Contribute To The VIE
I hope that all our readers have seen our excellent new exhibition Where To? A History of Autonomous Vehicles.
I hope that you all got a chance to ride in a Google self-driving car. I did and I loved it. My wife, Bea, did also and she loved it three times. (On Thursday, the museum had planned to offer rides in two Google cars, and Google provided three! So, there were extra seats available and Bea rode whenever there was an empty seat.)
I found myself both amazed at the technology—how they decide whether a pedestrian will cross the road or not, based on the set of the shoulders—and yet surprised by how far there is yet to go.
Our exhibition traces the evolution and technology of autonomous vehicles not just self driving cars and it is terrific. Congratulations to Kirsten Tashev and Marc Weber. And thanks to William Harnack for his note on the octocopter.
Our series of Recent Acquisitions continues. Thanks to Alex Lux, who also notes the arrival of the first of the Paul Pierce collection, a very significant addition.
As always, we solicit your input: stories, interesting facts and factoids and articles.
Jim Strickland  jlstrick@aol.com

CHM's New Blog
Recent CHM Blog Entries
Kirsten Tashev keeps us up-to-date on our new CHM Blog. Recent Entries are:


Basic: 50th Anniversary
Happy 50th Birthday to BASIC.
Yes, it was 50 years ago on May 1, 1964 that the first BASIC (Beginners All-purpose Symbolic Instruction Code) program was run at Dartmouth University. Created by Professor John Kemeny and Professor Tom Kurtz and a team of eager students. It ran on a GE time sharing system,
Here is a good article from the Wall Street Journal.
And here is an interview from National Public Radio (both audio and transcript.)
And where would Microsoft be if they hadn’t provided Basic to MITS and IBM?
Happy Birthday to Yoooooou!

70th Anniversary of Colossus
It is the 70th Anniversary of Colossus, that amazing electronic code breaking machine that, it is said, shortened World War II by two years. Here are two links that contribute to the history of this amazing electronic marvel.

• One of the women code breakers who used Colossus and made it work some 70 years ago.
• And the death of Jerry Roberts, the last surviving member of the British code-breaking team died on March 25 in Hampshire, England.

More Links That You May Enjoy

• David Laws is quoted extensively as Gary Kildall is honored in Pacific Grove
• Andy Warhol's digital art rescued
• CHM's new exhibition on self driving cars
Computer History Museum Fellows Inducted

On April 26, the CHM inducted three new Fellows of the museum. To quote John Hollar:

The Class of 2014 has played a unique role in placing the miracle of computing technology in our hands, homes, and workplaces. Dr. Irwin Jacobs pioneered not only the science of digital voice and data transmission, but also the device technology that helped it to encircle the globe. John Crawford helped spark the information revolution with microprocessor architecture that placed personal computers at the world’s fingertips. Lynn Conway advanced the spread of computing with breakthrough work in chip design, which unleashed a generation of automated engineering.

If “smaller, faster, cheaper, better” is the mantra of today’s digital society, then Jacobs, Crawford, and Conway are its talented, creative enablers.

For more information on the 2014 Fellows:

- **Lynn Conway**, for her work in developing and disseminating new methods of integrated circuit design.
- **John Crawford**, for his seminal work on industry-standard microprocessor architectures.
- **Irwin Jacobs**, for his pioneering work in digital mobile telephony, data and communications.

/360 Announcement Redux

Our article on the 50th anniversary of IBM's announcement of the historic System /360 family of computers brought some interesting comments.

- **Robert Garner** points out that the “$5 Billion Dollar Gamble” was more like $50 billion in today's dollars. Or perhaps, $200 billion in the sense that IBM's gamble was two years of revenue (IBM's revenue in 1962 when the decision was made, was $2.6 billion and today it is about $100 billion).

- **Ed Thelen** writes:
  - It was a "bet the company" operation !!! If it had stumbled and partially failed, as Univac had previously stumbled and partially failed, computer history would read quite differently. As it was, it succeeded in rattling and causing great turmoil in the competition.
  - 8 bit characters were the new norm, lower case - who needs it, all of a sudden you needed it or were "out of date". *
  - 9 track tapes became the new norm.
  - Broad spectrum machine expectations, each model was good enough at both business and scientific problems.
  - A relative painless up-grade (or down-grade) path for customers !!
  - Same peripherals, same programs, familiar operating system, no retraining, conversions, and acres of mine-fields and "surprises".
  - I was working in GE Computer Department HQ when IBM's announcement hit the streets - my tale [http://ed-thelen.org/EarlyGE-Computers.html#Marginalized](http://ed-thelen.org/EarlyGE-Computers.html#Marginalized)
  - And of course there were some cliff hangers – including: A modern (multitasking) operating system was VERY late - nicely described in "Mythical Man Month" by Fred Brooks [https://en.wikipedia.org/wiki/The_Mythical_Man-Month](https://en.wikipedia.org/wiki/The_Mythical_Man-Month) and [http://www.amazon.com/The-Mythical-Man-Month-Engineering-Anniversary/dp/0201835959](http://www.amazon.com/The-Mythical-Man-Month-Engineering-Anniversary/dp/0201835959)
  - The early production 9 track tape drives for the 360 were based on early production 729 mod 4 drives - The improvements from field experience did not get included !! A big delay in getting really reliable tape drives.

* Fred Brooks once said, "The most important single decision I ever made was to change the IBM /360 series from a 6 bit byte to an 8-bit byte, thereby enabling the use of lowercase letters. That change propagated everywhere." —Ed.
Paul Pierce Collection: A Significant Acquisition

ALEX LUX

Perhaps the last large private collection of mainframe computers in the world is coming to CHM!

Paul Pierce, a retired engineer and computer specialist with Intel in the Pacific Northwest, has spent the last several decades amassing and safely storing some of the most significant large-scale computers of the 1950 and ‘60s. The legendary relics (almost all IBM) include a Model 650, Magnetic Drum Calculator, IBM’s first mass-produced digital computer. (It’s also computer scientist Don Knuth’s first machine and the one to which he dedicated Volume 1 of his The Art of Computer Programming book series).

Then there is the Model 7094, a gargantuan scientific computing system that comes in twenty-one refrigerator-sized cabinets. And there’s also the 7094’s older brother: the Model 709 and its business-oriented cousin, the Model 705. And, for small—almost ‘personal’—computing, there is the Bendix G-15 scientific computer. All machines are in good to very good condition.

The first shipment of the Pierce collection of artifacts arrived at the CHM warehouse in early May. After the artifacts were offloaded, a team of five CHM staff members began cleaning the “Big Iron” with HEPA-filtered vacuums, brushes, and microfiber cloths.

Although years of storage in a dusty warehouse had left them with a layer of dirt, they were still in relatively good shape. Next, the team photographed and cataloged the pieces into the collections database, and matched up loose door and side panels with items that had some missing. Finally, the machines were strapped, palletized, and prepped to be fork-lifted to their storage locations.

The next two shipments of the Pierce collection of artifacts will arrive in early June.

John Hollar writes the following.

The Pierce collection is an important addition. There are very few known collections that comprise whole first-generation systems like these. This particular collection is even more remarkable because Paul so carefully assembled it over a long period and took such care in preserving it over time.

We are frequently asked whether, and for how long, the Museum will continue to collect these sorts of vintage machines. The answer is actually quite simple. From a strategic and mission perspective, we will always collect them. Thankfully, our list of sought-after items is growing shorter—in part because CHM has done so well in its acquisition work and because we have developed a solid approach to archiving and preservation. However, we will always be open to acquisitions that bolster our collection, enhance our exhibition and storytelling capacity, and preserve important areas of computing for future study. That’s why we’re here.

The biggest short-term challenge for CHM is sheer space. Our facility in Milpitas is rapidly filling up even as our appetite for collecting remains strong. This is one of the strategic issues that the board and our management team are examining as we plan for the next phase of the Museum.

Octocopter

WILLIAM HARNACK

Hanging from the ceiling in the Museum as part of the Where To? A History of Autonomous Vehicles exhibits is the Pilot #1 octocopter drone made by Matternet, a Menlo Park, California company. It is on loan for the duration of the exhibition.

Drones like this one have been designed to deliver critical medical supplies to unreachable locations at low cost, especially in developing countries. Matternet was launched at the Computer History Museum’s Hahn Auditorium, as a part of Singularity University.

You can see the announcement video and CEO Andreas Raptopoulos’s presentation at the following link: [https://www.youtube.com/watch?v=K7vjsxHh-wWg](https://www.youtube.com/watch?v=K7vjsxHh-wWg)

Translated Tour Sheet

We have have translated one of our tour sheets – “Where is Silicon Valley? 9 artifacts, companies or concepts that helped to define Silicon Valley as we know it”. Languages are: Spanish, German, French, Portuguese, Korean, Chinese, and Japanese. Keep this in mind for our foreign visitors.
RECENT ACQUISITIONS

ALEX LUX

Google Glass- Google Glass is a product of Google[x], the "skunkworks" operation of the corporate giant. According to Google, the glasses are, “Designed for those who move” who want to “Be active,” “Explore [their] world,” and “Live lighter.” The device allows users to have current events such as weather and news reflected into their eyes, as well other information you would expect from a smartphone, like past phone calls or photos. The device can be controlled by either a touchpad on the frame or via voice command. Some privacy advocates have criticized the ability of Glass to record still and video imagery inconspicuously and without the knowledge of those being recorded. The Explorer version of the customizable eyewear is now available to the public for $1,500 on the Glass website.
X7087.2014, Gift of Google, Inc.

Adapteva Parallella Board- The single-board Adapteva Parallella is a high performance computer designed for massively parallel systems. In this sense, it is a “Raspberry Pi for supercomputing.” CHM’s new acquisition is the first version of the computer, which is outfitted with a 16-core, Adapteva-developed Epiphany microprocessor. The project was launched with a Kickstarter campaign that ultimately netted close to $900,000. A pledge of $99 or more was needed to receive one of the boards, which came loaded with the software necessary for owners to design their own projects. The Parallella computing platform is open-source and all technical documentation was published on the Web when the project was funded. The donor of this artifact is the founder of Adapteva, Inc.
X7115.2014, Gift of Andreas Olofsson

Signed Photoshop Pillow- This pillow was signed by key members of the Photoshop development team. Photoshop was initially created by brothers Thomas and John Knoll. While completing his doctoral work at the University of Michigan in 1987, Thomas created an early version of the software and showed it to John, who worked at Hollywood special-effects company Industrial Light & Magic. Seeing a practical use for it in movies, John used it for image editing of the “pseudopod” scene in James Cameron’s The Abyss. Today, it is the most popular software program published by Adobe Systems, and the most popular image editing software in the world. Photoshop is one of the seven galleries that will be featured in CHM’s upcoming Make Software: Change the World exhibition.
X7095.2014, Gift of Adobe Systems
IBM Card Size

What was the size of the original IBM card?

Well, that depends on what you mean by "original" and "IBM."

- The first documented card used by Herman Hollerith was 8 5/8 x 3 1/4 inches. It was used in the 1887 Baltimore Vital Statistics census. It had three rows of 36 punch positions at top and another three at the bottom and was punched using a "conductor punch."

- The card used for the 1890 census was 6 5/8 x 3 1/4 inches and had 288 punching positions in 24 columns and was punched with the pantograph punch.

- In 1897 Hollerith used a 7 3/4 x 3 1/4 card with 36 columns to regain the business at the New York Central Railroad. (The NYC had installed Hollerith equipment in 1894 but it had been returned, in part, because the NYC needed to add, not just count.) This card had a columnar layout so that columns could be treated as fields and added with Hollerith's "Integrating Tabulator" and sorted with the automatic feed, Horizontal Sorter. Also, this was the card that (probably) was based on the size of the paper currency of the time. (Note that the currency "of the day" was 7.4218 x 3.125 or approximately 7 7/16 x 3 1/8 inches.)

- The 1900 census used three cards:
  - The Population card was 6 5/8 x 3 1/4, the same as in the 1890 census.
  - The Farm card was 7 3/4 x 3 1/4 card with 36 columns. It was based on the card designed for the New York Central Railroad and was suited to the columnar farm data which required the integrating calculator for addition of, e.g., acreage. By the way, that is a 1900 farm card template that is on the pantograph punch that is in the Hollerith display.
A Hidden Artifact: IBM Model B

JIM STRICKAND

We have all passed by, looked at and studied the Johnniac exhibit. Having the “whole thing” there to represent the second wave of computers makes a great exhibit.

But recently I noticed what I'll call a hidden artifact. Hidden in plain sight, but not completely documented is an IBM Model B typewriter used as a time sharing terminal for Johnniac's seminal time sharing system, JOSS.

It can't be just any old Model B. One can't just attach a typewriter to a computer. You need special circuitry in the typewriter to produce and accept the signals required by the computer. The IBM typewriter that had that circuitry was a special model announced in 1956, two years after the Model B itself was announced.

It was called, variously, the Model B (input-output), the Model B Input Output Writer and the IBM Input Output Writer, Model B. It provided for 44 or 88 characters (uppercase or upper and lower case) and typed at 120 words per minute. It was the computer’s responsibility not to overrun the typing capability.

Other similar devices in use at the time were the Flexowriter, (which is used on our Librascope and which we have written about previously) and the teletype used on our HP 2116A.

The Model B (input-output) was IBM's entry into the burgeoning “terminal” marketplace.

For more information on the Model B (input-output).

The VIE Cumulative Index is stored at:
http://s3data.computerhistory.org.s3.amazonaws.com/chmedu/VIE-000_Cumulative_Topic_Index.pdf

Then: Practice makes perfect.
Now: Photoshop makes perfect.

Then: You can't tell a book by its cover.
Now: You can't tell a book by its Kindle.

Then: Birds of a feather flock together.
Now: Birds of a feather shoot pigs.

Then: A stitch in time saves nine.
Now: A what?

Please contribute to the Computer History Museum Volunteer Information Exchange
Share your stories, your interesting facts (and factoids) and your knowledge
Send them to Jim Strickland (Jlstrick@aol.com)

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<th>Date</th>
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<tr>
<td>May 31 &amp; June 1</td>
<td>Sat. Sun.</td>
<td>All day</td>
<td>Mountain View Community Day at the Computer History Museum!</td>
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<tr>
<td>June 11</td>
<td>Wed.</td>
<td>6:00 PM Member Reception 7:00 – 8:30 Program</td>
<td>DARPA Director Arati Prabhakar in Conversation with The New York Times' John Markoff</td>
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