

# NH99'ers User Group

New Hampshire 99'ers User Group  
PO Box 5991, Manchester, NH 03108

## Newsletter

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### CLUB NEWS

by Paul Bendeck, President

The March meeting focused on planning for the BCS TI Fayuh on April 1. Our goal this year was to sell software: new disk based software from our library, old cassette and module software from last year, and back issues of Micropendium magazines. During the meeting we planned what things we needed to bring and who would bring them. A list of volunteers was organized for setting up and running the club table at the fair. We decided to bring only one system this year to keep things simpler and less crowded on our table. Several members also indicated that they planned to bring personal items to sell at the club table. See next article for the financial results.

In addition to selling software, I proposed that the club have a raffle to draw attention to our table at the fair. After some discussion, we decided to have a drawing every thirty minutes during the fair and let the winner choose their prize from any of the old software items on our table. The results of the raffle are described in the next article below.

### BOSTON COMPUTER SOCIETY TI FAYUH

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Overall, the club did fairly well this year at the BCS TI Fayuh. Unlike last year, our expenses to participate in the fair were very minimal. Our only expense was for the table, \$25. Above and beyond that, all money earned at the fair was profit to the club since we already had all of the supplies we needed. Here's a summary of the financial results:

ITEM	QTY	TOTAL
====	===	=====
Old Software	35	\$52.50
New Software	11	\$27.50
Micropendium	25	\$25.00
Raffle	17	\$ 8.50
Total Revenue		\$113.50
Total Expenses	-	\$ 25.00
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Net Profit		\$ 88.50

The raffle did not do as well as we had hoped, but it did help to get rid of some of the old software. Altogether, we gave away 8 pieces of software and averaged about \$1 per item in tickets sold. My observation is that the raffle idea is a good one but maybe we need more attractive prizes to get people's attention. We did very good on the Micropendiums, selling all but 3 issues. The old software sold much better than expected, probably because of the low price. But we still have one boxfull left to sell next year. The area I was most disappointed in was our new software. We only sold 11 disks, mostly FRED, OHMUMMY, and GROG. I thought good game software would sell better than that.

Some final thoughts on the BCS TI Fayuh...

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The crowd seemed even smaller than last year with fewer vendors and clubs. I heard a rumor that BCS was planning to combine the TI fair with a more general electronics/ham radio flea market next year in hopes of drawing a larger crowd. For our table I think we should consider getting 2 tables next year. One table is just too small and crowded. We should also make more of an effort to bring a larger selection of software to sell along with a more professional looking catalog with descriptions of each software disk.

On the positive side, the club did well at the fair. We made a good profit and we had fun doing it. I brought my family this year and the kids loved looking at and playing with all of the software games. My wife especially enjoyed the breakout session on the music demonstration programs. If you missed this session, you missed a real treat.

Altogether, I picked up 7 new disks worth of software, including 2 disks of great music. I plan to bring my new software to the next meeting to demonstrate to everyone. If you found something particularly interesting at the fair, bring it to the next meeting and show us. We'll have a show and tell of your favorite new software, which should make for a very interesting meeting.

SCHEDULE OF MEETINGS

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The next club meeting is scheduled for Monday April 17 starting at 6:30 PM. Meetings are held the third Monday of each month at the Science Enrichment Encounter (SEE) Center, 324 Commercial Street, Manchester, NH. Below is a list of dates for upcoming meetings.

May 15  
June 19  
July 17  
August 21  
September 18  
October 16  
November 20  
December 18

## MY DEBT TO THE TI-99/4A

By Carney W. Mimms.

(Reprinted from the Central Westchester 99'ers NEWS #3)

What do I owe the Central Westchester 99ers besides next quarter's dues? With apologies to our treasurer, this is no mere rhetorical question. Like many of us, my life and work have been changed by my developing interest in computers in ways I never could have anticipated a few years ago: none of this could have happened without the support and encouragement of the members of the Central Westcher 99'ers.

For a long time, I was ignorant of computers even when surrounded by them. A few trips to the computer center in college were enough to convince me that this was an experience reserved for the initiates, white-robed technicians and pale, scruffy-looking engineering types hovering around the glassed-in, airconditioned central Machine. When I next encountered computers, they had become a lot smaller and more approachable. Unfortunately, I completely failed to recognize them for what they were! By this time, I had gone to law school and become a practicing lawyer. Thinking myself reasonably well-informed and up-to-date, I was excited by the labor and time-saving potential of the then-new word processing technology.

Unfortunately, nobody told me that these things were computers, or that anybody but secretaries could benefit from using one. On reflection, I remember that one of my more intrepid colleagues confessed that he had learned to use his secretary's Wang on the weekends, and even seemed a little awed by the experience, but I must have dismissed this as meaning nothing.

My next encounter with the computer was on a more remote and rarified plane--too remote. In 1978, after reading a rave review in Scientific American, I bought and read a truly wonderful book called Godel, Escher, Bach, an Eternal Golden Braid, by Douglas Hofstadter. In the book Hofstadter interwove fascinating information about mathematics, music, Esche r's self-referential drawings, and exciting computer programming concepts like recursion and levels of reference. I was hooked! All I wanted to do was run out and start trying these wonderful things on a computer--some computer, any computer! Alas, though, there were no real computers to be found: certainly none to match the machines Hofstadter's book and my overheated imagination had conjured up. Out in the real world, the available alternatives were still the monster mainframes of my college days, the inaccessible and severely functional minicomputers of the scientific and technical world, and the dumb but functional word processors I had already passed over. Just on the horizon, though, were some simple, accessible and relatively inexpensive machines (thousands of dollars rather than tens of thousands) like the Altair and the Apple II. Since nobody was waving the future under my nose, yet, I failed to buy one.

There matters stood until the arrival of the TI 99/4A in my life. Of course, by 1981 it would have been hard to miss the thunder of publicity surrounding Home Computers of all varieties--unless you lived in a cave somewhere in the Himalayas. I went out and signed up for an adult Ed course in computers, the usual how-to-program-in basic stuff, and began shopping for a cheap computer. The first one I picked, the Timex Sinclair, was cheap, all right, but definitely not the stuff of Hofstadterian dreams. It was slow, crude, had a lousy video display (on my giant old tube TV) and worst of all had a tiny non-standard membrane keyboard. After a frustrating week with the keyboard, I

sent it back. Fortunately, by now the TI 99/4A, which had a real key board had come down to under \$200, with rebate. Not only did it have a real key board, it boasted real color! graphics a n exceptionally nice dialect of Microsoft Basic and a growing collection of interesting software, much of it in audio cassettes.

At this point, the happiest computer accident of all took place, As I was browsing through the latest hardware and software for my new TI at Sears in White Plains, I encountered another new enthusiast, Art Byers. The rest is, as they say, History! Along with two others, Art and I founded the CW 99'ers.

Although I didn't now it yet, I had already gone about as far as solitary enthusiasm would take me. I was dimly aware from my experience in the adult Ed course that I had a lot to learn about the practical uses of computers, something Dr. Hofstadter had rather little to say about. Over the next few years, the members of the Central Westchester 99ers helped me struggle to master the TI 99/4A, and even more important, to get a sense of what personal computers could and could not do. The programs we tinkered with, though they seem primitive now, actually did useful work, like estimating taxes or laying out income and expenditures in tabular form. Not to mention that greybeard of computer applications, word processing (Art Byers even wrote his own word processing program in TI Basic!). In time, we began to tackle other new and challenging applications, including telecommunications, another area in which turned out to be most fortunate for me.

At this point, I had made a major career shift from law to publishing and had joined a company that was just beginning to use computers, in this case, the then-new Apple Macintosh. Many of the skills I had acquired with the help of the Westchester 99ers soon became crucial. And even the skills I hadn't yet acquired, I had learned enough to fake. Telecommunications, for example, came up for the first time when I was asked if I could conduct on-line database research for the company's health newsletter. "Of course", said I, and dashed off to buy a modem and a Comuserve kit so that I could learn enough to put on a convincing display of my on-line prowess before my ignorance caught up with me. Fortunately, Art Byers, Bob Cataldo, Al Trudeau and others in the club came to my rescue and endured protracted on-line sessions and inflated phone bills while I learned the ropes. Looking back from the secure vantage point of hundreds of hours of on-line information searches and an office Comuserve account, I am grateful for all the patience everyone displayed with me.

I now appreciate the help I have received from the Westchester 99ers more than ever, since my publishing job has now evolved so that, not only is much of my time taken up with the office computers, but a substantial part of that time is spent training computer novices. Whenever my patience and good cheer begin to flag, I try to remember the patient and generous spirit of my fellow novices and former novices at the Central Westchester 99'ers.

HERE IS A REVIEW BY Tony McGovern of the AVPC as manufactured by DIJIT SYSTEMS, 4345 Hortensia St., San Diego, CA 92103.

## THE DIJIT AVPC CARD

Tony McGovern

There is a most interesting new development on the TI-99/4A scene in the form of the Advanced Video Processor Card from DIJIT Systems in San Diego. This uses the same V9938 video processor that is used in the Myarc Geneve. Right now I'm typing this on a full 80 column display using an experimental version of the Funnelveb Editor designed explicitly to work with the AVPC card. The display device is a Commodore 1084S RGB monitor. I hesitate to use the term high resolution to describe this device as it has CRT color dot pitch barely adequate for the AVPC or the Amiga either, but I was able to go out to the nearest K-Mart and buy one, so Will could have his Amiga back. To get better would involve a trip to Sydney, or far more money for a Multi-sync. The 1084 has the advantage that it also accepts a composite video input so you can use it as a display monitor for a VCR as well. Since the monitor is a great part of the expense in getting better video resolution, no matter which way you go, this is important. Unless you want to revert to monochrome and just do text editing with a V9938 system of any origin, a RGB monitor is essential.

So what is the AVPC card and what does it do for you. Physically it is a card for the PE box, and just plugs in like any other card. You make direct connection from a 6-pin DIN connector on the rear of the card to the RGB monitor. I made a short 6-pin DIN to DB-25 adapter cable which I then plug with the Amiga cable that comes with the monitor. This has a DB-23 but this causes no problems. The sound still comes from the console connection and you will probably need to make another cable for that also. No other connections are needed. To make the system work you have to modify the console used with the AVPC. The process is easy and well explained in the instructions that come with the card. If you have ever cleaned the GROM port connector, then you have already experienced the hard bits, and no soldering is required. The modifications have two purposes. Firstly the existing VDP is partially disabled, left ticking over for clocking the GROMs. The console also contains circuitry which prevents VDP accesses from appearing on the external bus to

the PE box. Cutting a trace here lets the card in the PE box in on the act. Do that, clean the GROM port connector while it is out, reassemble the console, hook up the PE box and monitor, and fire it all up. If your experience is like ours it will work first time. That is good engineering! In use all you will notice is the occasional flash from the screen when the AVPC corrects bad signals to the VDP chip from Basic, usually under error conditions.

The AVPC uses the same Yamaha/ASCII V9938 chip as used in the Geneve. This started out life as a development of the video chips in the 99/4a, but when TI lost interest in home computers development passed to Japan where it became the basis for MSX-II, something that hasn't appeared out here. Yamaha designed it to be compatible with the 9918 also used in MSX-I, provided programmers respect the reserved video register bits as specified in the 9918 or E/A manual. Most third party software writers have, but unfortunately TI Lubbock were major offenders. Just why isn't clear. Maybe just sloppiness, or maybe sheer bloodymindedness in TI's internal company politics. These problems were built into the infamous GROMs, which has meant that DIJIT has had to be extremely ingenious in working around the traps left by TI. The last and most insidious problem they found was conflicts with RS232 interrupts in interrupt driven terminal emulator programs. Due, it turned out, to a bug built into the TI RS232 card (and copied by Corcomp and Myarc without correction), for which the only solution is a new EPROM which DIJIT will provide for your particular make of card. Imagine the problem they faced, a occasional lockup occurring only with their own new hardware with all three independently sourced RS232 cards. Even sympathetic feelings hurt.

These problems are all handled transparently. A further class of problems comes with the bank switching of VDP RAM when the last byte of the normal VDP RAM is accessed in the new VDP modes. The TI system specs allowed for a way around this, but third party software writers have not always respected it. Funnelveb has been compatible for some time, but some other programs may need updating. Various Horizon RAMdisk ROSs are offenders but are easily fixed. I'm using my own fix on one right now and DIJIT will have their own. The card comes with a modified version of Barry Boone's fine Archiver program, and a program of Barry's that shows My-Art pictures from the Geneve. Also there are some (Continued on page 8)

(Continued from page 7)

primitive adaptations of TI-Writer to 80 columns. In future a fully adapted 80 column version of the Funnelweb Editor will be available - the one I'm using right now or its future developments, and we have given DIJIT explicit permission to distribute this with their card. I'm already finding it hard to look at the 40 column editor again, and the AVPC machine has become our prime working computer. It already has the Myarc 512K RAMdisk installed and soon will have all the goodies, as it is working so smoothly.

The AVPC design also looks to the future. Unlike the Geneve it supports the full 192K of VRAM (in fairness this isn't so important on the Geneve which has more CPU RAM), but I can see AVPC programs coming that will not be Geneve compatible for that reason. The V9938 supports mouse and light pen and the physical interface is clearly defined. I have found this one of the more irritating features of the Geneve sales effort - the naked attempt to force users to buy Myarc's product by issuing dire warnings about possible damage, while with-holding detailed technical information. The AVPC also has built in an expansion connector, intended for a video digitiser sub-card. This I have no details on so I can't comment.

The card I have here is an evaluation model, but it is very neatly laid out with no obvious afterthoughts. I would agree with the designers when they say that the long gestation period has led to a product that is mature at release. I think it is so good that I'll buy one for the second system. Another V9938 based 80 column device has been in existence for some while, from Mechatronics in Germany. It is not clear whether it is still available, and I have never actually laid eyes on that or any other Mechatronics product. From reports I have had, and judging from a description in Micropendium some time back, it is a very much clumsier device mechanically, electrically and to the programmer. Some correspondents whose judgment I respect had looked at it and decided against it, but have snapped up the DIJIT card.

A question to be asked is how it stacks up against buying a Geneve. From my point of view it allows 80 column operation and access to the power of the V9938 in a familiar system. William came back from his Amiga for long enough to create a whole new set of V9938 interface routines, a video library reminiscent of many of the video functions on the Amiga. I would love to have the extra horsepower of a TMS-9995,

but this may well do me until the time comes to move onto something altogether new and more powerful. Will is of course a confirmed Amiga fan but I'm not fully convinced there, finding it difficult to warm to a machine for which software producers seem to think it necessary to have an exclamation mark in the name of every second software title. I just have a feeling that it would be a mistake to buy a new computer that does not have a large linear CPU address space (and that makes any MS-DOS machine out of bounds). The Geneve may be fun for the small circle of developers who have ready access to Myarc for detailed information, but I feel little inclination to work as a complete outsider on a machine with a small user base from a producer notorious for secrecy, no matter how elegant I find its CPU instruction set. There would be far more return for effort on the Amiga. The longevity of the TI-39 as a orphan system is already remarkable, and an AVPC looks a good way to keep it alive for several years more, until both it and the Geneve seem like 4-function calculators in the march of computer progress.

Our policy here is to develop software for the system we have. We always try to make the Funnelweb system as widely usable as possible and have also tried to accommodate other significant hardware we know of, when we have enough information to do so. There is no substitute for the actual hardware though. GRAM devices are one area we have never pursued, as we were left with no inclination to buy one from the best known supplier, and otherwise have just had higher priorities. The new 80 column editor is the first major development in the Funnelweb package tied to a specific piece of hardware, and is an implicit comment on just how important we think the AVPC is.

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CREATE YOUR OWN CURSOR  
 By Bob Turner  
 New Horizons-Northwest Ohio 99'ers

I don't quite know how to give the proper credit to this routine, but whoever discovered this way to modify the cursor is an unsung hero.

While I have experimented with TI Extended Basic, I have learned many ways to make it do the things about which the manual never told you. Also, I have learned not to forget the clever programmers who offered their information and discoveries to the TI community.

Creating a cursor is rather easy, and once done, the cursor routine can always be used in other programs. If you understand how to define a character then understanding how to create a cursor is just as easy. First, here is the TI Extended basic code to re-define the cursor:

```
100 CALL CLEAR :: CALL INIT
110 CALL LOAD(8196,63,248)
120 CALL LOAD(16376,67,85,82,83,79,82,48,8)
130 CALL LOAD(12288,255,129,129,129,129,129,129,255)
140 CALL LOAD(12296,2,0,3,240,2,1,48,0,2,2,0,8,4,32,32,36,4,91)
150 CALL LINK("CURSOR")
```

Line 130 defines the cursor description (what it looks like). Defining the cursor is made rather easy because you are not using HEX but decimal.

```
Decimal>11281641321161081041021011
-----+-----+-----+-----+-----+-----+-----+
ROW 1   | X | X | X | X | X | X | X | X | X | =255
-----+-----+-----+-----+-----+-----+
ROW 2   | X | | | | | | | | | X | =129
-----+-----+-----+-----+-----+
ROW 3   | X | | | | | | | | | X | =129
-----+-----+-----+-----+-----+
ROW 4   | X | | | | | | | | | X | =129
-----+-----+-----+-----+-----+
ROW 5   | X | | | | | | | | | X | =129
-----+-----+-----+-----+-----+
ROW 6   | X | | | | | | | | | X | =129
-----+-----+-----+-----+-----+
ROW 7   | X | | | | | | | | | X | =129
-----+-----+-----+-----+-----+
ROW 8   | X | X | X | X | X | X | X | X | X | =255
-----+-----+-----+-----+-----+-----+-----+
```

As you can see, the values come from adding the total value across each row to define the segments in the cursor. (Note X's in the figure and the weighted value that was totaled.) After defining your custom made cursor, save it to disk and you are ready for your first run.

Run your program and look at your cursor. If you don't like it merely make some changes and run again. Repeat this process until you are satisfied with your new cursor. The new cursor will stay until you turn off the console.

I'VE GOT IT!..



...HAVE YOU?

*Jaeb 81*

HARDWARE MANUAL  
FOR THE  
**TI 99 / 4A**

IT DESCRIBES:

- CONSOLE DESIGN
- CUSTOM CHIP OPERATION
- TMS 9900 H/W ORGANIZATION
- TMS 9900 INSTRUCTION SET
- INTERFACING PITFALLS
- CONSOLE SCHEMATICS
- PEB CARD DESCRIPTION
- GROM SIMULATOR DESIGN
- EXTENDED BASIC MODULE DESCRIPTION & SCHEMATICS

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