

Ohio Scientific



*Internet Photo of Cassette based
OSI like used in high school*

The first computers I used were Ohio Scientific (OSI) in my high school. They had two computers for student use in the school. One was a Challenger 1P or 2P with cassette tape for data storage and a small printer that used roll paper. The other was a dual 8" floppy system with video board and a faster dot matrix printer.

The OSI I have in my exhibit is similar to the high school machine with floppies. This machine is missing the case for the keyboard. The high school machines only had monochrome monitors and I think monochrome video board. It has as part of its character set various symbols for drawing things including ones that look like the Star Trek Enterprise. The high school machine has the irritating flaw that

if the power fails it overwrites data wherever the head is when power is lost.

The printers were important since you had limited time on the computer so you wrote your program on paper then entered at the computer. You did some debugging at the computer and more major changes by printing your program and writing up the changes at home. One of the printers has a pot on the back that you could adjust the rate it fired the print hammers. This changed the character width though since the font didn't change the narrow characters looked funny. The narrow characters printed faster so we frequently printed that way.

The advanced students quickly passed the knowledge of the teachers. Information was shared between students and from manuals, newsletters and whatever people could get access to.

I started with playing with some of the programs that were available with the machine then started writing my own in BASIC. The operating system was quite primitive so I along with some other people started to make

improvements, writing code in 6502 assembly language. Some of the things I did were to give a way to edit an existing line of BASIC code. Normally you had to retype the entire line if you wished to change it. To renumber a BASIC program another BASIC program was provided. We added the ability to do that while in BASIC.

If you want to save a file from BASIC the file name must already be created. To create a file you had to run a BASIC program so it was difficult to save the file to a new name unless you planned ahead. We added the ability to create and delete files and to get a directory listing while in BASIC. See help screens below. Scott Mund, and John DeFayette, and I worked on the OS changes. I did the larger portion of the changes.

High school students didn't have lots of money so games were “shared” and since the OSI used single sided disks we punched the extra holes to allow the disk to be flipped to use both sides.

```
HELP DOCUMENT 1

EDITOR COMMANDS

CURSOR      ^U--cursor up
CONTROL:    ^D--cursor down
            ^F--cursor forward
            ^B--cursor backward

EDIT
CONTROL:    ^I--enter/exit insert mode
            ^O--delete character under cursor
            RUB OUT  destructive backspace
            REPT     clear screen

MISC:       ^E--enter line into aux. buffer
            ^R--recall line from aux. buffer
            ^T--enter/exit BASIC trace mode
            ^N--turn auto. number on/off

ONE-KEY BASIC KEYWORDS

^1--FOR      ^2--TO      ^3--STEP    ^4--NEXT    ^5--IF
^6--THEN     ^7--GOSUB   ^8--RETURN  ^9--POKE    ^0--PEEK
^:--RUN      ^=--LIST    ^/--DISK    ^.--GOTO    ^,--INPUT

DOS EXTENSIONS

DISK!"LIST"          list directory
DISK!"FI FILNAM,X"  create "FILNAM" with length (TRACKS) X
DISK!"RN FILE A,FILE B"  rename "FILE A" as "FILE B"
DISK!"DE FILNAM"      delete "FILNAM" from directory
DISK!"DE"
ARE YOU SURE? Y      delete entire directory
DISK!"CLEAR"         clear screen

BASIC EXTENSIONS

AUTO X,Y            RENUM X,Y,Z
XREF                1HELP    2HELP    COPY
FIND 'STRING',line #'s
FINDV 'VAR',line #'s
CHANGE 'STRINGA'='STRINGB',line #'s
CHANGEV 'VARA'='VARB',line #'s
```

TI Professional Not Quite IBM Compatible



Original Dual Floppy Configuration

Companies were trying to figure out how to compete with the IBM PC. For a short while companies tried to make a better PC. The BIOS and DOS didn't have interfaces to do graphics and even text was much faster if you accessed the hardware directly. For a short while TI was able to get major programs ported to the TI but companies soon realized they didn't get sufficient revenue to make that worthwhile. People quickly looked for the most IBM compatible machines at the lowest price and the only MSDOS compatible machines were discontinued.

This was our first home computer which we purchased 6/23/1983 for \$5381.25 (\$17,840 in current dollars). I think that was for 256k computer, character and single plane graphics board, printer,

DBASE II, DOS, BASIC, EasyWriter II word processor and misc supplies. The memory expansion from 64k to 256k was free. What a bargain.

My mom was interested in computers and had a kid trying to convince her how much one would help with the rabbit hobby (I really wanted one to play with). We purchased it because it had much nicer text than the IBM with color graphics adapter (CGA) and had graphics capability unlike the IBM monochrome display adapter. The TI screen resolution is 730x300 pixels vs CGA 640x200. It wasn't clear yet that fully IBM compatible was going to be important.

DOS was such an improvement over the OSI operating system that the only significant thing I did was write a disk caching driver to try to speed disk and floppy access. This was written in assembly language. It worked fine but the amount of spare memory available limited its effectiveness.

The other main programs I wrote were the inventory, rabbit and show programs for managing our show rabbits. The rabbit and show programs we sold to other rabbit breeders. We sold 459 copies of my rabbit program and 591 copies of the show program. That more than paid for the computer.

The DOS programs were sold from 1988 to 2005.

These were originally written in DBASE II then moved to the DBASE compiler Clipper for better performance and to allow it to be sold. Competitors took over the rabbit program market before we got around to making a Windows version. My brother wrote a modern Windows version of the show program which we just recently discontinued.

DOS provided minimal device independence so each program needed to know how to use the special features of the printer. Many of the printers also decided that they should use their own unique code set which added to the fun. For the program we were writing we needed to put the special codes for all printers we wanted to support in our program. It's possible a commercial library for Clipper was available but we didn't know of them.

I also did various programs in BASIC, Turbo C and Turbo Pascal. My father used BASIC and Turbo Pascal on the TI after mom upgraded to new machines.

During this time computers got upgraded more often than now where they tend to be replaced. The TI got a lot of upgrades during its life. It started as a dual floppy system with 256k bytes memory. We later added a real time clock card so the date and time didn't need to be entered every time it was turned on. We also added a seeker memory board to bring it up

to 768k bytes. At some point I added the memory chips and removed shorting wires to upgrade it to 3 plane (8 color) graphics. We also got a color monitor.

It looks like in November 1983 we replaced one of the full height floppies with a 10 MB hard drive. The Seeker board had a SASI interface but drives that supported that were expensive. We got a good deal on 10 MB TI hard drive and Xebec SASI to ST-506 adapter board I think through the users group. At some point we changed to half height 5.25" and 3.5" floppies. Possibly in 1987 we got a CSTI board that made it able to run most IBM software.

When we first got it, the 10 MB drive seemed like a huge amount of space, almost 28 floppies. It wasn't that long before we had to decide what stayed on the hard drive and what lived on floppies. It took quite a while before the growth in disk drives and cost reductions exceeded the growth of stuff you wanted on the computer so space was less of an issue.

We also bought the technical reference manual which had theory of operation, schematics, and BIOS listing. The computer needed a number of bad memory chips replaced over its life. This was expected and software was provided with the memory board to help find which chip needed to be

replaced. They were socketed and the diagnostic said which was bad so you could pull the bad chip out and put in a new chip.

When we were no longer using it as the primary computer my father used it to learn programming.

At this time the printed manuals that came with the computer and software was critical since that was the primary information for figuring out how to use the computer/software. They were much more complete than many of the manuals you get now. There were also books published to give more information. Magazines were a important source of information on what was happening in the computing area. Sharing and finding information was much more difficult than now.

Dos programs used various key sequences to operate. These stuck with me better than I expected. I needed to edit some files getting the display ready and found out that my fingers still remembered many of the keys needed to operate the Kedit editor I used a lot but mostly stopped using 20 years ago. Some programs did have on screen help but it tended to have much less information than the manuals.

Users Groups

For the early computers users groups existed where users got together to share information on using the computer and software. Some were local and others were mailed letters published in newsletters. For help with the computer you had some support from the manufacturer, seller, or software vendor by visiting if local or by phone. Another source was local people with the machine which the users groups helped to get together. The Ohio Scientific did have users groups and I think there was one in the area I went to once or twice. For the TI we were members of the local users group until it merged with a PC users group at the end. It had a monthly meeting and a newsletter. It also distributed disks with freeware and shareware software.