The Amateur Computerist

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Letter Published in *Radio-Electronics*

(The following letter appeared in the September, 1988 issue of *Radio-Electronics* magazine. Responses from all over the country follow.)

In May 1966, Stephen B. Gray formed the Amateur Computer Society for people who were interested in building their own computers. By sharing their experiences and problems, Gray believed that hobbyists could reduce the frustration and isolation of working on their own to build a computer. Ned Wadsworth's Scelbi-8H, Jonathan Titus' Mark-8, and Ed Roberts' Altair 8800 were the practical results of many years of effort to develop a personal computer.

While personal computers are now readily available, there is an

increasing emphasis on business uses and software appropriate for businesses. There is a need for support and exchange among non-business users. To that end, we are announcing the publication of the first *Amateur Computerist* newsletter, named in honor of Stephen Gray's pioneering interchange.

We want to encourage amateur computer users to write and share what they are doing with their computers – their successes and achievements, and their problems. We will try to support and encourage amateur use of computers, and to facilitate communication between users.

We recognize the important role *Radio-Electronics* has played in the history of the personal computer, by publishing Jonathan Titus' Mark-8 in July 1974. (Editor's Note: H. Edward Roberts, M.D., author of the *Radio-Electronics* "Advanced Control System" series, is the same Ed Roberts of Altair 8800 fame.) We're sure that many *Radio-Electronics* readers will be interested in the *Amateur Computerist* newsletter, and we hope they will write to us giving details of how they are using their computers; what uses they are most proud of, which programs are most useful, problems they encountered, and programs they've created.

<div align="right">Ronda Hauben</div>

RESPONSES FROM AROUND THE COUNTRY

Please send more info your newsletter per letters column *Radio-Electronics* Sept issue.

I was one of original members Gray's Society and stayed to the end. Wish I had saved all issues and many of crazy things I put together.

<div align="right">W. E. Young Jr.
Phoenix, AZ</div>

Being a Coco owner for several years I have learned the very limited software and other coverage given to it by magazines (such as *Radio-Electronics*, et al.).

On the other hand, the *Amateur Computerist* letter written in the September 1988 issue sounds very interesting. It sounds like something my speed. Therefore, please send details.

Scott McMahan
Asheville, NC

Read your piece in *Radio-Electronics* and you can count me in as a member. Please send the details and cost of the newsletter and I will remit. It is about time something such as this got started. I have a number of fine ideas, however I do not have the technical know how to bring them off. Perhaps through this organization I can realize a completion of same.

For the records I have the following equipment: AT&T 6300, Plus Development 20 mg hard card, 2 floppy 5.25 drives, AT&T color monitor, Citoh 8510 printer, Sysdyne modem, 3.1 MS/DOS, 640 KB RAM. The other equipment is a S-100 bus system: Seattle Computer 8086 with 256 KB static RAM, 22 slot motherboard, 2 Qume 8" drives, Televideo monitor, and an Anadex printer (this computer I bought around 1980 and shows how long static RAM has been around).

Very truly yours,
R. S. Nieto
Metairie, LA

I've enjoyed the letter you wrote in the August issue of *Radio-Electronics*. I found the letter to be informative and inspirational. I'm writing in regards to submitting information in using the computer as a control device/engineering tool. I would like to know how I can receive your newsletter as well as submit information to your newsletter on the above items mentioned.

If you have any information on article submission, it will be greatly appreciated.

Thank You
Donald Wilcher

Oak Park, MI
(Editor's comment: We need all the inspiration we can get!)

———————

I was very interested when I saw your letter in the September 1988 issue of *Radio-Electronics*. I've been involved in electronics as a hobby for the past ten years with computers being one of my two areas of interest. I started working on a design for a computer, but the project came to a halt when I was able to buy one. However, recently I regained interest. And the computer I now own (a CoCo 3) is becoming a bore since technical information is scarce on it. Plus, it would be much more enjoyable to use a system I built from the ground up and know inside and out. My main interest in computers is for scientific use and experimentation. And when I read the newsletter was for non-business users, I was excited. At the moment, one main limitation I have is programming in machine language. I understand it, but putting it to work is still a challenge.

One area in computers that I would like to explore is parallel processing or super-computers. I do not have much information in this area, but it could be a new and exciting frontier. I would especially like to share information with anyone else interested in this area. Again, thank you for your attention.

Steve Bouton
Cairo, GA
(Editor's comment: We would like to invite someone to submit a series of articles helping readers to use machine language.)

———————

I would be interested in receiving your *Amateur Computerist* news-letter as described in *Radio-Electronics.* I had a home brew computer running in 1977 on the bare boards sold by Ohio Scientific. That computer is still operating, but all the people I used to correspond with have moved to newer machines. I also have a PC clone, but still love the old 6502 machine since I personally soldered every joint in the beast.

Earl Morris
Midland, MI

————

I read your letter in the Sept. '88 issue of *Radio-Electronics,* and I wonder if you or your readers can help me. You see, I own and operate a small electronics repair shop, and business is steadily increasing. That's good. The paper work is also increasing. That's Bad.

I've been following Peter Stark's series in *Radio-Electronics* on building a computer. I'm seriously considering building it for my business and other personal applications. There's only one little problem. I know Absolutely Nothing about the use or operation of any computer. There must be someone, somewhere that can help.

Mr. Stark's computer is the PT-68K2. The CPU is a Motorola MC68000. It runs on SK-DOS. Is there a textbook or software that will run on this system, and teach me how to use this computer? Any help will be greatly appreciated.

Thank You!
Paul Nowack
Buffalo, Minn

(Editor response: It might be a good idea to try to write to Peter Stark and ask him for information on using his computer. It's helpful to begin using some computer, to begin to see what uses you can make of it. It has been particularly helpful for some of us to learn a little programming in a computer language like BASIC. (see series on programming in C and BASIC in second issue.) to be able to see what kind of use you can make of a computer. I've found that I can make up simple programs to do mailings, keep records, etc. Also, though word processing programs are very helpful. It may be you would want to buy a computer like an IBM compatible to begin to see what uses you may have for one.)

————

I was very happy to read your letter in the September *Radio-Electronics* magazine. As one who is allergic to business and fascinated by theoretical physics, mathematics, and signal processing/analysis, I would be delighted to receive a newsletter that doesn't hide the juicy tidbits among a deluge of ads and reviews of products that do not interest me. Unlike, say, *Byte* magazine which has occasional articles of interest to me, but is so fat with ads for fancy spreadsheets and laptops

for traveling salesmen, blah. I usually tear out the good four or five pages and throw the rest away.

My interests are varied and wide-ranging, but within computing include digging into machine code, large-scale calculations (typically of quantum-mechanical models) and fiddling with educational graphics programs. I would like to design colorful, fun programs that teach the main ideas of quantum theory. How about a video game based on particle-hole excitations of atomic nuclei? But partly out of laziness, and partly out of being busy with other things, I haven't really gotten anywhere with that.

Another project, that I have gotten somewhat further with is an audio signal analyzer, based on a multi-Z80 system I'm pretending to design, which would, if only I would get around to it, produce a real-time spectrum of any audio signal fed into it. Not original, but I find it educational and exciting to do as a hobby.

I once toyed with the idea of building a stereoscopic 3-D display from an old oscilloscope and a homemade Z80 system, but that never got off the ground. I was very, very busy with graduate school at the time.

Besides these fun hobbies, I also use computers professionally. Currently I am writing software at the Henry Ford Hospital for displaying 3-D CAT scan images. Last year, I was at the Stanford Linear Accelerator Center helping them calibrate and test their beam position monitors, so that the U.S. will remain the leader in high energy particle physics. Not exactly a common hobby!

So, you see, I've done and plan to do all sorts of scientific and mathematical projects with computers, and that includes building my own homebrew systems. I will have to save for later more detailed descriptions of my projects and the problems I'm having (mostly a lack of time or space), but I certainly want to be on your mailing list!

<div align="right">

Daren S. Wilson
Union Lake, MI

</div>

(Editor's note: More responses will appear in the next issue. Keep your letters and articles coming.)

Editorial
Upcoming Election & Computers

Elsewhere in this issue is a letter to the editor that was printed in the September issue of *Radio-Electronics* and a few of the many letters and inquiries received in response to it. The stream of letters from all over the country inquiring about The *Amateur Computerist* shows that the amateur technology movement which gave birth to the personal computer by 1974 is still very much alive in the U.S.

The personal computer represents a tremendous technological leap. In the next issue we begin serializing a history of computers showing how the personal computer is the product of at least 400 years of effort by many people to create a computer. And many feel the computer will bring a new industrial revolution much more significant than that of the 1800's.

But what is actually happening? The automotive industry utilizes some of the most advanced technology in a given country. The connection of computers with machinery on the shop floor represents a significant necessary technological leap. But that connection seems stymied in the U.S. at the current moment. Why?

U.S. companies traditionally are reluctant to invest capital in new technology. But in 1976-9 the UAW won a reduction in the workweek in their contracts, in the form of paid personal days. This provided the stimulus for auto companies to invest over $80 billion in new machinery by the end of 1983*, and was a step forward for U.S. industry. Now companies have again extended working hours.

Productivity is a word being bandied about a lot these days. Productivity refers to the efficiency of the productive process, the quantity of output produced per employee-hour of expended labor. The highest productivity is achieved when a commodity is produced with the least labor possible. That requires the most modern machinery, tools, equipment, etc. If a factory with older machinery requires 40 employee-hours of labor to assemble an automobile, a modern "state-of-the-art"

factory can assemble a car using only 29 hours labor time. This second factory represents increased productivity.** No matter how efficient the workers are in the first factory, the productivity of that factory will lag the productivity of the newer one.

But the auto companies are reluctant to put advanced technology into their factories because that requires capital investment. Alfred Sloan Jr., President of GM in the 1930's (workers at GM nicknamed him 'Papa' Sloan), gave a speech to the Economic Club of Detroit in 1943. In that speech he explained that U.S. management must be cautious about putting stockholder capital into new technology. Instead he proposed improving the efficiency of management's ability to get more labor out of people. To do this he proposed management research into diverse methods of wage distribution, labor relations and personnel psychology.

The result is that U.S. industry is now a flood with "partnership," "labor-management cooperation," "training," "human resource development," etc. Also, instead of wage increases, workers are faced with "two-tier wage scales," "profit sharing," "bonuses," etc. But all of these are efforts to lower wages and get workers to do more intense work for longer hours.

When the same program of bonuses (called "the Scanlon Plan" or "the My Jobs Contest," etc.) was attempted after WW II, the economy was sent into a tailspin. The lower the wages of workers and the longer the hours they worked, the less incentive there was for a corporation to part with its "profits" and invest in new technology. Productive capacity contracted and shortages developed, further constricting capacity.

By 1947, factories in Flint, Detroit, etc. were forced to shut down for a day at a time because there was a fuel oil shortage. GM had to restrict production of cars because it couldn't get enough steel, as steel capacity had been cut back. Prices of scarce goods were fueling inflation. The result was that both the U.S. Congress and the Michigan legislature tried to fashion anti-inflation legislation. Newspaper reporters tried to figure out the cause of the shortages, etc. Thus, 'Papa' Sloan's program demonstrated it could only worsen economic conditions.

UAW workers in Flint, however, solved the problem. They went on the radio, put out a press release, wrote articles in their local trade union

newspapers, etc. calling for a Cost of Living Escalator Clause (COLA) in their upcoming contract. Officials of the UAW International Union opposed them, accusing the Flint workers of anti-union activity. And GM management was opposed to the COLA, as well. But the Flint auto workers prevailed. COLA and the Annual Improvement Factor (an annual percentage wage increase, e.g. of 3% called the AIF) were introduced into the GM-UAW contract in May 1948. That meant GM was required to maintain a level of wages that provided a continual inducement for it to invest in new technology. And based on that gain, other labor management rules were established like arbitration procedures, bidding rights, etc. These rules provided GM and auto workers with a firm foundation for technological development.

Workers, during the 1940's, had access to their trade union newspapers where they could print their criticism of management and of 'apple polishing' workers. These comments were printed in a section called "Shop News," etc. Thus, there was pressure on GM "to clean up its act," so to speak, and for management and union leaders to correct glaring abuses.

What does all this have to do with the personal computer and the elections? Instead of any debate over technology and the computer, all we hear from both the Republican and the Democratic Parties is that management has to have a free hand to "be more competitive," i.e. to cut back worker wages and restrict worker rights. This, we are being told, will provide "Jobs." We are hearing the program Sloan presented to the Economic Club of Detroit for "Postwar Jobs" in 1943, as the panacea for today. But "Jobs" at low wages, with long hours, and under conditions of psychological manipulation, not only harm workers, but also are a disincentive for technological investment. Thus, we hear that it's no longer a question of productivity, meaning new technology, but of "individual productivity," meaning speed-up.

Also, tariff legislation is being promoted to keep prices artificially high, and to cut back on the supply of needed new technology like computer chips. And in general, computer education and computer technology are to be only at the initiative of big corporations; and kept out of the hands of amateurs and workers.

But this is not a way to develop technology, not a way to solve the

problems of using computers on the shop floor. We need a debate over the current dilemmas facing our society, not censorship and restriction of the voice of workers or of amateurs and hobbyists. It is not the "workerless factory" (GM President Roger Smith's dream) or the "workerless State" (Michigan Governor James Blanchard's dream) that will solve the problems of technological advancement. Computers need people who can operate them and, more importantly, people who can program them and thus understand their limitations and strengths, and debug their mistakes. The development of computer technology cannot be left in the hands of management alone. It needs to be in the hands of workers, of amateurs, of hobbyists. That means there needs to be discussion, debate and education on all issues concerning technology, and discussion and debate which welcomes the voice of workers, small business people, farmers, amateur computerists, hobbyists, etc. To this end the *Amateur Computerist* is dedicated.

(*See E.E. Wise "New Technology & Labor-Management Relations at Ford Motor Co.," *Labor Law Journal*, Aug. 1985, p. 574.)
(** See Albert Lee, *Call Me Roger*, N.Y., 1988, p. 239.)

SAVIOR IN WAITING
(The Computer – A Human Extension)

by Floyd Hoke-Miller

The Big Machine
The Big Brave Brain
Standing side by side
In stony silence,
Lifeless,
Soulless,
Loveless;
There in a positive
Slave-like stature,
Waiting to be fed
Something they
Can never have,
Nor ever had,
Intuition,
Food,
By the hand of the human
Who created them,
Inspiration
For action!
Waiting the human touch
Of manipulation,
Of programming,
To act upon
That they might
Perform the duty
That becomes
Their presence
Of being.
They are both one,
The extension
Of human capacitation

(from *The Searchlight*, 6/12/87)

How to Use the Merit Network?

by Michael Hauben

(Editor's note: This article was written to tell Detroit area residents how to call Ann Arbor BBS's without having to pay a zone charge. For computer users outside of the Detroit area, they can use PC Pursuit to call Detroit to connect to the MERIT network.)

Introduction

Would you like to be able to call Ann Arbor and the surrounding area, while only being charged for a local call? If so, I have the solution! If you like to call in and around Ann Arbor then this will save you money! (There is one catch though. You will only be able to call Ann Arbor locally if you will be using your computer to connect to another computer.)

Overview of Steps

To start off you have to load a telecommunications program into your computer. Next you call a Merit number that is local to you. Once you are on Merit, you connect to the dial-out modems. Finally you can dial the number you want by using the AT command set.

Materials Required

A computer, modem, telecommunications software, a phone line, and a number for dialing a modem local to you for Merit.

Cautions

Sometimes the dial-out modems don't work! So don't get frustrated!

Definition of Terms

Modem – An acronym for MOdulate-DEModulate. This is a device which lets computers communicate over phone lines.

Merit – A network of the educational computers in Michigan.

Telecommunications program – A program which runs on your computer which lets you use the phone lines to connect to another computer.

Network – The linking up of computers.

Dial-out modems – These are modems which when you connect to them, let you use them to dial out of the network.

Step One: Setting UP

A. Boot your computer with your system disk.

B. Turn your modem on and check to see if it's connected to your computer and phone line.

C. Run your telecommunications program.

Step Two: Connecting

A. Call your local Merit number, with your telecommunications program set at 300 or 1200 baud (there are a few 2400 baud numbers), 7 data bits, even parity, 1 stop bit (7, E, 1) and full duplex.

B. At the "%Terminal=" prompt, either press return or enter your terminal (emulation) type.

C. At the "Which host?" prompt, type "DIALOUT-AA" to connect to the dialout modems.

D. Hit return two or more times.

Step Three: Dialing

A. After "Ok," type "ATSMCSLCC0D9 ###-####"; (###-#### is the phone number.) If the number is busy, or if it doesn't answer, then type "D" or "R" and return to redial until you're connected!

Step Four: Quitting

A. Send a <BREAK> character.

B. Type "%QUIT."

C. At the "Which host?" prompt type "Q" to disconnect from Merit.

D. Exit your telecommunications program.

E. Shut your computer and modem off.

Telephone numbers to dial MERIT:

300/1200 (313)593-5059,(313)577-0335 2400 (313)577-0321

Some BBS's you can call using MERIT:

M-Net 994-6333
  300/1200/2400 baud
Beyond Reality 995-0754
  300/1200/2400 baud
Kite-Net 663-6201
  300/1200 baud
DMD HQ 420-4624
  300/1200/2400 baud

Other services available from MERIT are connections into CompuServe, The Source, PC-MAGNET (*PC Magazine's* new electronic service) and the NSFSCN (National Science Foundation SuperComputer Network).

VIRTUAL DRIVES & BATCH FILES
Using DOS 3.x

WHAT IS A VIRTUAL DRIVE?

It is a simulated disk drive in RAM. Virtual drives (or VDISKS) are very fast, but they use up memory, and all the information on the VDISK is lost on 'shut-down' or reboot. It is necessary to move any files generated and saved on the VDISK to a floppy or hard disk before 'shut-down' or reset. VDISKs are especially good for running overlays or programs that are disk drive interactive. They are also very good for storing frequently used programs and batch files to be used during a work session. This article assumes no hard disk is being used.

THE VDISK.SYS COMMAND

(Ed. Note: In DOS 3.3 VDISK.SYS is called RAMDRIVE.SYS. Check your manual to see the syntax for RAMDRIVE.SYS)

The format for the VDISK command is:

DEVICE=[d:][path] VDISK.SYS [bbb] [sss] [ddd] [/E[:m]]

where d = drive; path = directory path where VDISK.SYS is located; bbb = the desired storage capacity (in KB) of the virtual disk (default is

64); sss = sector size in bytes (default is 128, larger sizes 256 & 512 are faster but memory is used); ddd = max. no. of directory entries (default is 64, but can use 2 to 512, one is used for the virtual disk label); /E:m = for use with extended memory.

HOW TO CREATE A VIRTUAL DRIVE
Create a CONFIG.SYS file like the following:

<p align="center">CONFIG.SYS</p>

```
device = VDISK.SYS 128 128 16
buffers = 10
files  = 20
```

Line 1 – creates a virtual drive of 128 KB with 128 byte sector size and a capability to handle 16 files.
Line 2 – the number of buffers at 10 is for a PC XT with no hard drive - use 20 if a hard drive is part of your system.
Line 3 – 20 files can be opened at once (default is 8).

CREATE A BOOT DISK
Format a blank disk with the /S (to copy system files) and the /V (to create a volume name) option. Name the disk as you see fit, mine is VDISK_128_K. Copy the following:

```
COMMAND.COM
CONFIG.SYS (one created above)
PRINT.COM (an example only)
AUTOEXEC.BAT (see below)
VDISK.SYS (from your DOS disk)
```

CREATE AN AUTOEXEC.BAT
Make an AUTOEXEC.BAT file that contains the commands that follow:

<p align="center">AUTOEXEC.BAT</p>

```
echo off
copy print.com c:
path c:\;a:;b:
prompt $p$_yes, Master $
```

```
cls
```

CREDITS

Reference book: *The Power of PC/DOS* by Seichert & Wood. It works on my unit with two 360 floppies and PC/DOS 3.1 (no hard drive).

TRY THIS

(BASICA or GW-BASIC program for IBM)

```
5 CLS: KEY OFF
10 PRINT "This is an example of the equation of a straight
line"
15 PRINT
16 PRINT TAB(15);"Y = .5X - 20"
17 PRINT
20 INPUT "Do you want to see a table of values or a graph
(G/T)";A$
30 IF A$="t" OR A$="T" THEN A=1
40 IF A$="g" OR A$="G" THEN A=2
50 ON A GOTO 100, 200
100 CLS
110 PRINT TAB(5);"X";TAB(10);"Y"
120 FOR X = 1 TO 22
130 PRINT TAB(4);X;TAB(8);.5 * X -20
140 NEXT X
150 INPUT "Do you want to see a graph (Y/N)";B$
160 IF B$<>"y" OR B$<>"Y" THEN END
200 SCREEN 2
210 LINE (0,0) - (0,199)
215 LINE (0,100) - (639,100)
220 FOR X = 0 TO 639
230 Y = .5 * X - 20
240 PSET (X,100-Y)
250 NEXT X
```

Here is an Apple version:

```
5 HOME
```

```
10 PRINT "This is an example of the equation of a straight
line"
15 PRINT
16 PRINT TAB(15);"Y = .5X - 20"
20 PRINT
30 INPUT "Do you want to see a table of values or a graph
(T/G)?";A$
30 IF A$="t" OR A$="T" THEN A=1
40 IF A$="g" OR A$="G" THEN A=2
50 ON A GOTO 100, 200
100 HOME
110 PRINT TAB(5);"X";tab(10);"y"
120 FOR X=1 TO 22
130 PRINT TAB(4);X;TAB(8);.5*X-20
140 NEXT X
150 INPUT "Do you want to see a graph (Y/N)?";B$
160 IF B$<>"y" OR B$<>"Y" THEN END
200 HGR : HCOLOR = 3
210 HPLOT 0,0 TO 0,159
215 HPLOT 0,80 TO 279,80
220 FOR X = 0 TO 279
230 Y = .5 * X - 20
240 HPLOT X,80 - Y
250 NEXT X
```

AS I WAS SAYING...

by Floyd Hoke-Miller

Quite often today, I hear workers say, "Why computerism? Will the coming of computers and robots be for us a blessing or a horror?" I can understand the question. With all the new machinery and modern technology continually introduced at the work place, we are still working the same hour-quotient that our grandfathers and great-grandfathers first established in 1916. That's when railroad workers won eight hours as their regular work day. We were not able, as industrial workers, to wrest that concession (or perhaps it should be said that rightful grant), until the historical and momentous seizure of 'Chevy Plant Four' by our group of mixed classifications, auto workers all. We

were the human element in production and were done being treated as 'hired, fired, fixed, and foiled factory fixtures.' Our Sit-Down Strike success set off a wave of sit-downs that ended our treatment entirely by whim and eventually established eight hours as the standard work day for all American labor. Since eight or even ten hours per day is still standard today, can't we ask what good has been done for us by all the advances in machinery and technology since WW II?

The question is well and propitiously posited and should be repeated more often. The answer must be sought in the remedy of more equal justice and a wider spread of the 'good things of life' that the new 'Hi-Tech' leverage can bring to human kind. It is indeed time and over time that, to the "gentleman's agreement" of 1937, a supplement be added that guarantees to labor it's share of the gain via a shorter work day and a "pass the profits please" organized labor-management treaty.

What is computerism? It began in the "Beginning." We came into the sphere known as life with the questions of why and how. To make life successful and better, work had to be done. The more machines and inventions could do that work the better it could be for all. But not just machines to do muscle work. Why not machines to do mental work? But there is still the problem today. After all these years of the Industrial Revolution, and with us now at the beginning of the Cybernetic Revolution, we must revert to the cry credited to Pilate, "What is the Truth?" Will we ever benefit from any progress? That will come but it will take the solidarity of a 'one for all and all for one' type of organized effort by the working class as a whole.

Whither computerism? That is a quandary that deserves more attention than it has been getting. Will the direction be governed by commercialism, understood in the light of the profit motive and individual advancement; or by amateurism, viewed as a labor of love? Computerism really should, by all sense of logic, be in the same realm that such basics as Truth, Love and Justice should be. They all belong intrinsically to the Public Domain.

So far the "big machine" has often meant, for workers, big trouble. Now the "big brain," what will it mean for Us? To quote Isaiah, an ancient Jewish sage, "come let us reason together" so that the cybernetic future will not be our enemy. We must take steps now. In other words,

let us use our heads in addition to our hands, working and studying one with another, such that a suitable answer can be found in a democratic fashion.

We must remember that, by itself, advancement in our present society has a concentrating effect on the minority of humanity. That is our challenge, for us to share in the future, or even to shape the future for ourselves. It is a blessing, 'Hi-Tech' progress, but we will only benefit from it if we shorten the hours required daily of our labor. The boss is not our buddy. We must force this from him. To work, then, my friends. Let us fan the frail, flickering flame into a forest fire for the future.

COMPUTERS AND FREE SPEECH

by Michael Hauben

Should there be unlimited freedom of speech? Should the Supreme Court or any other federal court have the right to censor? Does EVERY-BODY have freedom of speech? These are some of the questions based on freedom of speech. When Hitler came to power in Germany, he limited freedom of speech by ending constitutional law. When the Chairman of the opposing party made a passionate plea, Hitler said, "Late you come, but still you come...during the time we were in the opposition...in those days our press was forbidden and forbidden and again forbidden, our meetings were forbidden and we were forbidden to speak, and I was forbidden to speak, for years on end. And now you say: criticism is salutary!"[1]

For our society, freedom of speech is part of the Bill of Rights of our Constitution. Many of the states that ratified the Constitution did so with an understanding that a Bill of Rights restricting the power of the federal government would be adopted. Patrick Henry was one of the many to demand the Bill of Rights. He argued successfully for the Bill. The different freedoms, including freedom of speech, protected by the Bill of Rights have been and still will be defined through various cases

brought up in federal courts.

The concept of freedom of speech has a long history. It expanded to speech on paper in the 15th Century when Johannes Gutenberg invented moveable type in Europe. Books that were cheap and common replaced the valuable, rare manuscripts immediately after the press was introduced. Information could now be delivered to all who could read, instead of only to those within earshot of a speaker. In England, the governing body thought the power of the printing press dangerous enough to assign a censor. That censorship was shut down by Parliament and then reinstalled after a flood of licentious and seditious literature came out of the mighty presses. Many of these new uncensored books were politically or theologically based.

John Milton, a 36 year old poet and a classical scholar of known reputation, published on his own and without a license in the 17th Century, an answer to the Parliament's censoring of printed materials. He called it Areopagitica. In it he says "First, the decision of a censor cannot be trusted unless the censor is infallible and beyond corruption. No mortal possesses such grace; therefore no mortal is qualified to be a censor. Second, since anything may tend to evil if misused, an effective system of censorship will end up suppressing everything even music, dancing, windows, balconies, eating, drinking, clothes and 'the mix conversation of our youth, male and female together.' Third, if a scheme for issuing licenses be instituted, what does one do with books already printed and in circulation? Fourth, the job of censor is so dull and unsatisfactory that no able person will want it."[2]

In the five parts of Milton's text, he talks about the types of people for whom he is writing this book. The main type, the humanist, is devoted to the debate and the discussion of things like freedom of speech. He was the man of learning that Milton had in mind. Milton knew that the person who talks about freedom of speech requires freedom of speech.

Freedom of speech has been a topic widely debated around the world on university campuses. For example, in 1964 on the Berkeley Campus of the University of California, there developed the Free Speech Movement which was a forerunner of the student-based civil rights and anti-war movements that were active for the next ten years. From

Berkeley came several leaders for the up and coming computer Homebrew movement which was the beginning of all personal computers we know today. In the last two years, there have been student revolts against the political system in China and France.

Freedom of speech is still freedom of speech even for bad causes. In North Carolina, and several other states, one can pay $5.00 for an "open sesame" password onto the Aryan National Liberty Net, an electronic Bulletin Board. It contains the latest in neo-Nazi thought offering sections entitled "Know your Enemies," "ZOG Informers" and "Patriotic Groups." One of the main concerns is that of kids who like to hack into closed computer bulletin boards. They are the most vulnerable to this type of hate propaganda.

An important vehicle in the fight for free speech is the personal computer. The personal computer can be a facilitator of free speech because it is an information machine. It grew out of the supporters of the anti-war movement who wanted a personal computer for the masses. At the time, the computers available were the mainframes made by IBM and other big manufacturers, affordable to only huge companies and the government, and the mini-computers manufactured by DEC (Digital Equipment Corporation) and others. The minicomputers were more of a people computer because universities could afford them and make them available to students.

Many clubs formed that had people interested in a people's computer. California's Homebrew Club was one of the famous ones. Many important founders of the personal computer blossomed in the Homebrew Club. The first couple of real personal computers were made exclusive, because the manufacturers wanted to make profit from them. The hackers soon defeated the exclusive rights that these manufacturers wanted. They figured out and standardized different aspects of the machines to fit the hacker ethic, which stated everything should be in public domain so that people could learn something from, be able to benefit from, and finally be able to enhance it. As a result of these pioneers, IBM was forced, when it entered the personal computer market, to conform to the pioneers and to make an open, public machine. IBM of all companies! IBM was the Godfather of the Mainframes. These pioneers achieved a victory for free speech!

In 1987, on the campus of the University of Michigan (Ann Arbor), free speech was again brought into question. On an electronic bulletin board available to the University community, a file of ethnic, racial and other jokes offensive to specific groups was made available by certain students. The file kindled the fire of debate on freedom of speech and computer propriety. After the student who started the file, was pressured to close it, more debate flourished. Some students started files with page-long essays on the evils of bigotry, while others started new joke files. So some students answered the discontinued joke file, while others restarted it. Now that's definitely freedom of speech!

Even more debates have been started about whether to limit what people can say by computer, whether bad jokes should be allowed as a category. "Some schools such as Dartmouth and Carnegie-Mellon have imposed a code of ethics for students using their computers, with violators facing removal from the system. Dartmouth specifically prohibits offensive material in a code that warns: 'Obscenities should not be sent by computer nor stored where they could offend other users'."[3] Supporters of the joke file say that no one was forced to read the file and that they had to go out of their way to read it. Isn't there always a temptation though? Robert Parnes, programmer of the software used for the electronic bulletin board, said that he thought that the students would try to test the bounds of decency.

Our world would have to be made better to have unlimited freedom of speech. Most people in the world who have a type of Bill of Rights have some protection of their freedom of speech. As Barbara Amiel writes in her article "Censoring One, Censoring All," "You either have free speech for everybody or you do not have free speech,"[4] you have to have unlimited freedom of speech or you are discriminating against a viewpoint. The result of unlimited freedom of speech is that if someone exercises their freedom and expresses their viewpoint on a matter, a person of an opposing viewpoint would be able to answer the first person's work. This way everyone could hear all sides on that matter and make up their own minds on what they agree with.

Notes

1. Barbara Amiel, *Censoring One, Censoring All*, MacLean's, April 15, 1985, p 11.
2. Irving Younger, "What Good Is Freedom of Speech?," Commentary, vol 79, Jan. '85, pp. 45 - 46.
3. Isabel Wilkerson, "Ethnic Jokes in Campus Prompt Debate," *New York Times*, April 18, 1987, Sec 7, p. 6.
4. Barbara Amiel.

Letter To The Editor

July, 1988

Dear Editor,

It is rare indeed that a publication prints clear statements of opposing points of view. Your first issue dedicates you to making computers and computer knowledge available to all people, especially the workers who will use computers in their work. You wrote, "...to deal with the problem of automation, it is necessary for people to be familiar with computers, to use them and to know their capabilities and limitations." In your second issue, however, you print a letter from a friend who argues the opposite position. He writes, "I do believe that computers are not a mass media." I would like to enter this debate.

Your letter writer suggests since big companies are motivated by profit, these companies will develop computers. But what kind of computers? The history of computers shows that IBM, DEC, etc. were motivated to make profits. In the '50's and '60's, they saw it in their interest to make large expensive computers, the sale of only a few, bringing them large profits. Those engineers working for these companies, like David Ahl, who had visions of smaller school and home computers, had to organize and work outside of the big companies in order to give any hope to their dreams. And this trend is constant. Inexpensive computers, affordable by many people, are always disappearing. Witness, for example, the Timex 2068 or Commodore 64. Instead, all corporate innovation is going into top of the line 80386 and 68020 and soon 80486 and 68030 machines. When was the last time a new computer was introduced to sell for around $200? Surely the

technology and market exist for such a machine but not the capital to mass produce it. But also, education in computer programming is already being cut back. In the Detroit area public schools, programming classes are rarely given any more. Spreadsheet and wordprocessor training is all that is now offered for the majority of the people. Hourly workers especially see detailed knowledge of computers as a must for the work world of the near future. But the *Wall Street Journal* (8/11/88, p. 1) reports that, "Five years ago, ...Michigan decided that its economic salvation lie in manufacturing, not in turning its factory workers into computer programmers...." That says to me the employers are afraid workers will, as your letter writer wrote, "create chaos" with such knowledge. But armed with programming knowledge, wouldn't workers make possible the successful introduction of computer controlled processes onto the shop floor? Such workers would then be able to catch and correct the inevitable errors that management and engineers distant from the shop floor will make. Remember, computers are very fast at what they do. Without quick intervention, a computer error can produce a lot of garbage in a short time. That's what General Motors found out when it made the mistake of thinking robots will make possible a "workerless factory."

Hasn't this same debate run throughout history? Those who hold the power always argue there are special reasons why only they should have knowledge, while those without power strive to gain more knowledge. I believe it is fortunate for progress that there are hackers and hobbyists who go on innovating and experimenting and there are workers, like your staff, who are learning and spreading computer knowledge.

Let me ask your letter writer, where would radio be if it weren't for the amateur and ham radio operators in the first quarter of this century? I think history shows it will be the same with the marriage of personal computers and robots in the modern factories. This is a development our society is pregnant with. It could greatly cut down the number of hours necessary for each worker to work. But it is being opposed by the corporate planners who see profit increases from stretching hours and lowering wages. So again it will have to be science fair entrants, hackers, hobbyists, tinkers and 'amateur thinkers' who will force the necessary breakthroughs onto the corporations. That's why I welcome

the *Amateur Computerist* and hope your pages stay open for this crucial debate.

<div align="right">J. Hauben</div>

(**Editors' note:** Last issue we promised that we would answer the "Letter To The Editor" in the next issue. Since a reader submitted the above, we decided to put off our response again until the following issue. But we welcome other readers to enter the debate.)

PLANT LIFE.............By "Doc" Wilson

No, I'm not ready for my pension! It's just this darn speedup that makes me look that way.