

"HARDCOPY"
is a publication of
TI-RUNNERS
Calgary, Alberta

The executive members are:

Ray Smulan.....PRESIDENT
Alex Ivey.....VICE-PRESIDENT
Tim Shilson.....TREASURER
Bruce Travis.....SECRETARY

Additional positions held are as follows:

PURCHASING DIRECTOR.....George Gaab
PROGRAM DIRECTOR.....Bob Hurst
LIBRARY DIRECTOR.....Alex Ivey
LIBRARY MANAGER.....Phil Treadgold
LIBRARY MANAGER.....Steve Treadgold
EDITOR IN CHIEF.....Bruce Travis

Single copy cost is \$.50/issue for non-members. Subscription rates are included in the annual membership fee as outlined in the section of "MEMBERSHIPS". Back issues are available to all members free of charge and on a retroactive basis and to non-members at the single copy cost. Subject to availability. The library also maintains a copy available if you have TI-Writer. Issues will be mailed out to members subject to a surcharge of \$3.00 for postage and handling. Articles and contents are to serve the TI-RUNNERS users group and are welcome from all sources. Advertising of products are not endorsed by this newsletter or by the group members. Accuracy of publication of programs cannot be guaranteed and will be corrected in future issues as required. Submissions must be submitted to: BRUCE TRAVIS, 5551-4 AVENUE N.E., CALGARY, ALBERTA, T2A 3X9 by the last meeting of the month.

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EDITOR'S CORNER



It's a good feeling to see that you're able to do something that others appreciate. That's the way that I look at our users group. Everyone of us has something to offer that someone else needs. When we get together to get a task done and everyone helps to do it, it's over before you know it. That's

what transpired at the meeting to restructure the library. For one or two persons to do it, would have been too monumental, yet with a half dozen members all pitching in, it became achievable. A special thanks to those in attendance. If you were unable to attend there will be other activities that will come up in the future.

I have come to enjoy producing the newsletter and hope that we will be able to maintain its publication as long as the group is around. I hate to see members fall by the wayside but these things do happen. Some may have stopped using their equipment because of lack of purpose. Our group can get them involved in something that they can benefit others with. If some have moved on to higher levels of computing then we'd like to get them back and have them share their knowledge with the layman and inexperienced. If they have become discouraged with their TI because they can't get any hardware or software then they have not been coming out to the users meetings, because a lot of things are happening out there. If you doubt this statement then read our subscription of MICROpendium.

Are you having problems with a bug in your program? Why not bring it to the meetings where we can get rid of it for you. Chances are that someone has been down that road and has already solved it.

Bruce H. Travis, E.I.C.

MEMBERSHIPS



Memberships are now due and will run from October 1st or as issued to the following September 30th. This will enable all memberships to become due at the start-up in the fall. To allow for late registrants, we are using a sliding scale fee structure with a minimum fee. The dues are as follows:

<u>MONTH</u>	<u>ADULT/FAMILY</u>	<u>STUDENT</u>
October	\$20.00	\$15.00
November	18.00	14.00
December	16.00	13.00
January	14.00	12.00
February	12.00	11.00
March-September	10.00	10.00

THE FOLLOWING LIST IS THE LATEST UP TO DATE LIST OF MEMBERS AND ALL CORRECTIONS HAVE BEEN MADE TO THIS LIST. PLEASE DISREGARD THE PREVIOUS LIST AS IT WAS FIRST PUBLISHED. NOTE THE FIRST LINE CODES. EXPLANATION IS AS FOLLOWS: MEMBERSHIP NUMBER / EXPIRY DATE OF MEMBERSHIP / 000-UNPAID NEWSLETTER MAILOUT, 300-PAID NEWSLETTER MAILOUT / PHONE NUMBER

#201/EXP860930/000/2351321
RAY SMULAN
3221 DOVER ROAD S.E.
CALGARY, ALBERTA, T2B 1V5

#202/EXP860930/000/2733792
BRUCE TRAVIS
5551-4 AVENUE N.E.
CALGARY, ALBERTA, T2A 3X9

#203/EXP860930/000/2481341
DON SMYTHE
4120 MARBANK DRIVE N.E.
CALGARY, ALBERTA, T2A 3J1

#204/EXP860930/000/2699302

TIM SHILSON

#206, 609-2 AVENUE N.E.

CALGARY, ALBERTA, T2E 0E9

#205/EXP860930/000/2778572

ALEX IVEY

1030 RUNDLE CRESCENT N.E.

CALGARY, ALBERTA, T2E 5M2

#210/EXP860930/000/2834793

STEVE TREADGOLD

418-16 STREET N.W.

CALGARY, ALBERTA, T2N 2C1

#211/EXP860930/300/2481710

BARRY ROBINSON

2632-16 AVENUE S.E.

CALGARY, ALBERTA, T2A 0M4

#212/EXP860930/300/2776990

MIKE REMEZOFF

#103, 127-11 AVENUE N.W.

CALGARY, ALBERTA, T2B 0B7

#213/EXP860930/000/2730953

FRED HORNUNG

4919 FOURIER DRIVE S.E.

CALGARY, ALBERTA, T2E 0S9

#214/EXP860930/000/2512382

GERRY JOHNSTON

#23, 2225 OAKMOOR DRIVE S.W.

CALGARY, ALBERTA, T2V 4N6

#215/EXP860930/000/2724497

BOB HURST

4628 MARCOMBE ROAD N.E.

CALGARY, ALBERTA, T2A 3G5

#216/EXP860930/300/2737833

DAVE SISLEY

1319-68 STREET N.E.

CALGARY, ALBERTA, T2A 5Y7

#217/EXP860930/000/2856570
FRED CLARK
35 FALTON DRIVE N.E.
CALGARY, ALBERTA, T3G 1K6

#218/EXP860930/300/2727218
GEORGE GAAB
732 FORTALICE CRESCENT S.E.
CALGARY, ALBERTA, T2A 2E1

#219/EXP860930/000/2728657
ED BUSER
3045-29'A' STREET S.E.
CALGARY, ALBERTA, T2B 0S4

#220/EXP860930/000/2841334
NANNETTE BLAIR
191 CARDIFF DRIVE N.W.
CALGARY, ALBERTA, T2K 1S1

#221/EXP860930/000/2731566
JERRY DRISCOLL
4314-6'A' AVENUE S.E.
CALGARY, ALBERTA, T2A 3A9

#222/EXP860930/000/2849513
CHRIS HUGHES
1323-14 STREET N.W.
CALGARY, ALBERTA, T2N 2A6

#223/EXP860930/000/2425975
AL JESCHKE
4019-5 AVENUE S.W.
CALGARY, ALBERTA, T3C 0C2

#224/EXP860930/000/2858176
PETER KUCZAJ
119 WHITEHORN ROAD N.E.
CALGARY, ALBERTA, T1Y 2A1

VISITORS



WELCOME! We hope that you have enjoyed yourselves and we extend an invitation to become part of our group and enjoy the benefits that we have to offer.

BUSINESS MINUTES

EXECUTIVE - JANUARY 26/86



The meeting was called to order by Ray at 1:20pm at Ray's home with the following members present: Ray

Smulan, Alex Ivey,

Tim Shilson, Bruce Travis and George Gaab.

Tim Shison turned in his resignation and after acceptance by the Executive it was discussed that Ray would approach Fred Hornung as a replacement. The result of this would then be announced at the general meeting.

The amalgamation of the 99ers with the TI-Runners was discussed with the pros and cons being expressed. It was agreed that Ray would approach their executive with regards to a partial integration of the two groups; such as keeping the two meetings separate but make available the exchange of ideas and information on our common TI. Ray Smulan will report on the results at the next meeting of our group.

George Gaab presented a proposal of ideas that he has with regards to a Purchasing Committee and their objectives. It was agreed that Ray would transfer his auxiliary position of Library Director to his vice president, Alex Ivey. With this transfer of duties, we felt that we should archive selected programs that have been on file for some time such as games while at the same time cataloguing them and getting rid of any duplication and/or faulty programs. This would then free up the library for the dispersing of the newer and more interesting programs that

we have acquired lately. These programs would then be the target of the library managers to provide reviews for the newsletter so that members would have a record to look back on when wanting specific programs or games that may be of interest to them. This should start immediately so that we are ready for the new programs that we are about to order from Stoneware.

With regards to the library, thanks to the efforts of Fred Clark's family, we now have the following manuals on disk in the format of QS Writer: Companion, SXB, Data 99, and Futura Household Inventory with more to come. We are also going to itemize the available manuals that the group has for sale and list them in the next months issue of HARDCOPY. This would be done by Ray and submitted to Bruce for pricing based on the previous records.

Tim suggested that we consider a booth at the Business Computer Show in March, to advertise our group and what it is all about. Along the same idea we could look at making a Beta tape for Cable 10 under community clubs.

It was discussed that the group built the 32K matchbox console expansion unit and hook up a boxcar controller and drive for the use at the meetings. Alex Ivey would investigate the availability of these boxcar drives since the 99ers are rumored to have several for sale. He is to then report back to the Executive regarding the cost and availability.

The meeting was adjourned at 2:45.

GENERAL MEETING - FEBRUARY 6/86

*★ Special
★ News:*

The meeting was called to order at 7:45 with 12 members present.

Peter Kuczaj was welcomed and introduced to the Executive as the latest member to join. Welcome Peter.

Ray Smulan reported that he had not yet contacted the 99ers Executive about the merger.

It was announced the the next couple of weekends would be set aside to house-clean and

re-catalogue the Library. We would also be archiving old programs that we did not want to get rid of on George Gaabs DSDD drives.

Alex Ivey was announced to be the new Library Director.

Bob Hurst will now be heading up the Program Committee with Peter Kuczaj as his assistant.

Tim Shilson's resignation has been accepted and we are now in need of a new Treasurer. This position must be filled immediately since the group cannot purchase anything until the books have been reassigned. Nominations are now open. Please see Ray if you are interested.

The Purchasing Committee is as follows:

Dave Sisley - Local Area and Catalogue

Don Smythe - Special Suppliers

George Gaab - Freeware Purchasing

George Gaab again mentioned that we receive special discounts when we place orders of three of one kind or a total of five cards of any mix.

Tim Shilson reported that the group has approximately \$167 in the Bank.

Ray Smulan reported that he would contact the 99ers about a joint entry in the upcoming March Computer Show.

The downloading of programs from "The Source" was discussed but was tabled until the Library was reorganized.

Tim Shilson loaned a console to the group for purposes of installing the on board memory expansion and subsequent use at the meetings.

Tim Shilson also reported that Millers Graphics has a very good book called "Multiplan Illustrated" and that he would be taking orders providing he received up-front payment.

It was discussed and agreed that a collection would be taken from those members who have and are using DM 1000 and contribute \$30 to the company in appreciation of their "Freeware". This would then open the doors to future programs and enhancements.

Ray Smulan requested a volunteer for the position of Correspondant with the other users groups and provide the exchange of newsletters.

Gerry Johnston stepped forth and will be assisted by Barry Johnston. Thanks guys.

Until we hear back about "DataMan" we will tentatively set the cost of this program and manual at \$10.00 subject to final costs to the group. George Gaab will be the groups spokesman regarding any correspondence here. Tim Shilson reported that he has access to plastic ten disk black boxes at the cost of \$2,70 each. If you are interested please see Tim.

It was announced that the 99ers now have their BBS operational.

Motion of adjournment at 8:30.



GENERAL MEETING - FEBRUARY 20/86

Meeting was cancelled because the school would be closed for Teacher Conventions.



FEATURE ARTICLE

INTRODUCTION TO ASSEMBLY LANGUAGE BINARY AND HEXADECIMAL NOTATION

The machine language is the form of binary code. Binary refers to the numbering system on which computers are based—the binary, or base two, system. The binary is necessary for programming in assembly. Your computer could be thought of as a vast array of miniature switches, each of which may be on or off. Each of these switches is referred as a bit. The On/Off status of a bit can be used to represent many things: High or Low, Yes or No, Hot or Cold, or the value one and zero. If a bit is on it represents one, if the bit is off it represents zero. Only two numbers are used (one, zero) this system is called binary.

The numbering system you are used to is the decimal system, base ten. When representing a

value with a decimal number, the numeric symbols actually represent powers of ten. So, the decimal number 42,139, can be broken down as follows:

$$\begin{array}{r}
 10^4 = 10\ 000 \quad 4 \times 10\ 000 = 40\ 000 \\
 10^3 = 1\ 000 \quad 2 \times 1\ 000 = 2\ 000 \\
 10^2 = 100 \quad 1 \times 100 = 100 \\
 10^1 = 10 \quad 3 \times 10 = 30 \\
 10^0 = 1 \quad 9 \times 0 = \underline{9} \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad 42\ 139
 \end{array}$$

The same rules apply to numbering systems with bases other than ten. A single can only be represented by 1 or 0. A byte is a series of eight bits taken as one unit. Sixteen bits is equal to two bytes, or one word. Here is a byte, represented by eight numbers, each of which can only be a one or a zero:

00001101

In binary system, each position represents an exponential power of two. Zero's have no effect on the expression, so just examine the four on the right. These are sometimes called the low order bits, or least significant bits.

Bit Value	1	1	0	1
Place Value	EIGHT	FOUR	TWO	ONE
Exponent	3	2	1	0
Base	2	2	2	2

This bit represents the value 13, if taken as a binary number. Here is how you can represent this value as a decimal number:

$$\begin{array}{r}
 1 \times 8 = 8 \\
 1 \times 4 = 4 \\
 0 \times 2 = 0 \\
 1 \times 1 = \underline{+1} \\
 \qquad \qquad \qquad 13
 \end{array}$$

What value does the following byte contain?

00000110

If you said "six", your right.

Hexadecimal numbers are indicated by the greater-than symbol (>) immediately preceding the number (e.g., >10). Digits above 9 are represented by six letters of the alphabet (A-F). "A" represents ten, "B" represents eleven etc., up to fifteen which is "F". Thus, a byte of data can be represented in hex with just two digits instead of eight. For Example:

DECIMAL	BINARY	HEX
1	00000001	>01
2	00000010	>02
3	00000011	>03
4	00000100	>04
5	00000101	>05
6	00000110	>06
7	00000111	>07
8	00001000	>08
9	00001001	>09
10	00001010	>0A
11	00001011	>0B
12	00001100	>0C
13	00001101	>0D
14	00001110	>0E
15	00001111	>0F
16	00010000	>10
32	00100000	>20
33	00100001	>21

The largest value of a word is binary 1111111111111111, hex > ffff, or decimal 65 535.

Suppose you wanted to compute 16-10. The computer cannot actually subtract, so it has to perform two's complement addition. The value to be subtracted is converted to two's complement format and add to the first value. You get the same answer, the two's complement of a value is said to be negative. To do the problem above, examine the bit values before, after and during two's complement arithmetic. Since both numbers are small enough, you can use one byte (eight

bits) to represent each amount.

<u>BINARY</u>	<u>DECIMAL</u>	<u>HEX</u>
Value#1 00010000	16	>10
Value#2 00001010	10	>0A

This has been just a brief introduction to assembly language. This is the first part of Chapter 2 and will be continued in next months issue of the newsletter, so until then please be patient.

LIBRARY



The TI-Runners' library is restricted to paid-up members only and non-members are NOT allowed to buy any program from the group.

THE TRADING POST



One full height SSSD disk drive c/w power supply in its own housing for \$125.00. Call Tim Shilson at 269-9302.

Extended Basic Command Module for \$65.00. Call Tim Shilson at 269-9302.

Complete system to be sold in part or as a whole. 1 black/silver console, PEB c/w 2-slim line DSSD drives, 32K card, RS232 card, Accoustic Modem, computer desk and Admate Printer plus all software. Call Tim Shilson at 269-9302.

Signalman III direct connect modem for \$150.00 O.B.O. and Signalman VII auto answer and auto dial modem for \$250.00 O.B.O. Call George Gaab at 272-7218.

Boxcar RS232 direct connect to console port for \$125.00. Call Dave Sisley at 273-7833.

One pair of T.I. Dual Cassette Cables at \$10.00 each. Call Gerry Driscoll at 273-1566.

Black/silver console c/w two joysticks for \$75.00. PEB System c/w SSSD drives for \$450.00. T.I. Extended Basic Module for \$65.00. Sams T.I. Games Book c/w cassette and T.I. 99/4A Game Program Book both for \$20.00. In modules; Parsec, Munchman, Tunnels Of Doom and Football for \$10.00 each. Indoor Soccer for \$20.00 and Video Chess for \$25.00. In disks; Personal Financial Aids, Beginners Basic Tutor and Programming Aids II for \$10.00 each. In tapes; Music Skills Trainer, and The Composer Music Box for sale to best offer. Call John Bronius at 285-3650.

Parsec and Invaders Modules and Personal Record Keeping for \$10.00 each. Call Gerry Driscoll at 273-1566.

PHT6007 cassette driven Teach Yourself Basic in original box for \$10.00. Call Bruce Travis at 273-3792.

AMA Business Programs including Mailing List, Accounts Receivable, Inventory Control and General Ledger for \$110.00/set. Call George Gaab at 272-7218.



INFO CORNER

I WILL HAVE SOMETHING TO REPORT IN NEXT MONTH'S ISSUE OF HARDCOPY.

TI CALENDAR

Meetings are held every second Thursday, starting JANUARY 9, 1986

MAR.

2	3	4	5	6	7	8
61	62	63	64	65	66	67
9	10	11	12	13	14	15
44	49	70	71	72	73	74
16	17	18	19	20	21	22
75	76	77	78	79	80	81
23	24	25	26	27	28	29
82	83	84	85	86	87	88
30	31	..	..	..	..	..
89	90	..	..	..	..	..

from 7:00-9:30pm in Science Room #21 at Dr. G. M. Egbert Community School - 6033 Madigan Drive N.E. Take a couple of hours out and come to your meeting.

T I B I T S

TIGERCUB TIPS FOR BEGINNERS -

018



Who needs line numbers, anyway? Try keying this in, without line numbers (in Extended Basic) DIM S(36)::F=262::FOR N=1 TO 36::S(N)=F*1.059463094 N::NEXT N

(Enter) FOR J=1 TO 10000::CALL SOUND(-99,S(INT(35*RND+1)),0)::NEXT J (Enter)

019

Here's another one. Key this in to your friend's computer while he is getting you a beer. M\$="018243C425A667E" (Enter)

FOR C=128 TO 143::FOR L=1 TO 6::CS=CS&SEG\$(M\$(INT(8*RND+1))*2-1,2)::NEXT L::CALL CHAR(C,"00"&CS)::CS="":NEXT C::CALL CLEAR (Enter)

Now, when he gets back with the beer, let your left pinkie rest on the CTRL key while you type in any of the letters A through O, and show him that his computer has a built-in Mongolian alphabet!

One more - FOR CH=65 TO 79::CALL CHARPAT(CH,CH\$)::FOR J=1 TO 16 STEP 2::X\$=SEG\$(CH\$,J,2)&X\$::NEXT J::CALL CHAR(CH+64,X\$)::X\$="":NEXT CH (Enter) CALL CLEAR (Enter)

Again, hold down the CTRL key while you type letters between A and O. You can also change that to read FOR CH=33 TO 90 and CALL CHAR(CH,X\$), omit the CALL CLEAR, and watch the fun on the screen.

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