

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

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The executive members are:

Ray Smulan.....PRESIDENT
Alex Ivey.....VICE-PRESIDENT
Dave Sisley.....TREASURER
Bruce Travis.....SECRETARY

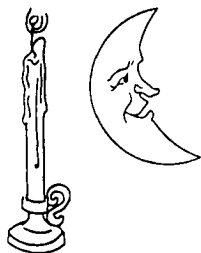
Additional positions held are as follows:

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 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 or brought to the meetings for transfer, if on disk.

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EDITOR'S CORNER



It seems that I have been away from my TI for too long. In last months issue I said that I did not have any more material for the next newsletter. I just found a disk of articles that I had put in a safe place.

One article can be found in the "INFO CORNER" and occupies most of this newsletter. I felt that it would be a great way to start the new year off. It is a bit away from our slogan for the year "GETTING THE MOST FROM YOUR TI". In contrast the feature article will be a bit easier to digest. It gives me some ideas for future issues of HARDCOPY.

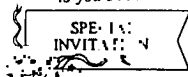
Lets gear this years issues of HARDCOPY to all levels of users, from the novice to the hacker. This is your magazine. Lets share the work loads, and that applies to all other postions in the club. I would like to see what the club has in the library but I seem to be too busy to spend some money on some great programs that I've heard we have.

Bruce H. Travis, E.I.C.

MEMBERSHIPS

Memberships are now due and run from October 1st or as issued to the following Septmeber 30th. This enables all memberships to become due at the start-up in the fall. To allow for late registrants of NEW FIRST TIME MEMBERS ONLY, we are using a two tier fee structure. The dues

We are extending
to you a...



following year are as follows:

<u>MONTH</u>	<u>NEW MEMBER</u>	<u>REPEAT MEMBER</u>
September-January	\$20.00/yr	\$20.00/yr
February-June	\$10.00/yr	\$20.00/yr

VISITORS



WELCOME! Please let us know how you heard of our group and please make yourself at home while at our meeting. We extend an invitation to become part of our group and to enjoy the benefits that we have to offer.

BUSINESS MINUTES

GENERAL MEETING-SEPTEMBER 11/86

The meeting was called to order at 7:35 with 15 members present.

The minutes of the previous meetings as circulated in the September issue of *HARDCOPY* were read and accepted on a motion by George G., seconded by Sonia G. and carried as written.

Dave S. reported that the club has \$91.76 to start the year off with.

Under old business, Ray reported that the computer labels cost \$3.98/100 size 8.5"x5.5".

We are going to check into the NUG \$30.00 membership. Possible problems.

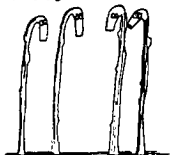
The software has been ordered as per minutes read. The 32K chips have been received for the console update at \$3.98x4 plus S & H. Hopefully Ray will have the console available by the next meeting.

Parsec and Invader cartidges are available for production of the Super Cartidge at \$30/20. The E/A chip is available from Seattle for \$10. George will report at a later date.

Sonia reported that copies of newsletters have been mailed out and that she would like any left over *HARDCOPIES* for additional mailout. We have complete issues of *MADHUG*, along with *NW OHIO 99ers*, *CAUG*, *WORDPLAY*. See Sonia.

For those interested *HC JOURNAL* should be considered hands off. Check with Alec.

STAFF MEETING



Revenue Canada has sent us the followup letter. More Greek! The best we could understand is that electronic parts is 3.9% duty and drives are duty free.

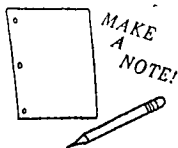
Demo on Myarc card and XB cartidge by George to follow business meeting.

Meeting was adjourned at 7:55pm.

GENERAL MEETING-SEPTEMBER 25/86

The meeting was called to order at 8:00 with 10 members present.

The minutes of the previous meeting was read and accepted on a motion by Fred C., seconded by Fred H. and carried with a correction that labels should read envelopes.



Dave S. reported that the club has \$114.65 in the bank, \$133.47 COH giving a total \$248.12.

Ray was not able to complete the 32K console upgrade, but will try to bring it to the next meeting. With regards to the Super Cartidge, only Munchman seems to be the right circuit to use. Will confirm at next meeting.

Cost of computer labels will be reported at the next meeting.

MacroAssembler and C-Compiler is now available at a cost of \$5.00/set plus you supply the disks. Renumeration of \$20 is asked to be sent to the author direct by each purchaser.

Ray has checked into the Calgary library with regards to obtaining computer films for the club meetings. Terminal Emulator Protocal Manual and Disk Fixer Protocal Manual has been typed to disk, compliments of Peter K. Motion of adjournment at 8:17.

FEATURE ARTICLE

To give you a break and for those of you who are not into A/E Language yet, here is a small program that you may want to type out. It is written by Bill Gaskill of Grand Junction,

Colorado.

Save it done under the name of "LOAD" and it will give you a quick listing of what is on your disk. It only searches DSK1, giving name of disk, used and unused sectors and lists in 2 columns. It is written in XB so for those of you who would like to modify it so it prints that information give it a try and we'll publish it in the next newsletter.

```
1  @=1 :: OPEN #@:"DSK1.",INPUT ,RELATIVE,
INTERNAL :: INPUT #@:F$,E,E,F :: DISPLAY AT
(2,@)ERASE ALL:F$:"FREE=";F;"USED=";E-F :: R=5
:: C=@
2  FOR H=@ TO 127 :: INPUT #@:F$,D,E,F ::
DISPLAY AT(R,C):F$ :: R=R+@ :: IF ABS(D)=0
THEN CLOSE #@ :: END
3  IF R<24 THEN 4 :: C=16 :: R=5
4  NEXT H
```

This may seem like a small feature article but sometimes the greatest things grow from the smallest seed.

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

Starting this year and with this issue we will be alternating this column. The heading will remain each month but the items will not be listed. If there are any changes in your equipment, please advise the editor at the meeting.

We will also be adding a second section entitled "WANTED" for those of you who would like something for your system and it's not listed. There are items which are we may know of or can advise you about them.

INFO CORNER



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MYARC'S NEW COMPUTER - Reprinted
from Compuserve's TI Forum

NOTES ON THE NEW COMPUTER from the
Chicago Faire by J. Peter Hoddie,
Boston Computer Society TI User
Group.

As everyone is aware, Myarc is planning to introduce a new computer which is rumoured to be based on the design of the ill fated TI 99/8. In fact, Myarc even had a 99/8 to play with before it was cancelled just two months before TI left the home computer market. The truth about the 99/8 was that it was largely incompatible with the 99/4A thus when Myarc decided to design a new computer they had to make major changes to the design of the 99/8 and the result of this work is a computer originally named "NOAH" (from the "arc" in Myarc.) and now in search of a number for a name. It was widely expected that Myarc would show this computer at the TI Faire in Chicago in November but no dice. They brought along an empty shell of what the machine would look like and a mother board that they claimed was the machine. You may well ask then, why didn't they show it in operation. The answer is quite simple, although Myarc wouldn't admit it straight out. They blew a chip on the board when they were working on it the day before the show and were unable to replace it in time. But Lou Phillips, president of Myarc still gave a very clear picture of what this new, unnamed machine is all about.

First the basic information. It is expected to be released in the first quarter of '86 and sell for \$499 (American). The machine has an IBM keyboard complete with a slash key where the left shift key should be. There are 10 function keys, but instead of being mounted on the left of the keyboard as on the IBM keyboard, they are mounted across the top of the unit horizontally. There is also a numeric keypad like on the IBM, but

instead of an oversized plus (+) key, there is a large enter key to facilitate numeric entry. The cartridge port has been moved to the upper left hand part of the machine above the first few function keys.

It will come initially with 256K of CPU memory (expandable to a full 2 megs), 64K of VDP memory, 64K of ROM, a parallel output, an RS232 I/O port, two internal expansion slots, and a port to hook up a mouse. The mouse Phillips mentioned was the MS (Microsoft) Mouse which brings up the issue of IBM compatability (more later). The internal ROM includes 48K of library routines, 8K of GPL interpreter and 8K (seems a lot to me) of mouse support. When the machine powers up 16K of RAM is used for various internal tasks so that you are left with about 240K of space for your programs. And remember that all the routines, screen and graphics tables are kept in the 64K of VDP memory, so that you really have quite a lot of memory to work with. If you choose to expand the RAM of the system, it will have to be done externally using 3 off board RAM expansion banks. The current Myarc memory cards such as their 128 and 512K cards will work as memory expansion.

The machine is built around the TMS9995 microprocessor which is a more advanced version of the TMS9900 inside your TI 99/4A. The TMS9995 is 2.3 times faster and comparable in speed to the Motorola 68000 that drives Apple's Macintosh. According to Mack McCormick the 9995 can run as fast as 12 MHz but it looks like it will only be running at an incredible 10.7 MHz due to some technical considerations. The 9995 uses 16 bit parallel memory on the main board which allows it to go even faster then the 9900 which has a 16 bit processor doomed to forever run on an 8 bit bus thus working at only half speed (roughly). The machine will be able to run nearly all programs written for the 99/4A through a bit on the gate array which when set will make the machine look nearly identical to a 99/4A. Thus all your software is still good. Well almost

all, Myarc says 99% compatability. The exceptions they've found are programs that use non-standard methods to scan the keyboard.

This is only two programs so far. NO BIG DEAL. The reason for the problem is that the 99/4A has 48 keys and the new machine has 84 so that a different KSCAN routine obviously has to be used. The programs that don't work use their own KSCAN routine and thus will not work. A few more comments on compatability. There will probably not be immediate support speech. The machine can support it but there will be no port for you to plug it into in the side of the machine. Myarc is planning to develop something like the Triple Tech card from CorComp to allow you to put the speech synthesizer inside the PE box.

There is worse news though for you with the P-code card. McCormick said that that card is a technical nightmare and that the increased development time and costs to allow it to work wouldn't be worth it. Besides, he added, P-code is essentially dead as even its creator has abandoned it. Now here's the bad news for everyone. You can use your current PEB, but you will have to buy a card from Myarc to be able to do it. The reason is that the flex cable and card that connect your console to your PEB don't have the intelligence or connectors to allow the new machine to access the expanded memory in the PEB on a 16 bit bus or use the new PEB format (more later). However, having to buy this new card isn't all bad. It won't have as bulky a cable as the TI card so you can move the console around freely and it will have a time and date function built in so that you don't need a clock card. It is an added expense however.

The communications chip is the same 9901 that is used in the 99/4A running at the same speeds.

The graphics chip inside the machine is perhaps the single most impressive component. Myarc is using the 9938, a chip TI developed and then abandoned (like all good things). It has 64

pins and is now being produced by the Japanese (who else?). It is fully compatible with 9918A inside the 99/4A, but supports extra modes and features. Where the 9918A has 8 control registers for graphics characteristics, then 9938 has 32, which allows for an incredible amount of flexibility and power. The 9938 has two text modes. The first is identical to the text mode of the 9918A, except that you can choose the foreground and background from a set of 512 colours instead of 16. Text mode two is 80 by 24 or 80 by 26 (which allows for a status line at the bottom like the IBM) with 6 * 8 characters and a choice of two colours from the same 512. Multicolour mode is still there as well as graphics mode one. Graphics mode two allows definition of 768 different patterns and a choice of 16 colours from the 512. Graphics mode three is the same as mode 2, except that instead of only being able to have four sprites on a horizontal line at a time, you can have up to ten on a horizontal row. Graphics mode four is similar, but has 256 * 212 resolution and graphics five can support up to 512 * 424 using interlacing, but this mode can only be displayed on a RGB monitor. Graphics mode six has 512 * 212 resolution and 16 colours. Each pixel can have its colour individually defined. This mode requires the full 64K of VDP memory for storing the screen. Graphics mode seven has the same resolution, but uses a full byte of memory to define the colour for each pixel which means each pixel can be one of 256 colours! This mode requires additional VDP memory to use and Myarc has made provisions for up to 196K of VDP RAM to be put in the console. One of the control bits on the 9938 allows for what Phillips calls "animation tricks". He says that it can do screen swapping, which essentially provides for automatic animation controlled by the 9938.

The machine will support the old PEB (Peripheral Access Blocks) format in VDP memory so that, in theory, all the peripherals manufactured to TI specifications will work.

There is some question whether or not the CorComp disk controller will work, but Myarc seemed to imply that it would.

A new PAB format will also be supported. It will be identical to that developed for the 99/8 and will reside in CPU memory for faster speed. It will also allow for logical record lengths of up to 4096 characters instead of the 256 on the 99/4A and will have a full byte reserved for error codes which means there can be 256 error codes instead of the 8 as in the old PAB format. Including support for both the new and old PAB formats is one of the major changes from TI's 99/8. TI was planning to abandon the old PAB format which would have made your PEB 100% useless. Myarc has made provisions so that you don't have to buy a whole new system.

Phillips said that the first two peripherals that would be released will be the PEB interface (described above) and a new disk controller card that would fit in the internal expansion slot for people who don't have (and don't need to buy) the PEB. This disk controller will support QUAD density disks which means almost a full MEGABYTE of storage on a single floppy. Phillips said that they already have a version of this controller working and will probably release a version of it for the 99/4A as well. After those two cards are complete Phillips says that the next thing he plans to work on is a card that will allow for IBM compatibility.

He commented that the reason for choosing the keyboard that they are using was so that it could be made into a PC compatible computer easily. He also said that 3.5 inch drives were a definite possibility in the not too distant future. The computer will come with EXTENDED BASIC built in, but not TI EXTENDED BASIC. Instead it will be an advanced version of Myarc's EXTENDED BASIC II. Phillips said that XB II is very similar to GW BASIC from Microsoft and is somewhere between 2 and 4 times faster than TI EXTENDED BASIC. The additions to XB II that will be included in the new computer include full

mouse support and advent driven control keys (which means you can set your program to automatically branch to a certain line number when a given key is pressed), and support for the new PAB format.

Phillips has promised to release a reference manual for the machine similar to one released by IBM for the PC. In other words, the machine will have an open architecture and no hidden secrets like TI kept with the GPL. This will help enormously in getting new software written and hardware built for the machine by third party companies which can fully utilize the incredible power of Myarc's new machine.

Phillips has promised to release the machine and claims that Myarc has sufficient capital to allow it to bring the computer to market. He did however admit that they are expecting a "hard, up-hill battle" for the first year.

When asked about other languages, Phillips said that PASCAL would probably not be next but that C would be. His reasoning is that C is what really is in vogue right now and it would make new software development easier.

Listening to Phillips talk about this new machine made a few things very clear.

First, that Myarc really has a machine nearly ready to release. Second, that the machine is state of the art and really something that could compete in the current market. Third, that Myarc is thinking long term and has big plans. Now whether or not a small engineering company from New Jersey working with a computer developed by TI that lost TI millions, can actually succeed is another question. I think that if anyone can, Myarc will, but there is no way to find out except to wait.

A few notes concerning this file: This file was written on November 4, 1985 by J. Peter Hoddie, co-director of the Boston Computer Society TI 99/4A user group. It was typed here for your reading pleasure by ...

THE LONE TYPIST (Alexander B. Ivey)

(Editor's Note: You can read Micropendiums

latest issues for an up-to-date report on the computer now called GENEVE. I felt that this article had significant interest to print it in its entirety)

TI CALENDAR

Meetings are held every second Thursday, starting SEPTEMBER 11, 1986 from 7:00-9:30pm in Science Room #2 at Dr. G. M. Egbert Community School - 6033 Madigan Drive N.E. Take a couple of hours out and come to your meeting.



TIBITS

You should always keep a dust cover on your keyboard to keep things from contaminating the delicate switches on the keyboard. Occasionally vacuuming this item will also help.



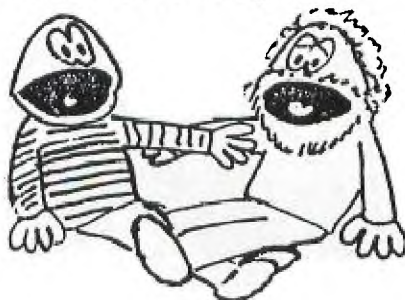
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Peculiar People...



T-RUNNERS



1986

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◆ NO MEETING BECAUSE OF EASTER SCHOOL BREAK