips is identical, but the RAM is longer. The ROM is drawn narrower simply for clarity in showing corresponding pin numbers. In the following, all pin numbers will be preceded with "ROM" or "RAM" to indicate which numbers are involved.

In handling the CMOS RAM chip take precautions to minimize static electricity. Don't work on carpet, touch a ground before handling the device, handle it by the plastic body, and touch the pins as little as necessary. When soldering, hold the pencil on the pins for the least time required to make the connection - try not to use more than 1 to 2 seconds. Remove the RAM from its anti-static tube. Figure 1 is a top view. Place the device on its side on a table or other flat, hard surface and move the body of the device to bend the pins closer to a right angle with respect to

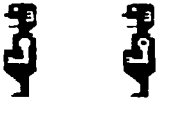
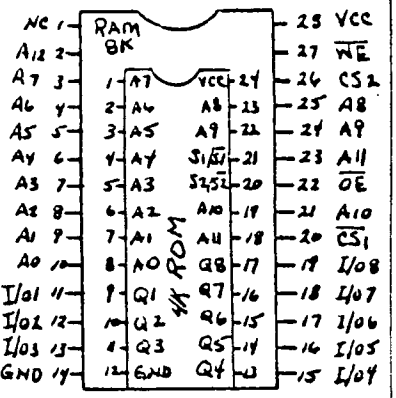


FIG.1



HM6264P(LP)-15 (LARGER)
Superimposed ON
ROM IC (SMALLER)

the body. Do this for both rows of pins, and check to make sure that the pins roughly line up with the holes in the game PC board. Orient the chip as in FIG 1 and bend RAM pins 1 2 20 27 and 28 straight out. Now insert the RAM into the game PC board such that the notched end is flush with the back of the board RAM pin 3 should go in ROM hole 1, RAM pin 26 into ROM hole 24 etc.

With the RAM in place, solder in one pin on each side to hold it. Connect a wire from RAM pin 27 (bent up) to the Write Enable pin on the edge connector. This is the third one from the left looking at the top of the board (FIG 3) and it is not connected by foil to the PC board. Connect a wire from RAM pin 2 (bent up) to Address line 12 on the edge connector (7th pin from the left). This edge pin also doesn't have a foil connection to the board.

Solder a short wire form RAM pin 20 (bent up) to RAM pin 22. It will be relatively easy to solder one end of the wire to RAM pin 20 but RAM pin 22 is in a hole and a little more difficult to get at. Solder the wire as close to the board as possible using as little solder as possible. Solder one lead of the 1K resistor in the soldering pad just below the left side of the GROM holes. This pad is in a foil path leading form the gnd end of the capacitor to the right-most edge card pin. The resistor lead can be pushed through the hole. Solder the other end of the resistor lead to RAM pin 20 (bent up).

Solder a short wire form the +5 end of the capacitor lead (nearest to the back of the board) to RAM pin 28 (bent up).

Now all that remains is to install the E/A GROM. Open the E/A module and remove the PC board. Unsolder and remove the GROM using the same procedure as above. Place the E/A Grom on the new board in the holes left by the old GROM with the notched end of the GROM toward the back of the board.

Finally, solder all IC pins in their respective pads for both the RAM and GROM. Place the spring in the BOTTOM of the E/A module case, locate the sliding door properly, put the new PC board in place, and snap the case closed. Then replace the screw.

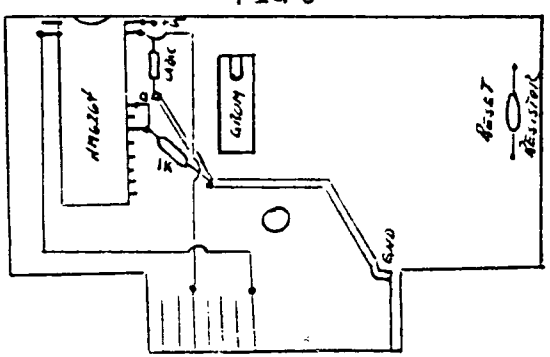
The first thing to do is make sure your E/A GROM still works OK. Then you can test out your RAM with the following program.

```
100 INPUT "NUMBER 0-255? ":X
110 CALL LOAD(24576,X)
120 CALL PEEK(24576,X)
130 PRINT "MEMORY HAS ";X
140 PRINT
150 GOTO 100
```

When you enter a number from 0 to 255, you should see the same number displayed on the screen having been stored by 110 and read by line 120. If the number the computer returns is different from the one you entered, the device is not working properly. Remove it and retrace all steps above until you find the problem. The address 24576 is >6000. Your new RAM goes from >6000 to >7FFF or in decimal from 24576 to 32767. You may want to check out several addresses in this range to make sure they are working properly.

There are a number of things you can use the new RAM for. In assembly language programs you can use an AORG >6000 directive to have the loader place your object code in the new RAM. Alternatively, you can change the First Free Address in High Memory (FFAH) to >6000 with a CALL LOAD(8228,96,0) and then load your program with a CALL LOAD("DSK1.NAME") as usual. If you plan to load other programs, you can change the FFAH back to >A000 by CALL LOAD(8228,160,0).

FIG 3



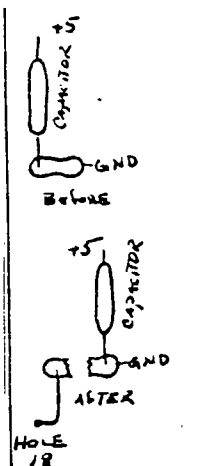


FIG. 2

Profile

This month's edition of Profile takes a look at a programming effort by one of our members, Jason Keltz. Jason is a twelve year old programmer who's been at it for a year and a half.

Last meeting, he presented me with a copy of PRO WRITER, a word processor written in ExBasic, which he had written himself.

Although the program is a very basic word processor, I was amazed with the ingenuity presented. You can LOAD and SAVE files, get a DISK DIRECTORY, CHANGE your story TITLE, EDIT your story, PRINT your story, SEE your TEXT, and even CHANGE your screen COLOUR or CURSOR SPEED.

I was asked to review this program and I put it through its paces. It is not as easy to use as TI-Writer, but, good enough if all you want to do is emulate a type-writer.

The program comes on a disk and needs 32K to run. The documentation that comes with it is straightforward and easy to understand.

Jason also mentioned to me that he wanted to sell copies of PRO WRITER through the club so that he could buy himself a modem. To get yours at $10.00, you can contact Jason at (416) 667-8241. Call after 5:00 to let him get home from school and be sure to ask for Jason, his mother doesn't understand computers.

I M P O R T A N T

N O T I C E

To those who feel that their survey forms are useless and unimportant, let me remind you that I am still waiting for more than 100 of them. How are we supposed to make changes if you do not bother to participate. Please !!!

Transliterates

Dave Harrison

COMMAND	FUNCTION	KEY
.TL 35:27,71	Double strike on	# (pound)
.TL 43:27,72	Double strike off	+ (plus)
.TL 60:27,15	Compressed mode on	<
.TL 62:27,18	Compressed mode off	>
.TL 123:27,14	Expanded mode on	{
.TL 125:27,20	Expanded mode off	}
.TL 92:27,77	Elite mode on	\
.TL 47:27,80	Elite mode off	/
.TL 61:27,52	Italics on	=
.TL 126:27,53	Italics off	~ (tilde)
.TL 96:27,45,49	Underline on	` (grave)
.TL 37:27,45,48	Underline off	%

The above transliterate commands work with the Epson RX80 printer. They must be formatted to work.

Transliterate commands are to be typed in prior to the body of the text, (lines 001, 002, 003, etc.). The first number assigns a key, (eg. J5 = #); the second number is the ESC, which is 27; the third number is the new value of the key first chosed. Naturally one should not pick a key that is commonly used in writing!

I use these commands by placing them on a file which I call "FUNCTIONS" which I can load when I enter the Text Editor. In fact, the file is saved on the same disk that I have TI-writer saved in order to save time.

```
1030  PRINT  TAB((28-((LEN(A$(7))
)+10))/2);"ACCOUNT # ";A$(7)
1040 PRINT
1050 PRINT "  CHEQUEBOOK  RECONCI
LIATION":
1060  PRINT  TAB((28-(LEN(A$(8)))
)/2);A$(8)
1070 PRINT ::
[illegible] 1370
[illegible] "CHEQUE  REGISTER  $";
B(2)
1100  PRINT  :"ADD CHEQUES NOT CL
EARED";:
1110 PRINT "NO.  DATE PAYEE  AMOU
NT"::
1120 FOR X=1 TO 25
1130 IF C(X)=0 THEN 1160
1140  PRINT  C$(1,X);TAB(4);C$(3,
X);TAB(10);C$(2,X);TAB(19);"$";C(X)
1150 NEXT X
1160  PRINT  TAB(19);"--------":"
TOTAL";TAB(19);"+";C(26)
1170  PRINT  :"LESS  DEPOSITS NOT
CREDITED":"AND BANK CHARGES"::
1180  PRINT  "DATE";TAB(20);"AMOU
NT"::
1190 FOR Y=1 TO 15
1200 IF D(Y)=0 THEN 1230
1210  PRINT  D$(Y);TAB(19);"$";D(
Y)
1220 NEXT Y
1230  PRINT  TAB(19);"--------":"
TOTAL";TAB(19);"-";B(16)
1240  PRINT  TAB(19);"--------":"
TOTAL                          PER
CHEQUE":"REGISTER";TAB(19);"$";B(A
1250  PRINT  TAB(19);"--------":"
BALANCE                        PER
[illegible]":"STATEMENT";TAB(19);"$";B(1)
1260  PRINT  TAB(19);"________":T
AB(19);"--------"
1270 PRINT  :"ANOTHER  RECONCILIA
TION (Y/N)"
1280 CALL [illegible]ND(150,1397,5)
1290 CALL [illegible]0,K,S)
1300 IF S=0 THEN 1290
1310 IF K=78 THEN 1330
1320 IF K=89 THEN 270 ELSE 1290
1330 CALL CLEAR
1340 PRINT " GOODBYE":::::::::
1350 GOSUB 1370
1360 END
1370 FOR DELAY=1 TO 500
1380 NEXT DELAY
1390 RETURN
1400 CALL CLEAR
1410  PRINT  " CHEQUEBOOK RECONCI
LIATION":"
----------":::
```

FROM OUR LIBRARY

Starting in February and hopefully continuing every month, the library committee has been commissioned to report to the membership on the contents of the disks in our library. Since we lack the space to give every program on every disk an indepth description, we will be limited to giving the contents of each disk, but only describing some of the programs. Also, copies of the described disk will be available from the librarians in either cassette or disk form during our monthly meetings. Many thanks to Nicos Evdeman for making this possible.

LIBRARY DISK 99LIBBCA05

Nicos Evdeman

AIR/COMBAT	BASIC	CAMEL	BASIC	MINER-II	BASIC
BASERALMAT	BASIC	GOLD-MINER	BASIC	TENNIS-ENG	BASIC
BOXING	BASIC	HANGMAN	BASIC	ZOMBIE	BASIC

AIR/COMBAT: After reading the 4 screens full of creative instructions, I was ready to lead my hypersonic aircraft squadron with speeds over 3,000 knots, against the enemy and all odds. Then came the runway and took me up into the clouds with the speed of a beat up old Hercules. The instructions are the best part.

BASERALMAT: An excellent program for children to learn their math. A baseball diamond is displayed as well as a mathematical problem. Get it right and you run to the next base else its a strike. Fun while learning. All educational games should be this good.

BOXING: Two players can have a three round fight. The punching in this game gets rid of only the small frustrations.

GOLD-MINER: You have to dig deeper and deeper to reach the gold vein. Your dynamite charges are limited and deadly traps are everywhere.

HANGMAN: A very nice version with a huge guillotine, so you are sure to see your self hang. You can change the word data to suit your needs.

MINER-II: Load from cassette with the PE Box turned off. This game is so much fun that I removed the instructions to let me load it from disk. It's a great feeling digging and collecting all that gold with still more to collect, but watch out for that quick end with shafts collapsing or being flooded.

TENNIS-ENG: This is a different kind of tennis, in that there is a hole in the net. You move the net back and forth to let the ball into your opponent's court. Very imaginative.

ZOMBIE: The program lists but will not load! HELP

** Notice **

As we all know, there are quite a few programs in our library that either lack proper instructions or need to be debugged. Any member, who debugs a library program and can supply written documentation for the program (see Programming Committee for standards), will receive FREE of charge, the contents of any disk in our library. For all the others, we will print the modifications here so that you can all change your versions.

- the Library

from the LAWS OF COMPUTER PROGRAMMING

01 RULES OF PRATT

03 IF A SERIOUS PROBLEM HAS BEEN ITSELF, NO SOLUTION IS ACCEPTABLE UNLESS IT IS INVOLVED, EXPENSIVE, AND TIME CONSUMING.

03 SUFFICIENT MONIES TO DO THE JOB CORRECTLY THE FIRST TIME ARE NOT AVAILABLE; HOWEVER, AMPLE FUNDS ARE ALWAYS MORE EASILY OBTAINED FOR REPEATED REVISIONS.

01 GROSCH'S LAW

03 COMPUTING POWER INCREASES AS THE SQUARE OF THE COST INCREASES. IF YOU WANT TO DO IT TWICE AS CHEAPLY YOU HAVE TO DO IT FOUR TIMES AS FAST.

03 TWENTY PER CENT OF THE COMPONENTS ACCOUNT FOR EIGHTY PER CENT OF THE COST, AND SO FORTH.

01 WEINBERG'S LAW

03 IF BUILDERS BUILT BUILDINGS THE WAY PROGRAMMERS WROTE PROGRAMS, THEN THE FIRST WOODPECKER THAT CAME ALONG WOULD DESTROY CIVILIZATION.

New Members

As of press time here are the names of new members

James Stittle	105-580 Eyer Drive	PICKERING	L1W 3B7
Cindy Girard	176 Spruce Street	AURORA	L4G 2P3
Christopher Sorley	279 Rusholme Road	TORONTO	M6H 2Y9
Harry Fox	36 Brewsland Crescent	THORNHILL	L3T 6E2
G Harvey Weston	701-53 Warrender Ave	ISLINGTON	M9B 5Z7

We at 9T9 welcome you !!!

* *

FOR SALE

Shugart 400L SS/DD disk drive ($100.00), FORTH disk and manual ($30.00), Munchman cartridge ($10.00), Parsec cartridge ($10.00), Jawbreaker cartridge ($10.00) - call Emile (416) 633-1451.

* * * * * * * * * *

FOR SALE

Shugart 400l SS/DD disk drive ($100.00), console and ExBasic ($225.00) - call Tork Hillary anytime (416) 284-8988.

* * * * * * * * * *

FOR SALE

1 - CSI - "Super Copy" - disk copy program - (in any format) $20.00, 1 - FFF Software - "TI-Astroids" - on cassette $15.00, 1 - NOT-POLYOPTICS - "Backgammon" - on cassette $15.00, call Larry Myers after 6:00 pm (519) 821-4753.

* *

CHEAP CHIPS

A phone call this month from another member, Elliot Grassett, pointed me in the right direction for acquiring cheap chips for the 32K expansion in last months issue and the E/A module expansion in this months issue.

Active Electronics on 14 Carlton Street in Toronto, has the Hitachi CMOS HM6264P-15 chip for $16.00 Cdn.

Their phone number is (416) 977-7692. It is advisable to phone ahead, as they may not be in stock When I called, they said it would take a week to get them.

LETTERS

from A9CUG CALL NEWSLETTER

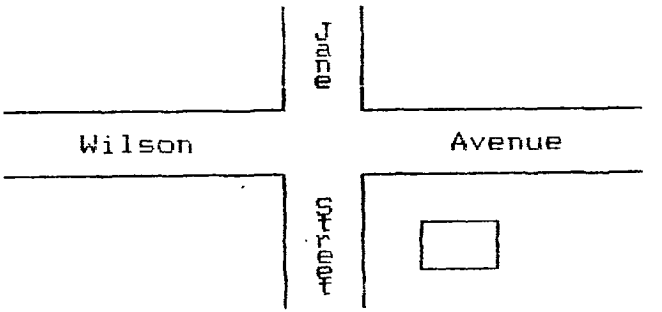
A SHORT, EASY, BEGINNERS PROGRAM

```
100 CALL CLEAR
110 CALL SCREEN(5)
120 FOR A=1 TO 12
130 CALL COLOR(A,2,8)
140 NEXT A
150 CALL CHAR(130,"")
160 CALL COLOR(13,5,5)
170 CALL VCHAR(1,31,130,96)
180 CALL VCHAR(1,3,32,672)
190 GOTO 190
```

DO NOT EVERYBODY LIKE TO MAKE LETTERS AROUND THE SCREEN?

map of our new meeting place
2141 Jane Street

the meeting will be held in the auditorium which is in the basement of the library



The Library is the grnd floor of an office building