Computer History Museum

Volunteer Information Exchange

Sharing what we know with those we know
Volume 1 number 2
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VIE – Issue 2

This is the second issue, we received a number of very positive comments on the first issue, so here we go again. We hope you found the first issue useful, or at least informative.

Some have asked, "How often will the VIE be sent.?"

The answer is, for the present it will be ad hoc, whenever we have some critical mass of information. Later, we may find that a schedule is helpful.

The first issue used a mailing list that was "cobbled together." Our intent was to include docents, other volunteers and staff. So if you know of someone who should receive it but did not, please let me know. "

Jim Strickland **jlstrick@aol.com**

New Questions

Q: On the Hollerith machine, just to the left of and behind the "waffle iron" card reader are six switches. Do we know what they do? And next to the switches are what seem to be two terminals. Do we know what they are for?

Q: The "flip book" on the Univac I exhibit says that the Univac had core memory, and shows a picture of both the mercury delay line memory and core memory. So apparently at some time, it had both kinds of memory (mercury delay and core). Univac II, c.1958, replaced the mercury delay line memory with core memory. Do we know when or why core was used in Univac I?

Q: I have done some research on the Enigma machine. (See the article on page 2.) I compared photos of our Enigma with others on the net and it seems that ours is an army model from around 1941. Is this correct? What do we know about where and when our machine originated and how we came to get it?

CONTENTS

DOCENT NEWS

- **"Formal" (staff organized) salons remain suspended for the time being. However, Lovelace can be made available to docents at noon on Wednesdays if docents want to organize their own salon, study session, etc.** ***from Jim McClure***

If at first you don't succeed;
call it version 1.0

STORIES

Do you have a favorite story? Did you just learn something new that you want to share. Even if you think, "Everybody knows that ...", please let us hear from you.

Enigma

The concept for the Enigma was developed in 1915 by an American, Edward Hebern, who devised a machine to generate code using a newly produced electric typewriter. A later development by Hebern was a machine with rotors, which switched the connections of the electric typewriter each time a key was pressed. Hebern sold his patented Electric Coding Machine to the US Navy in 1928.

In Germany, Dr. Arthur Scherbius bought the patent for a secret writing machine invented by Dutchman Hugo Koch in 1919. He improved on the design and in 1923 went into production with a machine he called "Enigma." Throughout the 20's he made improvements based on the needs of the military. The major difference between the military Enigma and commercial Enigma models was the addition of a plugboard to swap pairs of letters, greatly increasing the cryptographic strength of the machine.

The Polish Cipher Bureau had intercepted German ciphers in 1928 (right after the machine's introduction by the German army). That year, Polish Customs officials intercepted a package sent to the German embassy in Warsaw and the Cipher Bureau examined a new military version of the commercial Enigma. In December 1932, the Poles first broke Germany's Enigma ciphers.

Later improvements in the Enigma forced the Poles to develop mechanical decryption aids. The result, the "bomba" (bomb in English) as it was called, was an electro-mechanical combination of six Polish Enigma "clones" with additional devices.

Five weeks before the outbreak of World War II, the Polish Cipher Bureau gave Enigma-decryption techniques and bombas to French and British military intelligence. The British delegation was literally left speechless at this astounding development for they had not been able to crack the German code.

Continued improvements in Enigma forced Alan Turing and other mathematicians at Bletchly Park to develop more advanced machines which they called "bombes." Over 200 of the bombes were built by the British Tabulating Machine company.

Machines like ours came with five rotors, each had a name. At the beginning of a session, the operator selected three of the five and installed them in the machine. He then positioned the three rotors and wired the plugboard at the positions selected for the session. In use, it often took two men to operate the Enigma, one to type and one to record which letter was lighted.

As I was researching this article, an Enigma, similar to ours was offered on Ebay. I saw a bid of about 28,000 Euros. As of today, it is gone from Ebay.

o o o

The Lorenz machine was even more complex than Enigma. Made by the Lorenz company, it was used for the most important messages passed between the German Army Field marshals and their Central High Command in Berlin. Bletchley Park code breakers called the machine 'Tunny' and the coded messages 'Fish'. The Lorenz was large so that it was not a portable device like Enigma which was both small and battery powered.

Following on the success of the bombes, Tommy Flowers, of the British Post Office, developed Colossus. This was the world's first practical electronic digital information processing machine - a special purpose forerunner of today's computers. Colossus went into service in December 1943.

Lorenz had to be cracked through complex statistical analyses on the intercepted messages. Colossus could read paper tape at 5,000 characters per second. This meant that the huge amount of math that was needed could be carried out in hours, rather than weeks. Colossus Mark II was put into service on June 1, 1944, and immediately produced vital information for the D-Day landings planned for June 6. Flowers told of a crucial meeting between Dwight D. Eisenhower and his staff on June 5, during which a courier entered and handed Eisenhower a note summarizing a Colossus decrypt. It confirmed that Hitler wanted no additional troops moved to Normandy. He was sure that the preparations for the Normandy landings were a diversionary feint. Seeing that message, Eisenhower said, "We go tomorrow."

At war's end, Winston Churchill, wanting to keep the British code breaking knowledge secret from the Russians, decreed that that all documentation should be destroyed and that the 200+ bombes and ten Colossus machines should be torn into to parts "no larger than a man's hand." Their existence was publicly revealed only when Official Secrets Act restrictions were lifted 30 years later.

FACTS AND FACTOIDS

Factoid (Oxford English Dictionary) "something which becomes accepted as fact, although it may not be true." If you submit an item, please differentiate the facts from the factoids. And if you can verify something, thus changing it from a factoid to a fact, please let us know.

Following on the Librascope discussion in Issue 1 ...

Fact: Librascope was originally sold and serviced by the Royal Precision Electronic Computer Company, a joint venture with the Royal McBee division of the Royal Typewriter Company. Hence "The Royal Precision Electronic Computer" line on the LGP-30 backdrop.

Fact: The Bendix G-15 was introduced in 1956 by the Bendix Corporation. In 1963, as William Norris started his acquisition splurge, CDC acquired the Computer Division of Bendix Corporation. That is why our Bendix G-15 also says Control Data.

Fact: Asteroid #1625 is named after a computer -- the NORC (IBM Naval Ordinance Research Calculator). NORC went into service in December of 1954 and is regarded by many as the first supercomputer. It had been used in calculating asteroid orbits.

Fact: In 1936, there was no available building in Washington, DC, that had floors sturdy enough to support the weight of the paper records and IBM equipment required by the Social Security tabulating installation. So, an old Coca-Cola bottling plant in Baltimore, Maryland was selected as a temporary location. It was named the Candler Building, after Asa Candler founder of Coke. The Social Security Administration remained there until 1960.

Watson on Jeopardy

Jim Strickland: OK, I admit it. As a former IBM'er, I was proud, yes proud, to see Watson perform so well on Jeopardy. Perhaps I should have been rooting for the humans, but I found myself riveted by the man-machine contest and pulling for Watson.

You have seen many articles about Watson -- some discussing the past, some the future, and some comparing it to the human brain.

In my opinion, we have witnessed a milestone. Artificial Intelligence has progressed so much more slowly than we thought but on February 12 – 14, it took a leap.

Give us your thoughts on Watson – hero or villain? Evolution or revolution? Milestone or Cobblestone?

A little reflection on giving my first few real overview tours:
Al Rosenzweig

• I am getting it done between 55 min and 75 min. It's hard with a large group (more then 10-12) since quite a bit of "herding" is required as visitors get distracted between objects. This gets harder when you need to thread them through other self-guiding visitors. Keep down the noise level by asking the front desk to set the master A/V volume to low before you start your tour.

• It's hard to get the visitors into the discussion mode and I have to keep trying different approaches. Steve Russell has suggested that it's good to ask a few simple questions that can get many responses such as "Who has a computer on them right now?". That breaks the ice and they will be more likely to get into the discussions.

• Be prepared to tweak the tour after you realize what works and what doesn't. Make some notes after each tour and don't be afraid to change artifacts or vary your approach for continuous improvement.

There is an old story about the data center of the future.

This data center runs 24/7 with only a man and a dog.

The man's job is to feed the dog.

The dog's job is to make sure the man does not touch the computer.

A COMPUTER, THE INTERNET, AND WIRELESS IN RURAL TURKEY

Chuck Rino

I missed the first few session of docent training because I was visiting Turkey, but the trip provided an opportunity to see the computer revolution in a very different light. A computer had been requested for the small school in the cramped building in the picture below. (The Grand Circle Foundation supports such projects in countries where its affiliated travel companies conduct tours.)

The look on the teacher's face tells how much that computer meant her school. She would use if for access to the internet where she could get badly needed teaching materials. She also wanted a video display to make it easier to present the materials to the children.

A rugged but popular (with folks who have access to yachts) segment of the Emerald Coast of Turkey is not accessible by road. The area has never been well served by land lines or even electricity. However, modern wireless communication has completely changed that.

This picture shows our guide (white teeshirt) helping a shepherd who was having trouble with his cell phone.

The problem was quickly diagnosed. He had inadvertently shut the ringer off.

Meanwhile, our guide would tell the ship's captain when we would be arriving so lunch would be ready. He regularly checked trip details on the internet as well.

On a later walking adventure in the same costal area, we were the guests of a very industrious shepherd shown at home with his wife and daughter in the picture below.

We were served sage tea and show around his farm. Besides farming, he sells food and shelter to hunters who come there in the fall to hunt wild boar. A good hunter himself, he proudly showed us the tusks of a boar he recently killed.

He has as well a passions for soccer, which led him to procure a small generator and the satellite dish show in the photograph below. The fence was was put there to keep his animals from chewing the cables.

He will move to a nearby costal city next year because his daughter will start school then. She and her mother will be in touch with dad by cell phone when he returns to the mountains to manage his farm operation. Although the school with the computer was in a different part of Turkey, I'm sure the young girl will learn computers and the internet.

Definitions for the 21st Century

TREEWARE Hacker slang for documentation or other printed material.

Events			
Date	**Day**	**Time**	**Event**
Mar 06	Sun.	4:00 PM 5:30 PM 6:00PM	Top Secret Rosies: The Female Computers of World War II Film Begins (Free) The first few galleries reopen to those who viewed the film Revolution Tour
Mar 09	Wed.	6:00 PM 7:00 PM	Author Jane McGonigal in Conversation with NPR's Laura Sydell. Reality is Broken: Why Games Make Us Better and How They Can Change the World Member Reception (Museum Members Only) Program
Apr 06	Wed.	6:00 PM 7:00 PM	In The Plex: How Google Thinks, Works, and Shapes Our Lives. Author Steven Levy in Conversation with NPR's Laura Sydell Member Reception (Museum Members Only) Program (Free)

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

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