

CALL KEY

CALL KEY is particularly useful if you need to press a single key and do not want to have to press the enter key. Here is a program that will run in either Basic or Ex-basic. I will use this as a base to build upon for my next examples.

— by **IRWIN HOTT**
SPIRIT of 99 newsletter

```
10 CALL CLEAR
20 PRINT "CALL KEY DEMO"
30 PRINT "PRESS 1 2 OR 3"
40 CALL KEY(0,K,S)
50 IF S=0 THEN 40
60 IF K=49 THEN 90
70 IF K=50 THEN 110
80 IF K=51 THEN 130 ELSE 40
90 CALL SOUND(100,400,1)
100 GOTO 10
110 CALL SOUND(100,500,1)
120 GOTO 10
130 CALL SOUND(100,600,1)
140 GOTO 10
```

This is the simplest and most inefficient of CALL KEY routines. By pressing 1 2 or 3 you will get a tone of a specific frequency.

The next sample will also run in Basic or Ex-basic.

```
50 IF (S<1)+(K<49)+(K>51) THEN
  N 40
60 ON K=48 GOTO 90,110,130
```

This replaces lines 50 and 60 in the original program. Lines 70 and 80 may be deleted.

BEFORE YOU MODIFY THE ORIGINAL PROGRAM, RUN IT AGAIN AND HOLD DOWN THE 1 KEY. NOTE THAT THE TONE REPEATS AT REGULAR INTERVALS. NOW TYPE IN THE NEW LINES AND TRY THE SAME THING.

Note that the tone is heard only once. The three variables in the CALL KEY statement (OKS) are as follows:

- The first covers the type of CALL KEY statement that is called for:
- 0 uses the mode from the last CALL KEY.
- 1 accepts input from the left side of the keyboard.
- 2 accepts input from the right side of the keyboard. These are useful in some types of 2-player games.
- 3 returns upper case values only.
- 4 is pascal mode.
- 5 returns upper and lower case values.

If no other CALL KEY has been issued S is the default.
K is the ascii code of the key pressed.
S has three possible values.

If s=0 then no key has been pressed. Hence the IF S=0 THEN 40
If s=-1 then the same key was pressed the last time a CALL KEY was encountered. Hence the if s<1 in the last sample.
It is quite common to see if S=0 THEN XX. If you will be encountering another CALL KEY routine almost immediately after the first one you may have a problem if a key is held down too long.

Now back to the last example: I used relational operators in line 50 so that IF S<1 OR K<49 OR K>51 THEN 40 Otherwise the ON GOTO is encountered. The same thing may be accomplished in Ex-basic by IF S<1 OR K<49 OR K>51 THEN 40.

In the next example I use a subroutine to get the CALL KEY value.

```
30 PRINT "PRESS A B C OR a b
  c"
40 GOSUB 1000
50 IF K<65 OR K>67 THEN 40 E
LSE ON K=64 GOTO 90,110,130
1000 CALL KEY(0,K,S):: IF S<
1 THEN 1000 :: IF K>96 AND K
<123 THEN K=K-32
1010 PRINT CHR$(K):: RETURN
```

One of the disadvantages in using the CALL KEY(3,K,S) is that any other input from the keyboard will be in upper case. You may put in a dummy CALL KEY(5,,K,S) before an input prompt to restore things to normal, but I find that this method is much better. This adds lines 1000-1010, replaces 30-50 and you may delete line 60. You will see that in line 1000 if K is from 97-122 then K is decreased by This takes any lower case letter and makes it upper case. The subroutine has the added advantage of being available anytime I need a CALL KEY routine. Instead of printing the CHR\$(K) as is done in line 1010 I send it to speech. The final example shows how efficient the program can be.

```
10 CALL CLEAR
20 PRINT "CALL KEY DEMO"
30 PRINT "PRESS 1 2 OR 3"
40 CALL KEY(0,K,S):: IF S<1
THEN 40 :: IF K=49 THEN CALL
SOUND(100,400,1) ELSE IF K=5
0 THEN CALL SOUND(100,500,1)
```

```
ELSE IF K=51 THEN CALL SOUND
(100,600,1)
50 GOTO 40
```

In this example we are back to the original program. Lines 90-140 are deleted. If you remove the IF S<1 THEN 40 :: from line 40 and hold one of the keys down you'll see just how fast CALL KEY can be.

Control and function keys will return values with CALL KEY. Remember not to hit function = unless quit is disabled. The values of keys pressed are different in Pascal mode. There is more about Pascal mode in the Users Reference guide.

There are a couple of methods so that you may return more than 1 character by using CALL KEY. You may put the call key statement within a FOR NEXT LOOP. After the last character is pressed the loop is exited. Within the loop you would need A\$=A\$CHR\$(K)

I have not really seen any benefit to this in my programming. Another use of CALL KEY is for a check to see if a key has been pressed. As I am writing this article I have a routine that looks for a press of the spacebar. If the bar is pressed the line is spelled. The routine looks something like this:

```
10 INPUT A$
20 CALL SOUND(1,1400,1)
30 CALL KEY(0,K,S)
40 IF K=32 THEN 50 ELSE 10
```

Line 50 would be the spelling routine. If the spacebar is not depressed the program goes back to line 10.

The opposite may be done to produce a pause in a program.

```
10 CALL CLEAR :: CALL SOUND(
1,512,10):: PRINT "PRESS P T
O PAUSE"
20 CALL KEY(0,K,S):: IF K>8
0 THEN 10
30 PRINT "PRESS ANY KEY TO C
ONTINUE"
40 CALL KEY(0,K,S):: IF S<1
THEN 40 ELSE 10
```


At its introduction, the Myarc Geneve computer will be among the most advanced computers available, and definitely the most advanced "home computer" in history. It is more powerful than many minicomputers, but is available at a price that would have been unheard of 3 years ago.

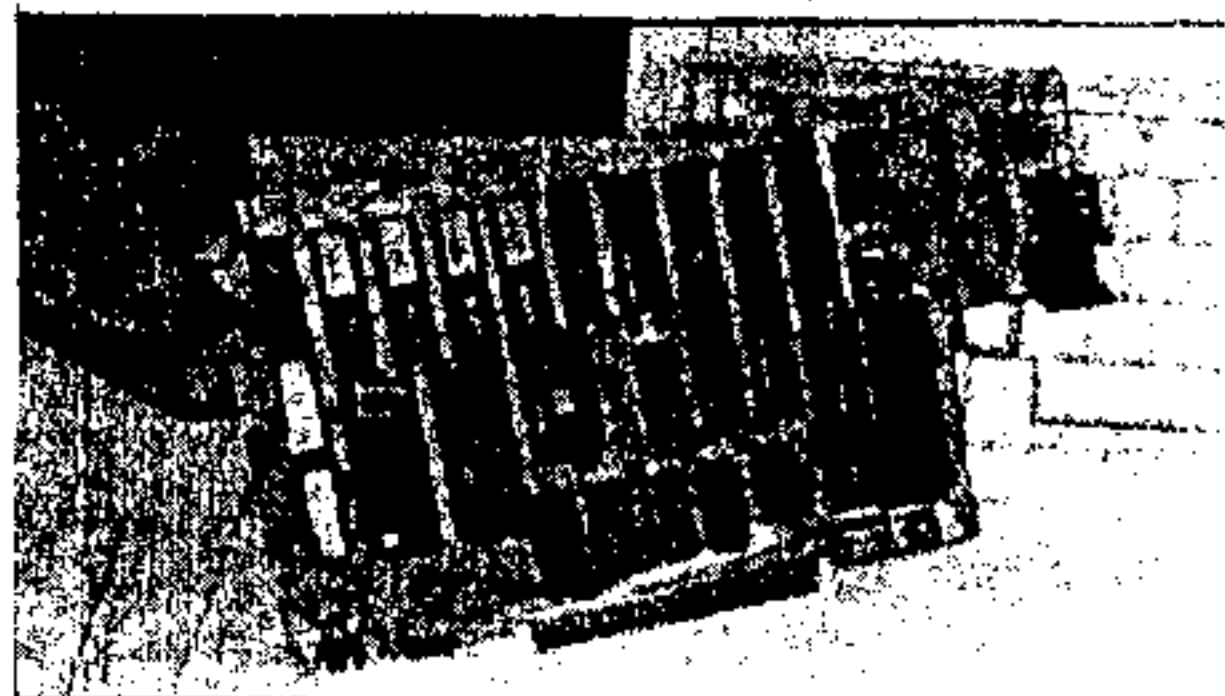
The following is a description of some of the capabilities of this remarkable device.

MICROPROCESSOR: The TMS 9995 is 5 to 6 times faster than a TMS 9900, the processor found in the TI99/4A. This processor is only slightly slower than the 68000 CPU, yet is much simpler to use, more accurate mathematically, and contains a smaller instruction set. The advantages of this smaller instruction set is an article in itself. Suffice it to say that this technique, called RISC, is getting a lot of attention in programming circles.

MEMORY: The standard Geneve Computer comes with 640k of RAM. This is expandable to 2 Megabytes using special memory expansion devices. A Myarc 512k card can be made to work with the Geneve with simple modifications. The Myarc 512k card memory may be directly accessed by programs.

GRAPHICS: The Geneve uses the Yamaha 9938 graphics processor. The 9938 processor was designed by Texas Instruments and Microsoft Incorporated. The computer world will discover this chip and its capabilities much in the same way that they proudly announced 16 bit computing for microcomputers; years after TI had introduced the TI99/4A. This graphics processor supports a variety of different modes for graphics and text.

TEXT: The Geneve supports both 40 and 80 column modes. The 40 column mode is similar to that of the 99/4A, so none of your current word processing software is obsolete. However, text, foreground and background colors may be any of 512 colors. 256 patterns are available for redefinition. One of the 80 column modes is the same,



while another supports blinking text and multi-color text. Some limitations apply, but this permits programmers of the system to use many of the advanced human factors graphics techniques just now being developed. The use of color to impart information, much in the nature of peripheral vision, can make word processing tasks, as well as the initial learning process, easier. Your Geneve computer will be able to keep up with this emerging technology for some time. Indeed the rich

resources of the TI programming community may well result in some breakthroughs in graphics presentation. It is reasonably well known that some organizations in the community are working very hard in this area. Since each of these various screens occupy very little memory of the 128k of standard video RAM found on the Geneve, up to 32 screens of text can be stored in memory at once. All of this information is directly addressable by the programmer. This bodes well to provide a rich environment for the system and applications programmer and thus, the user.

The Geneve supports every text mode of the 99/4A, as well as many new modes that use much of the available memory. One of the more interesting modes supports a resolution of 256 by 216 pixels. Each pixel can be any of 256 colors. This mode also supports multi-color sprites. Each pixel row of the sprite can be any of two colors. Another interesting graphics mode supports 512 by 424 pixels with each pixel any of 16 colors. The on-screen display of a maximum of 16 different colors can be selected from a pallet of 512 colors. This mode is the same resolution as the Apple Macintosh Computer, yet the system still finds the capability to support sprites, which the Macintosh does not. The 9938 chip has built in commands for line drawing, block moves and copies at hardware speeds. Programmers will have a rich, challenging environment for creativity, all at an affordable price for the 99/4A owner and convert alike.

INTERFACES: The Geneve has a number of ports. For video, this a port for an analog RGB monitor. The analog RGB monitor is more advanced than the digital ones used by the TI Professional Computer. Texas Instruments used the quality of the TI PRO monitor as a major component in its "Dare to Compare" campaign against the inferior IBM PC display system. An Amiga monitor displays

the power of the Geneve quite well and is readily available. However, an additional port permits the use of your existing TI 99/4A monitor. Therefore, your current equipment is not made obsolete by the new machine, allowing you the luxury of getting the best price for your existing monitor and cutting the best possible deal for your upgrade. Indeed, some are already at work seeking to separate early dropouts in the Amiga world from their monitors. The Geneve also supports the Amiga mouse. Other monitors of the analog RGB type work, however, do not pay extra simply because of the name on the front.

Your 99/4A console can be used as a standalone device with the purchase of the Geneve. The Geneve comes equipped with an IBM style keyboard. Other keyboards, costing from \$50 to \$500 will also work just fine. Since the Geneve replicates the functions of the console, you will only need the expansion system or one of the inexpensive expansion kits.

A multifunction port permits even more access to the Geneve. While labeled as being for the Amiga mouse mentioned earlier, this can also support sophisticated applications input from equipment both exotic and common. A video digitizer can input signals, for instance. Pictures

taken from a video camera can be fed into the system. A digitizing tablet, which turns the Geneve into an elaborate data collection system or a component of a computer aided design (CAD) system is fully supportable, given proper software. Light pens are, of course, appropriate input devices as is information from a video cassette recorder or a video camera. Indeed, with external converter devices available on the market, you can pipe in television signals and enjoy crisp resolution and vibrant colors never seen before from a commercial television set, thus putting your RGB monitor on overtime.

HARDWARE COMPARISONS: To put this in perspective, compare the Geneve to other computers. The Geneve comes with 640k of RAM, equivalent to a fully configured IBM PC XT. This memory is expandable to 2 megabytes, twice the standard memory of an Atari 1040 ST. The Atari ST, of course, is one of the more popular "non IBM machines" on the market. The Atari ST is the fastest microcomputer available in its price range. The Geneve is roughly equivalent. The makers of the Geneve have gone to the extra expense of installing special purpose chips to handle, among other things, input from disks, lightpens, and other devices. In a similar vein, these special purpose chips handle output to screen, disk and elsewhere. And what about graphics? Again expensive special purpose redundancy pays off. Therefore, in graphics, input and output, the Geneve runs circles around the Atari ST. The Geneve displays eight times as many colors as the Commodore Amiga. The Amiga is the superior machine with their special graphics display handling circuits in these respects. The Geneve, unlike the Amiga and the IBM PC AT, supports graphics with a 'true aspect' ratio. This is the superior form, and gives higher resolution through the use of square pixels, the tiny dots used to give your computer screen, even your television its color and appearance of depth.

The Geneve rates highly as a smoothly upgradeable machine. It obviously will be compatible with the newly developed Myarc disk controller card. In disk drives supported, the Geneve with the Myarc disk controller card will defeat the IBM PC AT. Four 20 megabyte hard disks can be supported with this upgraded configuration, not to mention that the same scheme will control four (or less) double sided QUAD density floppy drives of the conventional 5 1/4 inch size. The drives that use the new plastic bound three inch disks are supported as well. Knowing the market, the Geneve makers realised they needed a system that would become obsolete gracefully, as has the 99/4A.

Features of the 99/4A which still challenge the marketplace are retained. An example is the 99/4A's well known device independent operating system. Virtually any peripheral can be attached, unlike almost all other computers, including those costing thousands. Device independence is a feature you (the 99/4A owner) have purchased years ago and is one that should not be discarded in the name of progress. Therefore, the Geneve is superior to most every other microcomputer in graphics, speed, memory capacity and in versatility.

A full blown Geneve system would contain a Geneve computer, a WDS model hard and floppy disk controller, a TI RS-232 card, plus a 3 slot expansion kit, linked to two full blown 720 kilobyte floppy disk drives and a high resolution serial RGB monitor. If bought all at the same time, using all new components, your system would cost less than \$1,000. One of the finest features of such a system is that it can and, probably should be acquired incrementally, particularly if you currently own an expanded 99/4A system. For a machine of this class, this is an incredible price. The Atari 1040 ST is well known as the first computer that costs less than one dollar for each one thousand bytes of memory, new. The Geneve may be the first machine to drive that cost down to fifty cents per thousand.

SOFTWARE: The Geneve will come bundled with a new version of Extended BASIC on disk which is fully 6 times faster than TI Extended BASIC. Also included will be a MS-DOS like operating system. The package is called "DOS like" because the commands used will be very close to MS-DOS. However, the internal workings of the system will not resemble nor be compatible with MS-DOS. This will be a boon for those who have had to struggle through learning MS-DOS at work or on another machine. In the package also

will be an 80 column version of TI Writer with a larger memory and other features.

A number of other products specifically designed for the Geneve will be available at or near the release of the Geneve. A number of 'C' compilers will be available by all expectations. C is a very popular language on 32 bit machines and is now beginning to appear in microcomputers in the last few years. Some business software will be readily available. UCSD Pascal, actually a language within its own operating system, will also be standard. Software developed on many machines, including the IBM PC, Apple, and others which use this system will run without modification on the Geneve.

The new Geneve software will allow users to set up directories as an aid to manage multiple files. A software RAMDISK will also be available, where the user can deal with a notional or in-software emulation of a disk. All interaction on this RAMdisk will be in memory, thus it will operate at extremely high speed. Print spoolers will be available. People still pay \$200 for print spoolers, which merely are hardware systems (now software) that fool both the computer and the printer. The printer is wired to signal the computer to stop sending data while the printer repositions the print head, or rolls up the platen. Meanwhile the computer is burning up thousands of cycles waiting for the printer to get ready to receive data again. A spooler is nothing but an ever ready printer to the computer and a patient computer to the printer. The job is transmitted to the spooler in a second or two, and you are ready to go again while the printer goes ahead to finish the job.

TI BUSINESS MACHINES: The Geneve is assembly language compatible to the TI mini computer world, and awaits a member of that community to make that software run.

There is one silver lining in the "Perils of Pauline" development path of the Geneve, so fraught with delays. Time to think about the new arrival has been purchased with the sweat of the developer - in a process which would normally have been extremely secret and quickly sprung on the unsuspecting community with little or no warning.

NEW OFFERINGS: One new company has been started specifically to develop Geneve software. A true multi-tasking operating system is among the goals of this firm. Multi-tasking to a user means that several programs can be run at the same time. Multi-tasking is at the heart of such programs as Sidekick for the IBM where various panels, or windows are pulled down to allow notes and other activities to take place. Yet another goal for this new developer is a macro-assembler. Macro assemblers are small utility programs that can be strung together to achieve a variety of goals. In the mini computer world, programmers adroit in the macros of their particular machine rarely had to write much original code to achieve powerful results. This capability will soon arrive for you with the Geneve.

Soon after shipments of the Geneve begin, BASIC and Pascal compilers will be made available by this start-up firm. A compiler may not be a familiar concept to all who read this, though it is simple to pick up. When your 99/4A receives the RUN command, it wakes up and "interprets" the program you have told it to run; every single time. You are probably aware that assembly language is faster. The reason for this is that it is closer to machine language and therefore requires minimal "interpretation". BASIC, however, along with a host of other languages, is not that close to machine language. Easier to remember and use, but requiring some form of intervention. The interpreter is often used for BASIC. While it gives constant feedback, an interpreter is

slower than a compiled program which is a machine or assembly program. You write the program as usual, then run the program through a compiler. That program compiles a collection of assembly language or machine code commands. That "compilation" is what you then use when you need that program. The compilation is much faster, almost indistinguishable from a program written in assembly language. The 99/4A only recently got an example of a compiled BASIC and a compiled C. If you have yet to experience the utility of compilers, you will certainly enjoy the Geneve. The increased memory will, of course, make these compilers superior in performance to anything currently in use on the 99/4A.

A HOST OF GENEVE SPECIFIC PROGRAMS are to come. Lou Phillips of Myarc has estimated that four to five years of effort will be needed to complete the full sweep of programs needed to truly tax the Geneve system and the chips associated with it. During that period, if a new design comes along, the card, not the entire

structure can be modified. Almost immediately however, terminal emulators, word processing programs that support such sophisticated typesetting concepts as proportional spacing will begin to arrive.

Potential new products for the Geneve include databases, spreadsheets and paint programs.

The Geneve is one of the most remarkable computers ever introduced. A technical marvel, not a ripoff or anyone's clone. We are indeed fortunate that it has been designed to take advantage of the tremendous capability of the TI 99/4A... and its users. It should appeal to everyone, either as a first, a second or even third computer.

- by Chris Bobbitt (c)1986

FURTHER CONSIDERATIONS: Given the fact that the TI 99/4A is at a "dead end" in relation to long term

viability, the Myarc 9640 presents the only alternative to the investment in hardware, software and time on the 'learning curve' for 99ers. The 99/4A simply does not receive the same support as any other popular computer system that is, in those magic words, "in production".

Granted, the level of support that DOES exist is phenomenal. That does NOT mean that such support will continue, say, as long as the old Apple II!

Given the fact that the 9640 is the only "upgrade rumour" ever seen RUNNING (all snide remarks aside) by 99/4A owners, it deserves consumer support. Obviously, the best way to make this work is through supporting Myarc's efforts, buying a Geneve as your next machine, selling your used equipment to other TI owners and patronizing the companies which support both machines.

Apparently the large US company is Triton offering the IBM type machine. Well, from the reports we've received this new hybrid system is a box which runs an 8088 processor and connects to your 99/4A system. This system does not include an IBM keyboard, you still use the 4A as an input device.

Worse, this does NOT allow program, data or information transfer. It is basically an IBM clone with more limitations than a typical PC.

The critics note that for the price (\$500 - \$600) you might as well buy a PC clone with keyboard, drive and monitor to sit next to your 99/4A.

Without the capability to transfer data, programs or information between the processors, my opinion is that this unit has little value for the 99/4A community other than running PC software. In my book, the best way to have accomplished this task would be through a processor bus interface ie: a TMS9650 Multiprocessor Interface chip to connect directly from the TI bus to an IBM bus via a

short cable. With the cost of clone motherboards and a driver program at both ends the transfer of data from one system to the other would be more intelligent.

SHAZAM



...IMPACT-99...
T.I. Happenings

by Jack Sughrue
Box 459
E Douglas MA 01516

JUST SURVIVAL?

DON'T YOU BELIEVE IT! It takes quite a bit for any organization to survive. It takes quite a bit more for an organization whose base has disappeared to survive.

And yet we 99ers have done it and done it well.

It's impossible to imagine all the efforts of all the people (many no longer with us) who brought us to where we are today, YEARS AFTER THE ORPHANING! And our computer is better than ever because there are more pieces of hardware and software and firmware and, through user groups, textware, than ever before. We have become a world community. In the process our machine has become a POWERFUL tool in the home and business and education worlds.

Could you have imagined a few years ago that, with your \$49.50 little "toy" computer, you could go beyond a MEGABYTE of memory and operate up to 5 QUADDENISTY drives! Could you have imagined an environment so tight that you could have an advanced Wordprocessor and advanced Editor/Assembler and advanced Disk Manager all operating as an environment off ONE DISK! (not to mention a FORTHLOAD, a disk editor, a c LOAD, a pair of master menus, and piles of other things thrown in - like auto cataloging, 10 screen color choices, printing or reading any 80 file, and on and on - STILL ON THAT ONE DISK!)

Not to mention the extraordinary software: TOTAL FILER, FONTWRITER, TI ARTIST (and all the zillion files and companions and converters that can be used with it - including the remarkable RLE), CREATIVE FILING SYSTEM, SCHEDULE MANAGER, AND!!!! I'm looking through my disk file and am astonished. I have more things than I know what to do with. I have a columnizer and sideways printer and text/graphic creator (all wonderful FAIRWARE items), a WHEEL OF FORTUNE game with a robotic Vanna, a program that lets the TI sing!, one that writes in GOTHIC, one that creates newsletters with many fonts and graphics, one that tells fortunes with speech, Corey Cheng's remarkable cribbage game, and Nutmeg 99ers superb group disks.)

I sit here and wonder when I'm going to use it all. As a writer, I am primarily interested in ALL aspects of word processing. Having used very many processors for very many computers, I can honestly say the flexibility of FUNNELWEB is hard to beat. I love the large type of 40 columns and the easy FORMATTING to 80 or 136 or whatever. As a teacher I am interested in the educational (though all programs are educational) aspects of computing in the class. I use many computers but mostly TI because it is easily the best for the stuff I do in my class (though the Apple and Commodore have more of the user-friendly printer materials like NEWSROOM and PRINTSHOP which has nothing comparable on the TI). As a game-player, I am about 20 years behind on playing all the wonderful games I own: all the INFOCOM games, all the

ADVENTURE games, all the games that I haven't even created through my TUNNEL OF DOOM and ADVENTURE editing programs. (Not to mention the constructions of SPACE STATION PHETA, GRAVITY MASTER, and the intricate tutorial/play/change of NIGHT MISSION.)

HOME APPLICATIONS! I haven't yet put my checkbook files onto any of the wonderful checkbook filers I own. I haven't even indexed all my P.G. Mowhouse books onto my PR BASE or CFS for easy access. Nor my video collection onto VIDEOS. I've yet to wire my house through the TI for alarm system, light switches, auto radio/TV programs, coffeemaking. (Yet all possible with my computer.)

UTILITIES! I have utilities I can't even begin to use, many I don't even understand. Why do I keep buying this stuff?

Because I want to make my computer be as potent as a home computer can be. And it is. And I say that someday I'll learn how to use such and such. Maybe I will.

And that, my friends, is REALLY why I own and love my 99. I am learning. I am learning every day. I am learning every time I sit at that machine. Learning - let's face it - is great fun! The TI sits there encouraging me to LEARN.

All that stuff I said above is true. So's the fact that I've made almost 200 friends worldwide with whom I correspond regularly. So's the fact that the faires I attend are a source of immense delight to me. So's the fact that getting my monthly newsletters and magazines (like MICROpendium and COMPUTER SHOPPER) is like a continual Christmas and last-day-of-school rolled into one.

But it's the learning and sharing that really keeps me hugging my TI.

And the learning that made me evaluate my computer future.

As a teacher with a wife and four kids (all four kids were in college at the same time a couple years ago and now only two kids and one wife are still going), I have found upgrading a bit costly. I took a couple extra jobs to buy my computer in 1981 (\$499.99) and held onto the jobs to get Extended BASIC (\$119) and TI WRITER (\$99) and LOGO (\$119) and a tape recorder (\$89.95) and my Expansion Package (Box, 32K, RS card, Controller, one drive) (\$900). By the time the console came down to \$49, I owned five (for my own kids and for my classroom use), and I had invested over \$2500 in hardware, software, and textware (about 1/5 my annual take-home pay)! My wife was threatening homicide.

Justifiably.

I was (am?) a computer addict.

And Elaine became (is?) a computer widow.

Though I had fun and used the beast all the time, I was (am?) probably just a very dumb version of that genius Jim Peterson. I learned more about the TI from Jim than from the library of over 100 TI books I own. (You probably didn't know there were that many.)

I stayed involved with user groups and the writing of articles and the editing of newsletters and the

constant using and modifying of programs at home and at work.

Long after TI left us.

Long after the first big exodus.

Long after the diminishing user groups.

Long after the drying up of most sources (book stores, department stores, computer stores, magazines [like COMPUTE, HCM/99er, FAMILY COMPUTING]).

Even long after people stopped laughing at me for suggesting that the 99 was in the same class as Apple or Commodore or Atari. It isn't. It's better!

Then I thought "upgrade". Should I get an IBM clone? Or an Apple? or what?

All the computers that I use at work and elsewhere came under exacting scrutiny. Will I buy this one? Or that one?

I began, also, to try out other computers in computer stores and visit friends who let me test out their equipment. I borrowed books and magazines about other computers.

Then Triton came out with the IBM compatible converter for the TI. It was a clone that used the awful TI keyboard.

I had saved up steadily, penny by penny, since my blasts in 1981 and 1982. And now I could upgrade to a better computer. IBM/TI was one option. Now that the choice was a reality, I had to reconsider.

Back I went to my TI. To MICROpendium. To COMPUTER SHOPPER. To FUNNELWEB and SCREEN DUMP and PRINT IT and CFS and CHINESE CHESS and HITCHHIKERS GUIDE TO THE GALAXY and GRAPHX and CSGDIII and PRINTER'S APPRENTICE. And to all the programs I'd written and all the programs given to me as gifts by other TI authors and all the PD stuff. And all the great stuff from Asgard. And, most of all, all the stuff from Tigercub Software that doesn't even BEGIN to exist for other computers. There are no TIPS or NUTS & BOLTS for Apples or IBMs or whatever.

But my SSSD drive with 32K expansion was becoming limiting.

So I went with the best upgrading I could possibly go with the TI.

First, I bought the MYARC 512 for a bunch of reasons. I had borrowed a Horizon 192 for a few weeks and enjoyed the speed of my autoloader FUNNELWEB. I thought 512 would be of more use to me (particularly as I could use as much spooler space as I wanted to print out my files while I continued merrily on with my computing) because of the immense amount it would hold. Such things as CSGD or FUNNELWEB (with my FUNLPLUS! included) could leap back and forth from file to file and spool out any text files at the same time. The RAMdisk (of the 512 card) is the greatest leap forward I could have dreamed of. It is easy and wonderful.

Next I looked through COMPUTER SHOPPER and bought (for only \$75) two new, highly-recommended Tandon full-height DSDD drives. I plugged them in and used the

double-sided abilities with my TI Controller.

Then my MYARC Controller came in with that superb DMIII and the inside ability to catalog from anywhere (though I wish it could Print with that built-in cataloguer the way it does with its DM). Now I can go into Myarc DM from FUNNELWEB, though DM 1000 works equally as well from that environment. Now I can configure any sided/density combinations I want (including the 512 as drive). It's so great to watch disk verification when initializing as it whips up to 1440 unflipped, instead of the old 360. No more flippies. Speed. Speed. Speed! It's even very fast to be in RAMed FUNNELWEB with a pile of text sitting in EDITor, realize there is no initialized disk, SF to RAM, leap into DM1000, initialize a disk, leap back into EDITor, LF from RAM, and complete the task at hand without having enough time in between to get another frosty Foster's from the fridge.

I suddenly entered the new world of computing very much on my own terms. I quadrupled my disk capacity, tripled my drives, increased my memory twelvefold, added a much desired buffer of incredible size, and created a speed operational zone beyond my wildest dreams.

All this while sitting on a collection of software and textware that I haven't even begun to tap.

Let's say not another bit of textware, firmware, hardware, or software will ever be created for the TI. This won't happen (as there are presently over 700 companies - mostly Mom & Pop - making stuff for the TI) but let's pretend.

More does that leave me?

With one hell of a great machine and lots of stuff for it! That's where. This machine will last me for the rest of my life just with what I have and what is available right now.

Then I ordered a Geneve.

Frosting on the cake.

I had seen it and used it about seven times and had talked and read about it incessantly for months. I wanted that enhanced keyboard, for one. I wanted to increase my memory beyond a MEGABYTE, for two. I wanted all the things that have been and are being written for it, for three.

I wanted to truly upgrade my system. Beyond the power and the speed and the graphic resolution of the IBM and Amiga and Atari and Apple and Commodore and ALL the other lesser machines while still keeping the incredible built-ins I came to accept as intelligently designed computerisms: RES, NUM, CALL, etc.

So here I am, a TI 99/4A addict and loving it; a man who has come to realize that what I have now is already beyond what I presently need and beyond what I can continually strive for but never beyond what I can imagine.

PROGRESS AND COMPATIBILITY - MYARC's 9640

by J. Peter Hodge - Boston Computer Society - June '87

As of late I have been in what some people call "hiding". I spent last week in New York state with Paul Charlton, working 12 to 18 hours a day to finish the operating system for the 9640 (I am mostly writing device drivers for the operating system for the various peripherals, while Paul is doing the operating system itself). There were a couple sleepless nights staring bleary eyed into monitors, lots of consumption of liquid caffeine, several phone calls from people wanting to know when the DOS would be finished (including MYARC's secretary Cynthia, who wants to know what to tell the flood of callers to MYARC looking for the OS), and lots of bugs created and later eliminated. The bottom line is that the OS is still not done. It is one huge project. We had hoped to have it ready to show at this month's Boston Computer Society meeting, but it didn't work out. Certain parts of the system that we had hoped to have finished last Wednesday, weren't really close until Sunday morning. Work goes on. Slowly. Tediously. But it continues. Believe me, no one wants this operating system to be finished more than Paul and myself. The work is slowly driving us crazy. The operating system could be finished in 24 hours, or it could take rather longer. We aren't stalling. There are huge amounts of code to integrate. The operating system is about 88K in size. That is larger by nearly a factor of 3 than the largest program you can create on the standard /4A system.

On a related note, I would like to set the story straight on hardware compatibility with the 9640.

First the TI, CorComp, and MYARC disk controllers will all work. It doesn't matter which EPROM you have in the card. The TI controller can handle 80 track drives (just not in double density mode), the CorComp controller and the MYARC controller can handle 80 track, and 16 or 18 sectors per track. The reason for this is that the EPROM or ROM in the disk controller is not used by the 9640, but is replaced with code included in the operating system. This allows the TI and CorComp controllers to run as fast as the MYARC currently does. The speed of disk access is very impressive - you may not recognize you disk drives.

Any RS232 card from TI, MYARC, or CorComp will work. Print spooling can be set by the user. The print spooler is accessed just like a normal device, such as PIO, rather than SPID as on the MYARC 512K card.

The Horizon RAM disk will work, however at this time in order to boot the system from it, it must use the Horizon EPROM from Genial Computerware. This is not a ploy for me to make lots of money, but a decision made because of several unfortunate characteristics of the RDS distributed with the Horizon card. Currently there is support for only 1 Horizon RAM disk, although this could change in the future.

The MYARC 512K card can not be used as it is. However, for \$15 MYARC will convert it so that it can be used as additional memory for the 9640. Once the change is made, the 512K card can not be used with a /4A, so carefully consider having this modification made.

DataBiotics is currently working on a "super ram disk" which will feature something like 500K of memory that can be used as a RAM disk, or several smaller RAM disks, and print spooler. The product will also have a clock option to time and date stamp files, and should be 9640 compatible. If they can pull this one off, it looks to be a winner.

The speech synthesizer is supported, but you have to buy a special card to put it into the expansion box. Such a card is available for about \$40 from Rave 99.

The TI 32K and other memory expansion cards such as the Foundation will not work. Since the 9640 has over 600K of memory in its minimal configuration, this should not prove any great hardship.

At this time, the Mechatronics SRAM is not supported.

The CorComp Triple Tech card will work, except due to a somewhat faulty hardware decision (works on the /4A but not on the 9640) the Triple Tech will eat up about one eighth of your available memory.

The 9640 also supports an internal RAM disk which can be set to any size by the user, within the constraints of available memory.

The current MYARC Winchester Personality card is supported, and of course the new MYARC hard drive/floppy controller will be supported when it becomes available. I hope this has cleared up any misunderstandings you may have had about the 9640 and your present hardware set up.

The documentation on the 9640 doesn't currently mention some of the more interesting features that are in the computer. For example, all disk files are time and date stamped at creation and on every update. This information is available on disk catalogs, and even from BASIC using an extension of the current method of cataloging a disk. The RAM disk support is done similarly to the MYARC Mini Peripheral Expansion System, in that if you assign the internal RAM disk to be drive 1, you can then make your physical drive 1 respond as drive 2. This means all drives can be always available, which is not possible on the /4A. This is done independent of CRU base, thanks to the single master DSR (device service routine) created for the 9640. For the assembly programmer, there is a wealth of system utilities for graphics available through XDPs, written by Chris Faherty. The operating system also supports a new powerful set of disk access commands designed by Paul Charlton, and implemented by both of us. These allow for easy file and disk access from assembly for disk and file copying and comparing. The operating system also supports multi-tasking when not in /4A mode. This means you could be editing a file with your word processor, while downloading a file from a bulletin board, while a graphic image of a frog dances on the corner of your screen. Multi-tasking allows you to run several programs at once - and this should open up some exciting possibilities in the future.

Until the operating system is released for the 9640, I would recommend taking anything you read from outside MYARC sources with a large grain of salt. I have read numerous articles on the 9640 which contain information that is incorrect. The articles claim the machine can't do certain things, or it will eventually do some things better than it does now - and they are completely wrong. While articles on the 9640 are popular, many of those writing are very badly informed. This problem is as much a fault of MYARC as anyone. To release the hardware with incomplete software to anyone but developers was a serious mistake in my estimation. It has calmed many people down, but has started a new furor over "where's the operating system" which is just as bad as the old "when will it be released". Lou Phillips has a habit of saying things to calm people down. If someone asks him when a product will be ready he tends to give the absolute best case answer. Unfortunately, in this business, it tends to be way off base.

A9CUG CALL NEWSLETTER

From Northern Nevada
Ninety-Niners Newsletter

The program librarian announced that a new Freeware/Fairware Program called Sideways had been released. This program allows you to print Multiplan files sideways on your printer.

SHORTBYTES

(from Cin-Day News by Jim Peterson)

To get the computer to read the CALL KEY input as upper case letters, even if the alpha lock is up, just use key unit 3:

```
CALL KEY(3,K,ST)
```

To get the computer to hold 24 lines of text on the screen without jumping the first line off the top - just put a semi-colon after the 24th line.

You don't have to RESTORE anything with the ESTORE statement. In other words, you don't have to read a DATA statement before you ESTORE it. You can write your program to optionally or randomly RESTORE any one of our DATA statements and thus to begin reading DATA from any one of the DATA statements.

If you have the Extended Basic Module, why not leave it plugged in and select the extended Basic Option even when you are programming in Basic. This will allow you to type 5 lines on a line number, which will still run in Basic (unless you put too many short items in a DATA statement), and the extended Basic Option will accept input of our program lines much faster, especially when the program gets long. It also accepts changes and deletions much more quickly, and a large number of lines. It will quickly tell how much memory you have left with the IZE command (but you'll have more in Basic) and will bring your rejected input back to the screen for correction, with fctn 8. It will also run your program, if you stay away from character set 15 and 16, and watch those double colons.

MECHATRONICS GMBH (Revisited)

Recently I had the pleasure of conducting a telephone interview with Franz Wagenbach of A.P.E. Ltd.. Franz had just returned from the storm ridden West Germany. My first

question was what was the GMBH after Mechatronics all about. He said it was the equivalent of our Company of Limited designator.

Mechatronics has two facilities one in Ulm and one in Stuttgart. The facility at Ulm is development area while Stuttgart is the production and implementation division. Ulm is responsible for the new 80 column card. This new card is now available from Tenex, Triton and of course T.A.P.E. Ltd.. The features include as the name implies an 80 column display on an analog RGB monitor.

The card is installed by plugging in replacement chips in the video processor. Audio must be taken from the monitor jack plug in the rear of the console. On incidentally, the card is not for the P23 but is a stand alone with its own transformer. The monitor is plugged directly into the card. Future plans call for the mouse to plug into the card. Software for the 80 column card is on chips and can be accessed through Extended Basic with a open type statement.

The card gives you 256 colors with expanded graphics including multicolor sprites. You can also preselect color defaults. A special word processor accompanies the card as TI-Writer is not totally compatible. The price is 219.95. Another product just introduced is DOS 80. This chip replacement on your TI Disk Controller allows you to access an 80-96 TPI (Tracks Per Inch) drive, as single density. That will give you 1440 K on a dual-sided drive.

Word is still out on accessing this capability with a Corcomp or Hyarc to give you a one megabyte floppy. Please allow Franz three weeks for delivery. The price for this goodie is \$45.00. The last item is a disk drive for the CC 40. This machine was TI's answer to the laptopable computer. Unfortunately, accessories are really rare. If you have any questions, Franz is always ready to talk to TI enthusiasts. He plans to set up a BBS from possibly 9 P.M. until ? He could sure use some advice on this last item, so share your knowledge. Franz can be reached at: T.A.P.E. Ltd., 1439 Solano Pl., Ontario CA 91764 Phone (714)989-9906.

Drew Molak Northern Nevada 99ers

1. PROGRAMMING TIPS: Technique for switching from JOYST to KEY: "Did you ever want to change a game from joystick to keyboard or vice-versa? Here is an example of a change done in the game "Aardvark" found in June '83 99'er Home Computer Magazine. Use this section of "Aardvark" as an example to change other programs:

Aardvark is like this....

```
630 CALL KEY(0,X,Y)
640 IF X=4 THEN FV=FV-1 :: GOTO 780
650 IF X=4 THEN FV=FV+1 :: GOTO 840
660 IF Y=4 THEN FH=FH-1 :: GOTO 900
670 IF Y=4 THEN FH=FH+1 :: GOTO 970
```

Aardvark can change to this....

```
630 CALL KEY(0,X,Y)
640 IF K=83 THEN FV=FV-1 :: GOTO 780
650 IF K=68 THEN FV=FV+1 :: GOTO 840
660 IF K=69 THEN FH=FH-1 :: GOTO 900
670 IF K=88 THEN FH=FH+1 :: GOTO 970
```

A9CUG CALL NEWSLETTER

WARNING!!!!!!

(From Grand Rapids Users Newsletter)

Beware of a program which may be floating around the country's BBS's called SUPERTRACK. At first appearance, it seems to be a track copier, but in reality is a diskeater. This program was uploaded to my BBS recently and I suspect that it will show up around the country. I was suspicious at first because the program tells you to remove the write-protect tape from your master disk. I could not understand why this would be necessary so I stuck two junk disks in my drives. When the programs starts, BOTH drives come on and the heads chatter like crazy. Whatever was on your disks is now in byte heaven. Your disks are zapped and I doubt that the action the heads are getting is doing them any good also. The noise is quite loud.

I have heard of similar programs for IBM which will zero-out a hard drive, but this is the first one I've seen for the TI. I just wanted to warn everyone so that no valuable programs or data are lost.

CALL NEWSLETTER is the voice of the Atlanta 99/4A Computer Users Group, P.O. Box 190841, Atlanta, GA 30325.

The A9CUG is not affiliated with any commercial company or organization. CALL NEWSLETTER is published by and for the members of the A9CUG to enhance their knowledge of home computers. It is composed of articles written and/or donated by members of our group and from articles appearing in other home computer users groups around the world. Opinions expressed by the authors do not necessarily represent the officers or members of the A9CUG. Membership is open to family and individuals who own or are interested in using and programming home computers. Membership includes newsletters as they are printed, access to meetings, and membership privileges. Annual dues are \$15.00.

WHY NOT?

THE GRAY-2 COMPUTER

The Gray-2 super-computer has a memory of 256-megavords, for the largest memory available in a computer. It can perform 250 million computations per second. Now, would someone please tell me how to connect it to my TI Peripheral Expansion Box?

NOTES: This is in Extended Basic. In CALL JOYST the X and Y are the variables for the position of the joystick. 4 or -4 is always returned. (see CALL JOYST in the User's Reference Manual.) In CALL KEY, we are checking for the K or Key that is pressed. The numbers 83, 68, 69, and 88 are the ASCII codes for the S, D, E, and X (arrow keys). Always use the same logic and variables found in the program. It makes it easier. For example, the GOTO's are the same: FV and FH logic are the same; and even line numbers can be the same. Each identical line number is doing the exact same logic. For example, in line 640, the X=4 is left on the joystick, while K=83 is S (left) on the keyboard.

From Front Reader -

EXCERPT FROM WORDPLAY PUNN SHORT NOTES

From Scott King in the AVIT
UG Newsletter(also Tigercub#35)

When you load a program in order to modify it, put a reminder of its file name in the first line.

Example: 1 ! SAVE DSK1.PROG/START

Then when you are ready to save it just LIST line 1, FCTN 8 it, using the space bar, erase the "1!", and press<ENTER>

BEST BUY OF THE MONTH:

From TRITON: TI EXTENDED BASIC => \$29.95
Call Toll-free 1-800-227-6900

MEGRAM from ATRONIC The only full megabyte (1024k) RAM memory expansion for the 99/4A. Price is "only" \$575.95 (US)

MULTIFUNCTION CARDS:

DS/DD Controller with 32k==> \$265.95 (US)
RS-232 with 32k ==> \$175.95 (US)
The above items can be ordered from RYTE Data; 210 Mountain Street; Haliburton, Ontario K0M 1S0. For full details, see the add on page 19 of the August 1986 issue of MICROpendium.

QUICKIE FLOPPY MAILER LABELS

```
100 OPEN #1:"PIO"
110 ESCS=CHRS(27)
120 EHP$=ESCS&"E" :: NORS=ESCS&"V"&CHRS(0)::
    ENLS=ESCS&"V"&CHRS(1):: UONS=ESCS&"
    -"&CHRS(1):: UOFS=ESCS&"_"&CHRS(0)
130 CALL CLEAR :: INPUT "ENTER NUMBER OF
    LABELS:LAB
140 FOR COUNT=1 TO LAB
150 PRINT #1:EHP$&ENLS&UONS&" PLEASE" ::
    PRINT #1:" DO NOT BEND"
160 PRINT #1:NORS&" FLOPPY DISK ENCLOSED"
170 PRINT #1:ENLS&UOFS&" DO NOT XRAY"
180 PRINT #1: :
190 NEXT COUNT
```


THE MYARC GENIEVE

by Bryan Rice (72067,1005), TWIN TI'ERS
UG

MYARC, INC. of Basking Ridge, NJ, has recently introduced a new computer system based on an ill-fated TI-99/8 and accelerated TI-99/4A. According to some, the TI-99/8 was to have been almost completely incompatible with the TI-99/4A and its PAB format. So when Myarc decided to develop the computer, they had to perform a major functional and physical modification to the basic structural design of the TI-99/8. As a result, a powerful and technologically advanced computer named the "Myarc Model 9640" evolved.

The system is expected to be released in the second quarter of 1987 and sell in the area of \$495. It comes complete with either a standard or professional IBM AT-style detachable keyboard with separate cursor keys and numeric key-pad and a package of six software programs including one for download cartridges to disk. As there is no cartridge port on this model, all software must be floppy based which is an easy task for the TI-99/4A.

Initially, the computer comes on a PEB card. You simply remove the flexible interface and replace it with the "9640." It is populated with 512K of CPU memory (expandable to a full 2 megs), 128K (out of 192K) of VDP memory, and 32K (out of 256K) of ROM. The connections provided on the card include: a Microsoft-compatible mouse port, a TI-compatible joystick port, and a RGB/Composite/RF-Modulator compatible video port. The RF-Modulator will ONLY work on a Black & White television set NOT color.

The internal ROM includes 24K of low-level operating system routines and 8K of GPL interpreter. All the mouse support routines are contained on both the ROM and the 9938 AVDP chip from Yamaha and Microsoft. When the machine powers up, 16K of RAM is used for various internal tasks and you are left with about 496K of space for your programs. And remember that all the routines, screen, and graphics tables are kept in the 128K of VDP memory, so 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 128K 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 chip inside the TI-99/4A; however, it is 4-6 times faster and comparable in speed to the Motorola 68000 and Intel 80286. The TMS9995 will be running at a full 12 MHz and a 16 MHz version may be offered in the near future. With 16-bit parallel RAM, the TMS9995 uses 32K (expandable to 64K) of high-speed static RAM to double memory transfer rates as compared to the TMS9900 which was a 16-bit processor running on an 8-bit bus. The machine is capable of emulating a TI-99/4A by merely changing a bit on a gate array which, when set, looks nearly identical to the TI-99/4A. This will allow you to use almost 99% of your old software, said Myarc. The only problems that they have found are the programs that use a non-standard method to scan the keyboard. The reason for the problem is that the TI-99/4A has 48 keys and the new machine has 93 so a different KSCAN routine, obviously, had to be used. Most of these programs use their own KSCAN routine and thus do not work. Also, there will not be any immediate support for speech because there will not be an available port to use.

Myarc is developing something similar to Concomp's Triple-Tech card but with a few added surprises. And for those of you with P-Code, the system cannot support any of the TI-99/4A P-Code cards in the P.E. Box, but Myarc will provide nearly full software support.

Anyone with the P.E. Box will easily be able to use the new computer. Those without the Peripheral Expansion Box will definitely not be left-out though. A version of the new system will be developed within a new style expansion box and a lower profile.

The communication chip is the same TMS9901 that is used in the TI-99/4A running at the same speed. On the other hand, one of the most advanced graphics chips ever produced is also used in the machine. It is probably the most exciting and vigorous part of the entire system. Finally, a high-resolution TI-99/4A with 80-column capabilities and the most powerful graphics catalyst, bar NONE! Myarc is using a 9938 AVDP, a chip TI and Microsoft developed jointly and then, unfortunately, abandoned. Luckily, the processor is now being produced by the Japanese. It's fully compatible with 9918A inside the TI-99/4A but supports a few extra modes and features. Where the 9918A has 8 control registers for graphics characteristics, the 9938 has 32 which provides 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 colors from a set of 512 instead of just 16. Text mode two is an 80 x 24 or an 80 x 26 (for a status line at the bottom like an IBM) format with 6 x 8 characters and a choice of two colors from the same 512. Multicolor mode is still there as is graphics mode one. Graphics mode two allows definition of 768 different patterns and a choice of 16 colors from the 512. Graphics mode three is the same as mode two except that instead of being able to have only four sprites on a horizontal line at a time you now can have up to ten. Graphics mode four is similar to the TI-99/4A's with a 256 x 212 non-interlaced screen resolution. Graphics mode five can support up to 512 x 424 using interlacing but this mode must be displayed on an RGB or Composite monitor. Graphics mode six has 512 x 212 resolution and each individual pixel can be defined as one of 16 different colors; although, this mode requires a full 64K of VDP memory for storing the screen. And graphics mode seven has the same resolution but uses a full byte of memory to define the color for each pixel which means that each pixel can be one of 256 colors! This mode also requires additional VDP memory and Myarc has made provisions for up to 196K of VDP RAM to be put on the card. Also, one of the control bits on the 9938 allows for what Lou Phillips calls "animation tricks." This means that it can do screen swapping which essentially provides for automatic animation controlled by the 9938 chip.

The machine supports the old PAB (Peripheral Access Blocks) format in the TI-99/4A mode so that, in theory, all the peripherals manufactured to TI specifications will work. Most of Concomp's equipment works except for the Triple-Tech card's speech capability. Also, most of the third party equipment such as the Horizon RAM-Disk work. A new PAB format is also used and nearly identical to that developed for the TI-99/8 but will reside in CPU memory for greater speed. It allows for logical record lengths of up to 4096 characters instead of the 255 on the TI-99/4A and has a full byte reserved for error codes, which means there can be 256 error codes instead of 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.

Phillips said that the first two peripherals that would be released would be a card with a retrofitted hard/floppy disk controller that will do away with the Western Digital support card and allow you to connect a 20 meg. hard drive for under \$500. Phillips has also

HINTS FOR REQUESTING FAIRWARE

by Jim Swedlow - Reprinted from Cleveland Area Users Groups, OH - Mar'87

Editor's note (Cleveland Area UG): Jim wrote "Side Print for Multiplan". This case from the "Cin-Day newsletter without any credits. I am not sure, but I think Jim is associated with a southern California users group.

These hints can help you when you send for fairware:

SEND A NOTE or letter asking for the program. Fairware authors are in this to share their effort and to support the 4A. A check without any kind of note is discouraging. Mention where you heard about the program and describe your system.

IF YOU SEND A DISK, initialize it as SSSD (unless otherwise specified). Don't sweep. Format it and verify the sectors. This will make sure it is OK. Check with the postal service to make sure you are using enough postage (and not too much!!!). Be sure to include return postage.

Many fairware authors would greatly appreciate getting programs from you - it is a waste to send an empty disk! Send programs from your area that may not have migrated to where the author lives. Mention the programs in your note so the author will look for them.

IF YOU SEND MONEY, print your return address clearly. Better yet, send a mailing label. It not only helps the author, but the post office moves your mail faster when the address is typed.

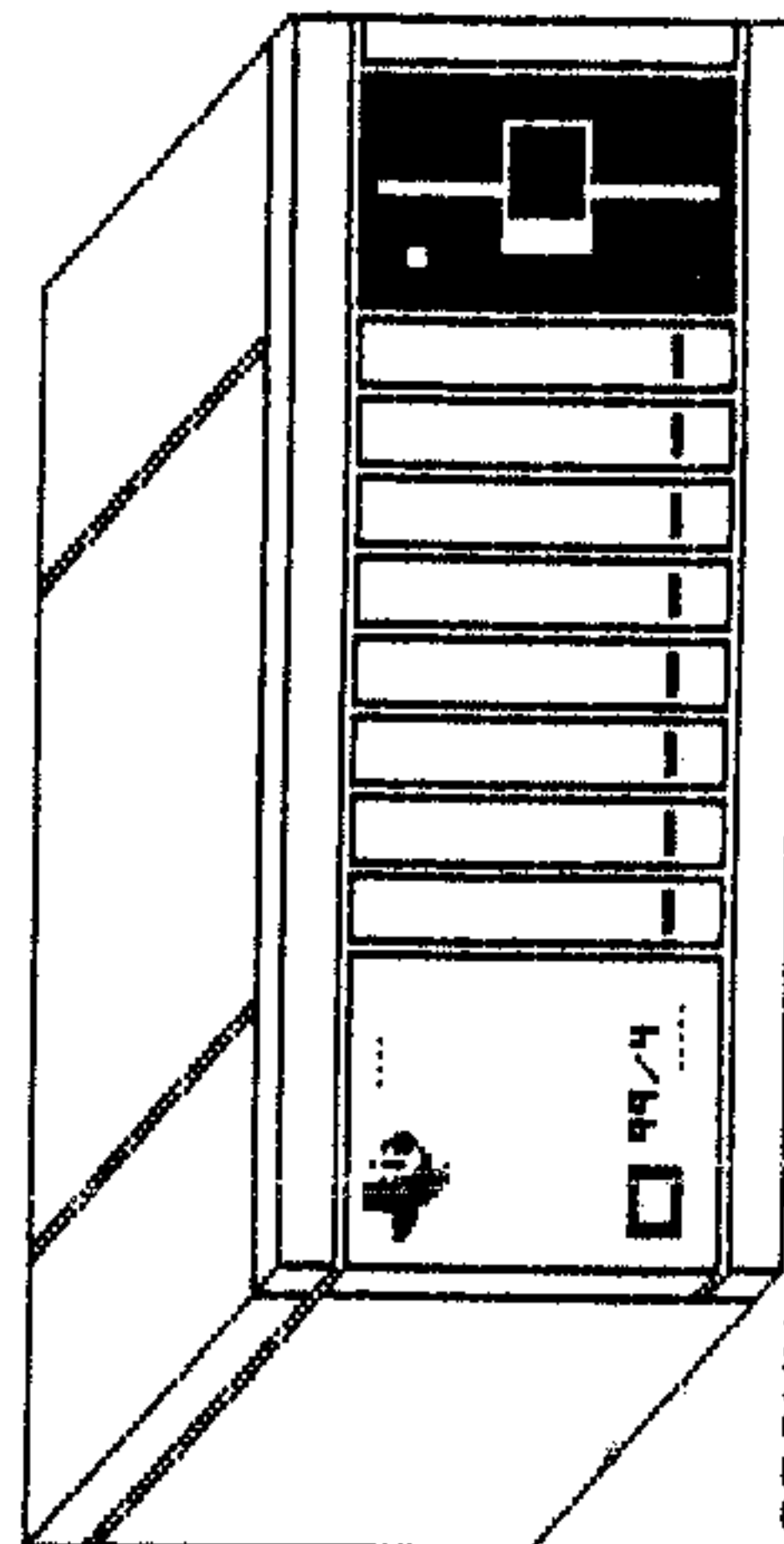
Send your funds in the currency of the author's country. It can be anything from inconvenient to impossible to cash a check written in foreign funds. Your bank may be able to help or you can send an international money order from the post office. This is slow but sure - one that came to me from France took almost a month!

REACT AFTER YOU GET THE PROGRAM. Drop the author a line and let him know what you like (or don't like). Many fairware authors report that communication with other 4A owners is very important to them. Many programs have improved significantly from user feedback.

If you ask a question send a SASE (self-addressed stamped envelope). It will help assure that you get an answer.

SUPPORT FAIRWARE AUTHORS. If a contribution is requested and the program meets your needs, send it with a note. Some fairware authors give special support to people who support them. Examples are extra documentation, notices of fixes and updates, copies of updates and bonus disks.

USE COMMON COURTESY. Fairware authors are 4A owners who work and/or go to school full time. Fairware is a side line. Treat them the way you would like to be treated.



said that 3.5 inch drives are going to be a standard capability if you get the new controller. And next, a card to allow speech, extended sound and MIDI control, and a few other exciting implementations. After those two cards are complete, Phillips says that the next thing he plans to work on is a card that will provide 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. The basic structure of Myarc's IBM compatibility will follow two paths. The first is for people who don't want the new computer but want IBM compatibility. Lou describe a system of two PEB cards and an IBM AT-style keyboard. One card will contain the 80286 processor, 640K of DRAM, BIOS ROMS, and VDP. The other will contain the basic I/O ports and functions. The second structure will be a plug-in card designed for use with the console version of the new computer. This version will contain two internal expansions slots with one used by the IBM plug-in card. This card will only house the 80286 processor and the BIOS ROMS. The reason being the new computer already holds all the DRAM necessary and also all the I/O ports needed. To get IBM compatibility, all you'll have to do is switch from the TMS9995 to the Intel 80286 (possibly the NEC V30 a 12 MHz replica of the 80286) and your in IBM country.

The computer comes with a very enhanced version of Extended BASIC II and in the same format as it is currently produced (floppy based). Phillips said that XB-II is very similar to GW Basic from Microsoft and is somewhere between 2 and 4 times faster than IBM AT BASICA. The additions to XB II that come with the new computer include full mouse support, advanced event-driven control keys (which means that 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 the one released by IBM for the PC. In other words, the machine will have an open architecture and no hidden secrets like II kept with GPL. This should 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 system. As promised, Phillips has brought the computer to market and claims that Myarc has plenty of capital to allow them to continue with extensive support for the users. Also, 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 really in vogue now and it would make new software development easier; however, Pecan Software has agreed to supply all of the UCSD language library to Myarc for an extremely low cost.

Lou Phillips and the rest of the Myarc "team" are very dedicated to their cause and I suspect the new computer will furnish many prospective buyers with an unprecedented amount of power and support. Already, many software packages are being explored and created for the new machine including everything from business and management software to basic utilities and games. I think we have a very viable source of "LIFE" for the TI-99/4A and Myarc, our "foster parent", is consistently improving our pride and joy.

This information is provided for the benefit of all users and distribution is encouraged as long as my name, the UG address, and this short paragraph remains with the file. Please forward any questions or comments to the address below. All of the information contained within this document is subject to change without prior notice.

Twin-Tier's Users Group
ATTN: Rose Sass
R.D.#1
Rock Stream, NY 14878

reprinted from HV99ers, Australia -

4 SPRITE PROGRAMS

=====

MERGE THAT PROGRAM!

=====

Without reproducing the entire article I would like to cover an article and discovery by Jack and BJ Mathis of the Southwest Ninety-Niners, of Tucson, Az.

While working on a program they started to get error messages where there were none only a short time before. They tried a backup Extended Basic Cartridge, even a backup 99/4A system, nothing seemed to work.

"I vaguely remembered something about the way the CPU stacks the programs in, by putting the last line number entered on top of the stack. The MERGE command reshuffles the program back into proper order. So, I saved the program in MERGE format, typed NEW, and MERGED the program back in. Then I RESequenced again. No more error codes. It also shortened the program file (less linkage?)."

I have tried this on a number of programs that I have written or worked on and it does seem to help. If the program lines are in order then the computer does not have to wait while it's finding the next line number, as is the case when lines have been added out of sequence. If you try this technique please report what your findings are.

From J. Larry Schott of the West Jax 99ers News, Orange Park, Fl. comes this very interesting demo of a sprite circle.

CALL LOCATE CIRCLE

```
>100 1985 J. LARRY SCHOTT
>200 ! CALL LOCATE CIRCLE
>210 CALL CLEAR :: CALL COLOR
(8,5,5):: FOR ROW=7 TO 19 ::
CALL HCHAR(ROW,10,95,13):: N
EXT ROW :: RADIUS=50
>220 FOR SP=1 TO 25 :: CALL S
PRITE(*SP,42,2,256,1):: NEXT
SP
>230 FOR A=0 TO 100 STEP 4 ::
S=A/100*(2*PI):: X=INT(SIN(
S)*RADIUS):: Y=INT(COS(S)*RA
DIUS)
>240 CALL LOCATE(*A/4+1,X+97,
Y+121):: NEXT A
>250 CALL DELSPRITE(ALL):: RA
DIUS=INT(RND*86+10):: GOTO 2
20
```



Explanation:

210 Initializes by drawing a square on the screen as a reference. Also sets the first pass radius.
 220 Creates 25 sprites and places them off screen bottom for now.
 230 Loop figures 25 points on circle.
 240 Places sprites on points of circle,

using CALL LOCATE.
 250 Erases circle, gets new radius size for variety, then loops back.

After you watch this for awhile, try this: delete the FOR/NEXT loop in 220 and change *SP to *1 there. Change *A/4+1 to *1 in line 240. When you run it like this, you have just one sprite flying around.

ARROWS

This is another demonstration of the almost unbelievable power and capabilities of 99/4A sprites in Extended Basic

```
1 !!!!!!!!!!!!!!!
2 ! BY DANNY COX !
3 !!!!!!!!!!!!!!!
4 !
5 CALL MAGNIFY(4):: CALL CLE
AR :: CALL SCREEN(2)
6 CALL CHAR(96,"FFFFFFFFFFFF
FFFFFFFFF7F3F1F0F07030180C0E0F0
F8FCFEFFFFFFFFFFFFFFFFFFFF")
7 FOR X=7 TO 4 STEP -1
8 R=190 :: C=250
9 FOR I=1 TO 25 :: CALL SPRI
TE(*I,96,RND*13+3,R,C):: R=R
-X :: C=C-7 :: NEXT I
10 R=190 :: C=250
11 FOR I=25 TO 1 STEP -1 ::
CALL SPRITE(*I,96,RND*13+3,R
,C):: R=R-X :: C=C-7 :: NEXT
I
12 NEXT X
13 FOR X=5 TO 7
14 R=190 :: C=250
15 FOR I=1 TO 25 :: CALL SPR
ITE(*I,96,RND*13+3,R,C):: R=
R-X :: C=C-7 :: NEXT I
16 R=190 :: C=250
17 FOR I=25 TO 1 STEP -1 ::
CALL SPRITE(*I,96,RND*13+3,R
,C):: R=R-X :: C=C-7 :: NEXT
I
18 NEXT X :: GOTO 7
```



BACKGROUND NIBBLING

from the Corpus Christi 99'ers

The following program is an excersize in doing things backward. I have seen too many rockets blasting off thru the top of my television. This one gives the illusion of movement by nibbling away the background

Notice the use of the RPT\$(*) statement, it's the only thing I could think of using it for!

You can write your own games around it. Run it then press any key to start the rise/fall effect.

Mac



```

100 CALL CLEAR :: CALL SCREE
N(2):: FOR I=1 TO 24 :: CALL
HCHAR(I,1,130,32):: NEXT I
:: CALL COLOR(13,13,13)
110 CALL CHAR(112,"010101030
3070707070F1F3F7FE7C3B300000
0B0B0C0C0C0C0E0F0F8FCCE8682"
)
120 CALL CHAR(116,"0103070F1
B13113F2B2B3B2D0705010080C
0E0E070B0B05070B0F0D0404000"
)
130 CALL MAGNIFY(3):: CALL S
PRITE(*1,112,15,100,120)
140 CALL KEY(O,K,S):: IF S(<)
1 THEN 140 ELSE CALL SPRITE(
*2,116,9,117,120)
150 CALL COLOR(9,2,13):: CAL
L CHAR(96,"",97,"FFFFFFFFFFFF
FFFF")
160 FOR I=1 TO 24 :: CALL CH
AR(96,A$):: CALL HCHAR(I,1,9
6,32):: FOR J=1 TO 8 :: CALL
CHAR(96,RPT$("FF",J)):: NEX
T J :: CALL HCHAR(I,1,97,32)
:: NEXT I
170 GOTO 170

```

SPRITE DEMO

The following program is an example of sprite animation using data statements and a loop to control the motion of the figures. The program is written in Extended Basic and originally came from the Home Computer Magazine. I rewrote the program to display the various stages of the figure in motion and added more figures and a roadway for them to cartwheel on.

```

100 ! *****
110 ! * SPRITE DEMO 2 *
120 ! *****
130 ! *99'ER VER 1.5.1XB*
140 ! * DEMO OF SPRITE *
150 ! * ANIMATION USING *
160 ! * DATA STATEMENTS *
170 ! * MODIFIED BY B PARR
180 ! * CC99'ERS 2/85 *
190 ! *****
200 CALL CLEAR
210 CALL CHAR(60,"FFFF000FF0
0F0FFF"):: CALL CHAR(65,"FFF
FFFFFFFFFFFFFF"):: CALL COLOR
(5,3,3):: CALL COLOR(4,2,11)
220 CALL CHAR(55,"8046042528
700210"):: CALL COLOR(3,16,1
5)
230 DIM I$(17),C$(17)
240 GOSUB 360 !CASTER
250 FOR I=0 TO N :: CALL CHA
R(136-4*I,C$(I))
260 NEXT I
270 CALL SPRITE(#5,136,2,80,
10,#6,132,2,80,40,#7,128,2,8
0,70,#8,124,2,80,100,#9,120,
2,120,10)

```

```

280 CALL SPRITE(#10,116,2,12
0,40,#11,112,2,120,70,#12,10
8,2,120,100,#13,108,2,160,10
,#14,104,2,160,40)
290 CALL SPRITE(#15,100,2,16
0,70,#16,96,2,160,100)
300 CALL CLEAR
310 CALL HCHAR(9,1,60,32)::
CALL HCHAR(10,1,65,480):: CA
LL HCHAR(7,1,55,64)
320 CALL SPRITE(#1,136,2,34,
30,0,-6,#2,136,7,34,60,0,-6,
#3,136,13,30,90,0,-8,#4,136,
5,26,120,0,-20)
330 CALL MAGNIFY(4)
340 FOR I=0 TO N :: CALL PAT
TERN(#1,136-4*I,#2,136-4*I,#
3,136-4*I,#4,136-4*I):: GOSU
B 410 :: NEXT I :: GOTO 340
350 END
360 REM SUBROUTINE CASTER
370 READ NAM$,N
380 FOR I=0 TO N
390 READ I$(I),C$(I):: NEXT
I
400 RETURN
410 REM SUBROUTINE DELAY
420 FOR J=0 TO 6 :: NEXT J
430 RETURN

```

WEEKEND QUICKIE

by Ed Lee

This little quickie comes from The CompuServe TI-Forum. Ron Albright a sysop on the TI-Forum and author of the ORPHAN CHRONICLES put it up on the BBS for all to have.

Ron's description is "it emulates the microscopic appearance of some notorious spirochetes".

```

100 ! *****
110 ! *ORGANISMS*
120 ! *****
130 ! By: Ed Lee
140 ! 1985
150 !
160 X=11 :: CALL SCREEN(2)::
DISPLAY ERASE ALL :: CALL C
HAR(33,"1"):: FOR I=1 TO 28
:: CALL SPRITE(*I,33,X,96,12
8):: NEXT I
170 FOR I=4 TO 28 STEP 4 ::
X=(RND*5+1)*SGN(RND-.5):: Y=
(RND*5+1)*SGN(RND-.5):: FOR
J=I-3 TO I :: CALL MOTION(*J
,X,Y):: NEXT J :: NEXT I
180 GOTO 170

```



SMILE



```

440 DATA MAN#N81,12
450 DATA MAN#1,00060909060F0
F0F1E060F0F19080408000000000
000000000002050800000000
460 DATA MAN#2,0304040307072
F130303070606020700008080008
090D0A080B0808080808000
470 DATA MAN#2.5,00070903060
F0F172F0606060F0908180000000
000000000000000000804080
480 DATA MAN#3,00070903060F0
F172F0606060F090818000000000
000000000000000000804080
490 DATA MAN#4,000018241C0C1
C2C4E16060706020206000000000
000000000040A0000000000000
500 DATA MAN#5,00000000000000
0387FDE966242810001000000000
0002050800000000000008000
510 DATA MAN#6,00061424140C0
C0C0C1C1E1E1E1D0C10000000000
00000000000000000008080
520 DATA MAN#6.5,00000020201
84C7C0C0C0E0606090E040000000
0000000000000000000008080
530 DATA MAN#7,00000000000000
04080402F1E376640C0000000000
000000040800000000804020
540 DATA MAN#8,000000110A060
30101010303062A1206000000844
850A0C0C080800000000000000
550 DATA MAN#1,00060909060F0
F0F1E060F0F19080408000000000
000000000002050800000000
560 DATA MAN#3,00070903060F0
F172F0606060F090818000000000
000000000000000000804080
570 DATA MAN#2.5,00070903060
F0F172F0606060F0908180000000
000000000000000000804080

```


SEPTEMBER 1987 /// IN OUR NEW CLUBHOUSE!

MUNCH OFFICERS AND NUMBERS (all in 617 area)

President	W.C. Wyman	839-4134
Vice President	Hector Beaudreau	
Secretary	Al Cecchini	
Treasurer	Jim Cox	869-2704
Editor/Lugger	Jack Sughrue	476-7630
Adv Prog. Chair	Dan Rogers	248-5502
Club Reviewer	Count Dracula	
Library	Al Lisa Cecchini	
Software Library	Don Mason	754-6630
	Hector Beaudreau	
Mail + Messages	Wm. Corson Wyman	
Mandacity Chair	Richard M. Nixon	

LIBRARY NOTICE

PLEASE RETURN ANY ITEMS BORROWED FROM OUR LIBRARY. We are still missing a considerable number of books, tapes, disks, and so on belonging to YOUR CLUB. Do a little clearing around your computer area (or any places you'd be apt to set things aside). If you locate any library materials (or if you'd like to donate any you no longer use) please come with them to the next meeting. We don't care how long you've had them out. There is no fine. But it would be fine if other members could have a chance to borrow these things.

ADVERTISING RATES:

Double Page	(10.5" by 8")	\$25.00 per insertion
Full Page	(5" by 8")	\$13.00 per insertion
Half Page	(5" by 4")	\$ 7.00 per insertion
Quarter Page	(5" by 2" or (2.5" by 4")	\$ 5.00 per insertion

Classified (non-commercial) ads are FREE for MUNCH members.

....RAFFLE....

Our raffles are still our steady moneymaker. In August we raffled off a bunch of donated gifts and, thanks to the generosity of the members, we will have even more in September. Remember our big raffle will be at the Open House at Sunderland in Oct. Donations happily accepted. Remember: YOU MUST BE PRESENT TO WIN!

SEPTEMBER SALE!

Your big chance to sell any used consoles, P/Boxes, cards, tape recorders, interface cables, ANYTHING related to your computer system. Also bring any original tapes, cartridges, disks, texts, or other soft/textware. Be prepared to buy a lot and sell a lot. Please come with prices marked on the items. Call Jack Sughrue to let him know what you will be selling. AND get set for the October BIGGIE!

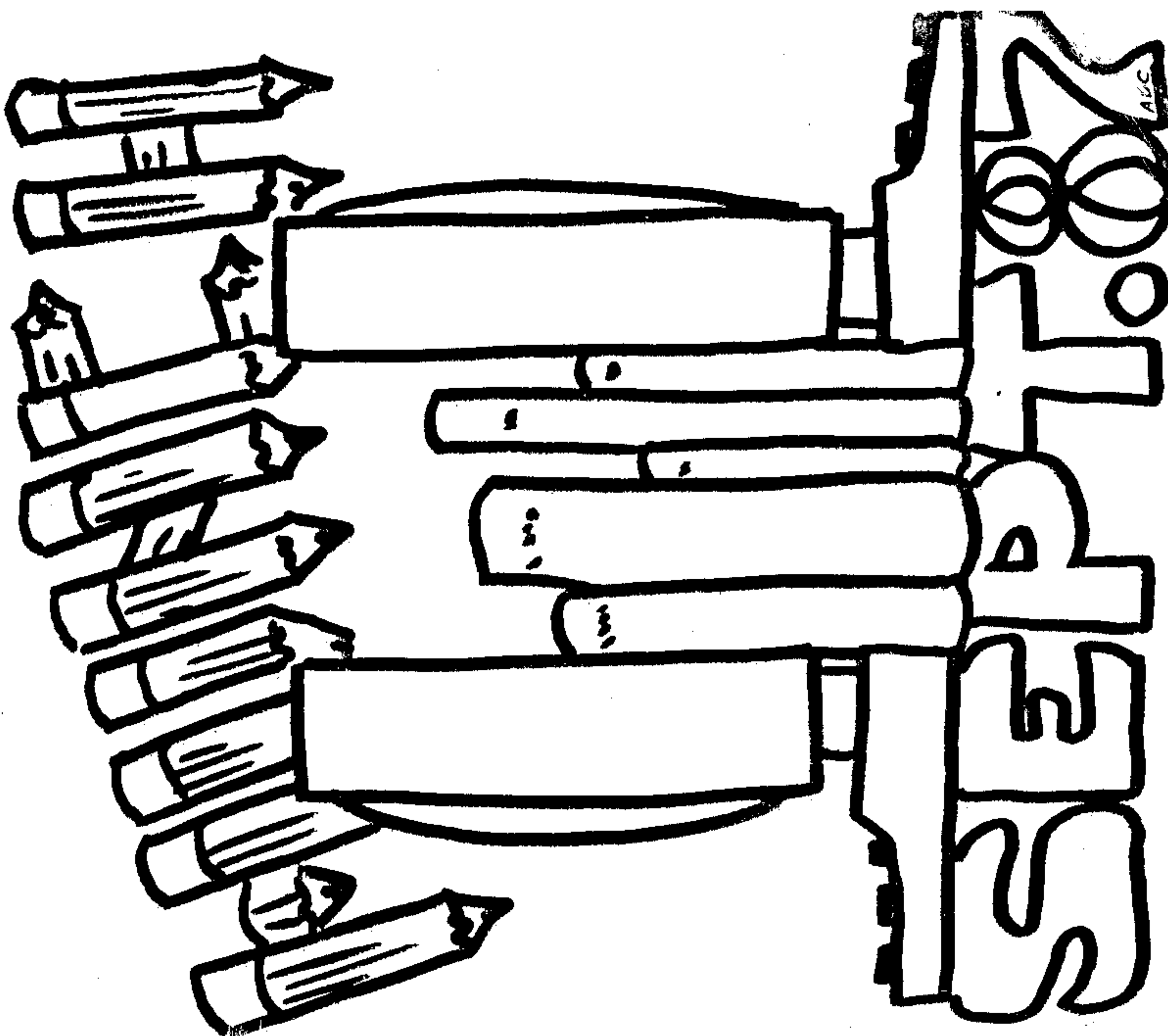
NEWSLETTER

Become immortal! We are looking for articles, cartoons, love letters, programs, lists, bubble-gum wrappers: in short, anything from the members which can be printed in our newsletter. Text items preferred on SS80 disk through TIW. Printed items also accepted. Share your interest or expertise with other members. Mail all items by the 3rd Tuesday of each month to Jack Sughrue, Box 459, E. Douglas MA 01516. Disks will be returned at the next meeting.

NEWALS + RENEWALS

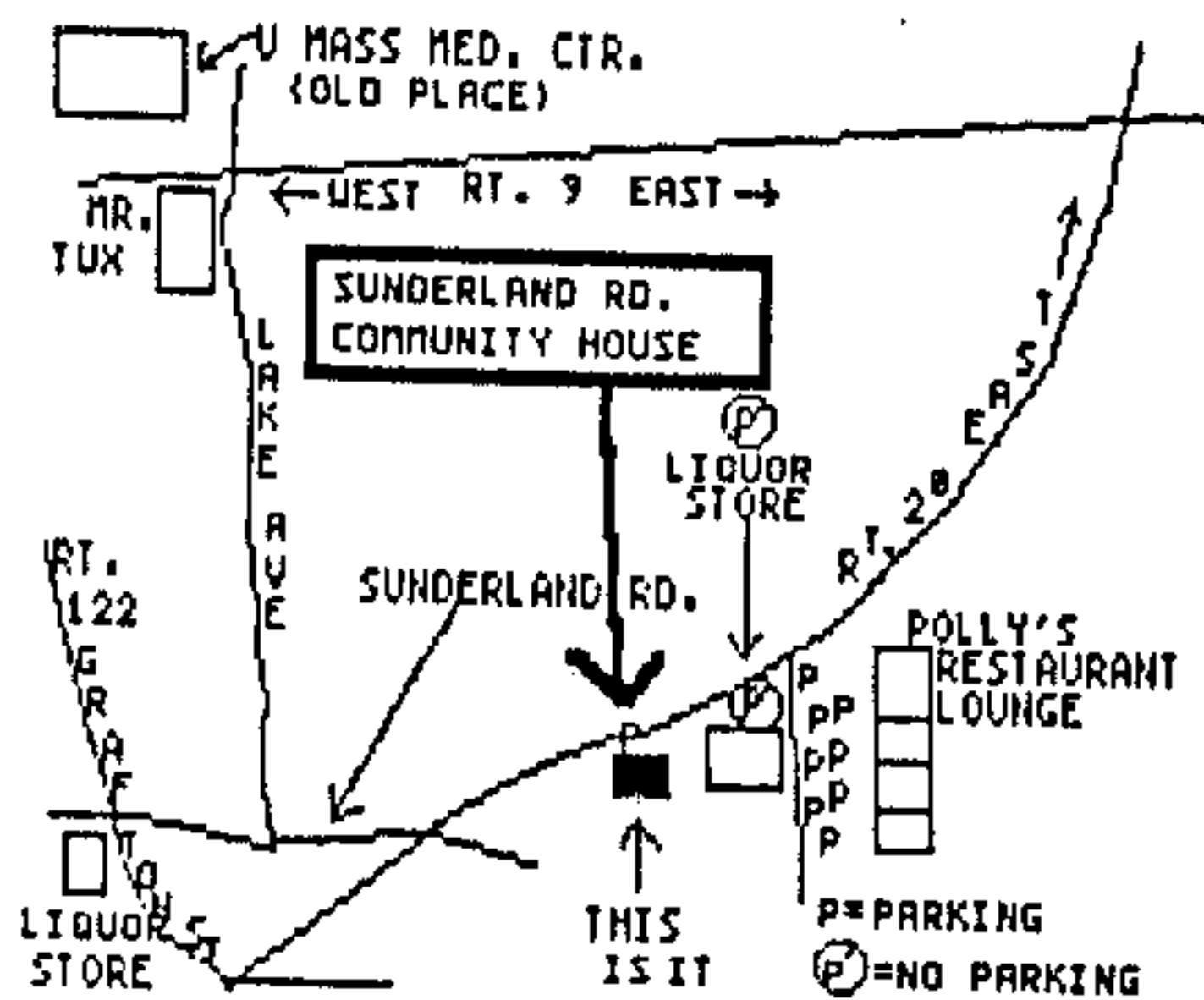
NEWALS are \$15/year plus a one-time \$10 initiation fee (which includes a choice of ANY club disk free); RENEWALS are \$15/year. Members have full use of disk/text libraries, free workshops + assistance, 12 full issues of M.U.N.C.H., voting privileges + more! Subscription alone is \$10/year. Mail check to address on cover.

```
SEPTMBER 1987 Monthly Newsletter Version 6.9
```



M.U.N.C.H.
P.O. Box 7193
560 LINCOLN STREET
WORCESTER, MA. 01605

FIRST CLASS



NEW LOCATION
SUNDERLAND RD
COMMUNITY CTR
ROUTE 20