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Lemelson Center for the Study of Invention and Innovation

Computer Oral History Collection, 1969-1973, 1977

Interviewee:	Glenn E. Hagen
Interviewer:	Robina Mapstone
Date:	November 7, 1973
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 86 pp.

Abstract: Hagen was a Signal Corps officer in Europe during World War II and returned to obtain a master's degree at the University of Washington. He went to work at Northrop, where the Binary Automatic Computer (BINAC) was on order and Floyd Steele led a team working on the first digital differential analyzer, the MADDIDA. Hagen pointed out a flaw in one of Steele's counters and was transferred to another section where he invented a gas discharge tube known as the Trionode and a device later reinvented at Burroughs and sold as the Nixie tube. When Steele and his associates departed to form Computer Research Corporation (CRC), taking the schematics of the MADDIDA with them, Hagen, the engineer Chuck Williams, and a group of recent UCLA graduates, completed the MADDIDA 44-A, the first magnetic drum machine for commercial use. Although they modified Steele's design somewhat, their machine was ready before the CRC product. Bendix soon bought the computer division of Northrop. There Hagen designed the MADRIX, a matrix Converter that was never built. After a few months at Bendix, he was hired by the Swede Axel Wenner-Gren to advise on running the Long Island Railroad. His new firm, Logistics Research Corporation (later ALWAC Corporation built the Axel Wenner-Gen Automatic Computer (ALWAC), a general purpose computer featuring modular construction, relatively straightforward logic design, plotters purchased from Calcomp, flexowriter input/output, a modular turret, a magnetic drum with clock channels and a relatively low price. Hagen also envisioned a floating head for a magnetic drum, something similar to the later TRM Random Access Memory Counting Machine (RAMAC). In 1954, several staff members left Logistics Research; Hagen soon had a falling out with Wenner-Gren. With his wife Lorraine and Chuck Williams, he started Systematics. The firm manufactured converters, including one that connected NCR posting machines with IBM punched card machines. In 1956, Williams bought out the company. Hagen founded Typatape to make machines that converted paper tape output into punched cards. He later worked on an antigravity device and on photocopiers built by Smith Corona. Significant West Coast developments in computer science include Steele's use of

Boolean algebra in logic design, the digital differential analyzer, Hagen's invention of the magnetic head, the organization of hardware in the MADDIDA and the ALWAC, and integrated data processing--that is, conversion of data from one machine for use in another. People mentioned several times are Allan Beek, Lorraine Hagen, Bob Hofstrom, Vincent Niesius, Dick Russell, Floyd Steele, Axel Wenner-Gren, and Chuck Williams.

Citation: Computer Oral History Collection, Archives Center, National Museum of American History.

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Interviewee: W. Hall
Interviewer:
Date: No date
Repository: Archives Center, National Museum of American History
Description: No transcript

Abstract: See Joseph Henry Wegstein interview.

Citation: Computer Oral History Collection, Archives Center, National Museum of American History.

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Interviewee: Maurice Halstead

Interviewer: Richard R. Mertz
Date: June 23, 1973
Repository: Archives Center, National Museum of American History
Description: Transcript, 39 pp.

Abstract:

Citation: Computer Oral History Collection, Archives Center, National Museum of American History.

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Interviewee: Leon Harmon (1922-)

Interviewer: Richard R. Mertz
Date: May 20, 1971
Repository: Archives Center, National Museum of American History
Description: Transcript, 45 pp.

Abstract: Leon Harmon, born in 1922, was a radio serviceman and electronics hobbiest for 10 years before he decided to get the training needed to do neural modeling. In 1950, he went to work as a wireman on the Institute for Advanced Study (IAS) computer project and also began taking night courses in engineering at New York University. At Princeton, he observed John von Neumann's unusual behavior and talents and also tested components for the IAS, particularly RCA vacuum tubes used in the electrostatic Williams memory. Both the academic atmosphere and Julian Bigelow's stress on reliability and elegant design set a leisurely pace for the project. Extensive records of tube performance were kept by Jim Pomerene and Gordon Kent. Relations with the IAS were physically distant but formally cordial; Harmon describes two encounters he had with Albert Einstein. Important features of the IAS machine, in addition to its use of stored programs, were the Williams memory, internal logic, and reliability. In the last stages of construction, the more pragmatic Pomerene replaced Bigelow as chief engineer. Once the machine functioned, Harmon became an operator, working with those running problems ranging from classified topics to Kummer numbers. When the IAS project ended in 1956, Harmon went to Bell Laboratories, where he began continuing research on pattern recognition. People mentioned several times in this interview include Julian Bigelow, Albert Einstein, Herman H. Goldstine, J. Robert Oppenheimer, Jim Pomerane, and John von Neumann.

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Interviewee: R. Harper

Interviewer:
Date: October 9, 1973
Repository: Archives Center, National Museum of American History
Description: Transcript, 65 pp.

Abstract: See Greg Toben interview.

Citation: Computer Oral History Collection, Archives Center, National Museum of American History.

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Interviewee: Charles Harrison

Interviewer:
Date: June 21, 1972
Repository: Archives Center, National Museum of American History
Description: Transcript, 83 pp.

Abstract: See Argonne National Laboratories interview.

Citation: Computer Oral History Collection, Archives Center, National Museum of American History.

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Interviewee: Samuel Harvey

Interviewer:
Date: No date
Repository: Archives Center, National Museum of American History
Description: No transcript

Abstract: Interview not transcribed.

Citation: Computer Oral History Collection, Archives Center, National Museum of American History.

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Interviewee: Harold Hazen (1901-1980)

Interviewer: Richard R. Mertz
Date: December 15-16, 1970
Repository: Archives Center, National Museum of American History
Description: Transcript, 117 pp.

Abstract: Hazen, born in Illinois in 1901, spent his boyhood in small towns in Michigan, taking an early interest in telegraphy, books on electricity and building electric generators. Hazen entered the Massachusetts Institute of Technology (MIT) in the fall of 1920 to study electrical engineering. For his senior thesis he worked with graduate student Hugh Spencer and with Vannevar Bush on the analog representation of power networks, a step toward MIT's network analyzer. After a year's work at General Electric (GE) Hazen returned to MIT in 1925 as a graduate student, continuing research on simulating power networks. He mentions several fellow students, describes problems of limiting errors in network analyzers, and notes a graduate course he took with Bush on operational calculus. To solve differential equations raised in this course, Hazen extended the product integraph of H.R. Stewart and F.C. Gage to create a two-stage product integraph. Six years later the machine was modified and extended from 2 integrators to 6 and became the differential analyzer. Hazen describes the torque amplifier and lash lock on the differential analyzer and notes that a duplicate differential analyzer was built for ballistics work at the University of Pennsylvania. As a result of work in World War I and continuing association with the Navy Bush was most aware of problems of servomechanisms and fire control. Hazen also served as an engineer in the Navy Reserve from the mid-1930s. In mechanical computing devices, error increased with the torque required to read the output. The mercury contact used to control the output wheel on the product Intergraph was replaced by a torque amplifier on the differential analyzer and then by a servomechanism drive on either the curve tracer or the cinema Intergraph. Encouraged by Bush, Hazen wrote a prize-winning paper on maximizing the performance of servomechanisms. G.S. Brown and J. Forrester taught courses for naval officers at MIT on automatic control. In the 1930s Edward Bowles guided the reform of the electrical engineering curriculum at MIT. In 1938, Hazen succeeded Edward Moreland as department chairman. In 1942, he followed Warren Weaver as head of Division 7 (fire control) of the National Defense Research Committee. Hazen describes the organization and staff of the NDRC, particularly his division, and comments on separate work on gun sights by Stark Draper at the Instrumentation Laboratory. He continued work in the electrical engineering department during and after the war. People mentioned several times include Dick Adler, W.L. Barrow, E. Bowles, G.S. Brown, V. Bush, S. Caldwell, Karl T. Compton, J.B. Conant, F. Dellenbaugh, R.E. Dougherty, S. Draper, H. Edgerton, T. Fry, Murray Gardner, I. Getting, King Gould, T. Gray, D.C. Jackson, E. Moreland, Edward Poitra, O.R. Schurig, H. Spencer, Duncan Stewart, H.R. Stewart, W. Weaver, and K.

Wildes.

Citation: Computer Oral History Collection, Archives Center, National Museum of American History.

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Interviewee: Harold Hazen (1901-1980)

Interviewer: Henry Tropp
Date: February 29, 1972
Repository: Archives Center, National Museum of American History
Description: Transcript, 28 pp.

Abstract: Vannevar Bush devised an agreement which allowed him to complete his doctoral work under A.E. Kennelly quickly. Bush and Norbert Wiener sought to use the Heaviside expansion theorem in a mathematically acceptable way. Wiener also influenced the development of the cinema integraph. Bush's development of analog computers was more a result of his intellectual exuberance than an attempt to solve specific practical problems. In 1951 Hazen chaired the Japanese Engineering Education Mission, a group of American engineers who advised on Japanese technical education. That same year, he became dean of the Engineering School at MIT. Vannevar Bush and Norbert Wiener figure largely in this interview.

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Interviewee: Paul Herget (1908-)

Interviewer: Henry Tropp
Date: June 23, 1973
Repository: Archives Center, National Museum of American History
Description: Transcript, 72 pp.

Abstract: Paul Herget, born in 1908, first became interested in doing computations as an undergraduate at the University of Cincinnati, where he received his degree in 1931. He went on to earn a Ph.D. there in mathematics and astronomy in 1935, with a thesis on the orbit of the minor planet 1146. He stayed on the faculty at Cincinnati for most of his career. At the outbreak of World War II, Herget tried unsuccessfully to take up work on exterior ballistics begun by F.R. Houlton during World War I. Instead, he spent much of 1942 to 1946 working at the Naval Observatory under Wallace J. Eckert. Eckert produced the Air Almanac during the war and developed an automatic engine for measuring photographic plates when he went to head (?) an IBM laboratory in New York City afterward. Such projects had none of the character of make-work that had been found in the WPA Mathematical Tables Project At the end of the war, Herget went back to Cincinnati, where he and his colleagues developed several ingenious ways of combining IBM equipment. Host astronomers were not interested in the use of IBM computing techniques until the advent of the Selective Sequence Electronic Calculator (SSEC). However, Eckert began building the Naval Ordnance Research Calculator (NORC), a decimal computer with delay line memory, and Herget spent part of 1951-1952 in New York working on the machine. Once completed, the NORC was moved to the Naval Weapons Laboratory in Dahlgren, Virginia. It was used for cosmic ray computations, as well as for calculations of perturbances in the motion of minor planets, of the motion of the Poseidon and the navigational satellite Trident and of the orbits of Pluto and Neptune. In later years Eckert devoted much time to confirming Brown's theory of the motion of the moon and to calculating changes in lunar distance. These calculations proved of great use in the Apollo program. People mentioned several times in this interview are E. W. Brown, Wallace J. Presper Eckert, Byron Havens, Forrest Ray Moulton, Jan Schilt and Ben Wood.

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Interviewee:	Henry Herold and Jack Mitchell
Interviewer:	Robina Mapstone
Date:	April 10, 1973
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 88 pp.

Abstract:

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Interviewee:	Ted Hertz
Interviewer:	Robina Mapstone
Date:	April 4, 1973
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 83pp.

Abstract: See Allan Beek interview.

Citation: Computer Oral History Collection, Archives Center, National Museum of American History.

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Interviewee:	Frances E. (Betty) Snyder Holberton (1917-2001) & Jean J. Bartik (1924-)
Interviewer:	Henry Tropp
Date:	April 27, 1973
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 216 pp.

Abstract: See Jean Bartik interview.

Citation: Computer Oral History Collection, Archives Center, National Museum of American History.

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Transcript: **Link to transcript**

Interviewee:	Bernard Holbrook
Interviewer:	Uta C. Merzbach
Date:	May 10, 1969
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 14 pp.

Abstract: Holbrook began working for Bell Laboratories in 1930 in transmission research, developing electrical analog anti-aircraft fire control equipment, and with the switching research department. In 1957, Holbrook became head of the Computing Systems Research Department. This was Holbrook's first official association with computing. He discusses the early activities of computing at Bell Laboratories upon his arrival in 1930. Mentions Sam Williams of Bell Labs and his contributions to telephone switching systems and his design of a relay computer used by Bell in approximately 1940. Holbrook briefly comments on the Model 1 and its operation from 1940 to 1949 when it was replaced by the Bell Mod 6 computer. Also comments on the Mod 2, Mod 3, Mod 4, and Mod 5. Discusses various work done in conjunction with the government during the war years. Colleagues mentioned include George Stibitz, Sam Williams, Bill Maltiner, and Ernie Andrews.

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Interviewee:	Bernard Holbrook and Robert Dietzhold
Interviewer:	Richard R. Mertz
Date:	September 3, 1970
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 71 pp.

Abstract:

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Interviewee: Grace Murray Hopper (1906-1992)
Interviewer: Uta C. Merzbach
Date: July 1968
Repository: Archives Center, National Museum of American History
Description: Transcript, 37 pp.

Abstract: Grace Murray Hopper was born on December 9, 1906 in New York, New York. She graduated from the Hartridge School, Plainfield, New Jersey, in 1924. She attended Vassar College and earned a BA in 1928. Hopper continued her studies at Yale University where she earned an MA in 1930 and a Ph.D in 1934. Hopper's interest in computers began when she was an assistant instructor at Yale in 1931. At Yale she taught mechanical and architectural drawing, basic trigonometry and calculus, finite differences, and probability. Hopper herself audited courses at Yale to gain a broad knowledge and background information. By auditing, she was better able to speak to people who wanted to use computers and understand their needs. In December of 1943, Hopper joined the Navy and reported to midshipmen's school in April of 1944. She eventually became a mathematical officer with the US Navy, Bureau of Ordnance. From 1946 to 1949, Hopper worked at the Computation Laboratory, Harvard University with Howard Aiken's MARK I, which had been lent to the Navy. On the MARK I, Hopper computed coefficients of arc tangents and produced a Manual of Operation for the Automatic Sequence Controlled Calculator. Individuals mentioned frequently include Howard Aiken, John Mauchly, Richard Bloch, Harry Goheen, and Bob Campbell.

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Transcript: **Link to transcript**

Interviewee:	Grace Murray Hopper, 1906-1992
Interviewer:	Uta C. Merzbach
Date:	November 1968
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 11 pp.

Abstract: This interview begins in mid discussion and is a continuation of the July 1968 interview.

Hopper discusses running subroutines on the MARK I and the building of MARK II and MARK III. She comments on the differences between ENIAC and the work being done at Harvard.

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Transcript: **Link to transcript**

Interviewee: Grace Murray Hopper, 1906-1992
Interviewer: Uta C. Merzbach
Date: January 7, 1969
Repository: Archives Center, National Museum of American History
Description: Transcript, 18 pp.

Abstract: (This interview is in five fragments and appears to be missing a session.)

Hopper comments on her greatest achievements—making it easier for people to use computers, training young people to lead developments in the computer field, and the A-0 Compiler. She discusses the building of MARK II and the 1949 symposium—Aiken's conception—to get everyone together and talk about what was going to happen in the computing field. Aiken felt it was time to bring together all the developments and exchange information on the state of the art. The symposium focused on hardware, engineering, and specific problems. Because of this symposium there was more communication and more development occurred in the following years including the formation of the Association for Computing Machinery (ACM). Hopper comments on the design and building of the Computation Laboratory at Harvard and the colleagues she worked with at the lab. Hopper recalls the bug in MARK II and cleaning the machines of dust and dirt. She discusses the design of MARK III and the concept of plugging in sines and cosines as the program was written. Hopper left the Navy in 1946, but stayed at Harvard to help build MARK III. While at Harvard Hopper was a research fellow in engineering sciences and applied mathematics. By 1949 Hopper's contract at Harvard had expired and she took a job with Eckert and Mauchly. Colleagues mentioned frequently include Ed Berkeley, Richard Bloch, John von Neumann, John Mauchly, Harry Goheen, and Betty Holberton.

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Transcript: **Link to transcript**

Interviewee:	Grace Murray Hopper, 1906-1992
Interviewer:	Uta C. Merzbach
Date:	February 4, 1969
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 13 pp.

Abstract: Interview discusses Hopper's work for the Eckert-Mauchly group in 1949. Hopper took the position because she felt they were looking forward, envisioning much larger problems that the computer could solve. Comments on her work using the BINAC and the UNIVAC.

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Transcript: **Link to transcript**

Interviewee:	Grace Murray Hopper, 1906-1992
Interviewer:	Uta C. Merzbach
Date:	July 5, 1972
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 48 pp.

Abstract: Discussion of Hopper's involvement in producing a Manual of Operation for the Automatic Sequence Controlled Calculator under Howard Aiken at Harvard University. Comments on Howard Aiken frequently.

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Transcript: **Link to transcript**

Interviewee:	Robert J. Horn
Interviewer:	Richard R. Mertz
Date:	May 28, 1970
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 18 pp.

Abstract: (This interview was recorded on a Stenorette recording device at a speed slightly slower than 3 3/4 rpm.

Begins discussion of Jay Forrester as Director of the Digital Computer Lab and the building of a high speed, large scale digital computer which was to be used for simulation studies for the Navy. The major problem facing the computer was the storage of information in adequate quantity and accessing it. The storage mechanism used was the Williams tube, a cathode ray tube. Forrester would later commence his own experimental work to develop a better memory mechanism. Horn comments on patent issues involving Forrester, RCA, and the Research Council. Those mentioned are Jay Forrester, William Papian, and Jan Rajchman.

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Interviewee:	Joseph A. Horner
Interviewer:	
Date:	August 3, 1971
Repository:	Archives Center, National Museum of American History
Description:	No transcript

Abstract:

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Interviewee: Bernard Horwitz
Interviewer: Robina Mapstone
Date: February 7, 1973
Repository: Archives Center, National Museum of American History
Description: Transcript, 28 pp.

Abstract: Bernard Horwitz graduated from the University of Texas in 1948, with a bachelor's degree in electrical engineering. He then went to Stanford University to earn a master's in electrical engineering. In 1949, Howrwitz joined Continental Oil where he worked with techniques for simulating oil field performances using analog computing. Horwitz developed a piece of simulation equipment that could measure the pressure and flow distribution in the subterranean reservoir. He comments on meeting Stan Frankel, a consultant to Continental Oil, and his knowledge of computing systems. Discusses Frankel's creation of a diode matrix. Horwitz discusses the design, development, and building of the Continental Automatic Computer (CONAC). The CONAC went into use in 1956 and was nicknamed by the company Connie. Horwitz left Continental for Beckman Instruments where he went into the systems business and became Chief Engineer of their Systems Division. Horwitz then spent several years in scientific instruments and process instruments. In 1967, Horwitz joined SDS. Discusses various unrelated topics and colleagues who influenced the industry with their contributions. Horwitz cites the early tape transport as one of the major technological contributions to computing, and the moving head file. Frequently mentions Stan Frankel, Jim Cass, Cuthbert Hurd, and J. Presper Eckert.

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Interviewee: Alston S. Householder (1904-)
Interviewer: Richard R. Mertz
Date: July 20, 1970
Repository: Archives Center, National Museum of American History
Description: Transcript, 30 pp.

Abstract: Born in 1904, Householder studied philosophy and mathematics as an undergraduate at Northwestern University. He wrote his 1927 M.A. thesis on A.N. Whitehead at Cornell. He eventually abandoned plans to become a minister and decided to teach mathematics instead. He completed his doctoral work at the University of Chicago in 1937, teaching concurrently at Northwestern and then at Washburn College. After finishing a dissertation on the calculus of variations, he did postgraduate work at Chicago in biophysics under Nicholas Rashevsky and then joined the biophysics department. Householder's studies of the central nervous system were interrupted in 1944, when he agreed to go to Washington to advise on the training of gun sight operators. After World War II, he continued this work at the Naval Research Laboratory and eventually moved to Oak Ridge to work on reactor criticality problems. By 1948, he was the head of a separate Mathematics Panel there. Early the previous year Householder had attended the unveiling of the Mark I at Harvard and became convinced that Oak Ridge needed a larger computing facility. After considering bids from Raytheon, Reeves Instrument, Eckert and Mauchly, GE (for a copy of the Mark IV) and a contractor willing to copy the Standards Eastern Automatic Computer (SEAC), Oak Ridge decided to buy a copy of the Institute for Advanced Study (IAS) machine. This machine, the Oak Ridge Automatic Computer and Logical Engine (ORACLE), was made at Argonne under the supervision of the engineer Chuan Chu. While it was being built, mathematicians at Oak Ridge used CPCs, the Mark I, and the SEAC. The ORACLE first solved eigen value problems at Argonne in the summer of 1953 and was moved to Oak Ridge in February 1954. Demand grew rapidly, and mathematics majors were hired and trained as programmers. By 1956 the ORACLE was becoming obsolete. It was replaced by an IBM 704 shared with the gaseous diffusion plant and then by an IBM 1604A. People mentioned several times in this interview are Nicholas Rashevsky, John von Neumann, and Gale Young.

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Interviewee:	Bernard Howard and Harold Skramstad
Interviewer:	Henry S. Tropp
Date:	February 28, 1973
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 49 pp.

Abstract: This interview discusses the development of the computer in Illinois and other locations such as Northrop on the west coast and their Snark Missile Project.

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Interviewee:	Bernard Howard and H. Skramstad
Interviewer:	Henry S. Tropp
Date:	March 2, 1973
Repository:	Archives Center, National Museum of American History
Description:	Transcript, 82 pp.

Abstract:

Citation: Computer Oral History Collection, Archives Center, National Museum of American History.

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Interviewee: Cuthbert Hurd (1911-
Interviewer: Uta C. Merzbach
Date: April 15, 1969
Repository: Archives Center, National Museum of American History
Description: Transcript, 19 pp.

Abstract: Cuthbert Hurd was born on April 5, 1911 in Estherville, Iowa. He received his BA in mathematics from Drake University in 1932, his MS in mathematics from Iowa State College in 1934, and his Ph.D. in mathematics from the University of Illinois in 1936. His post doctorate work was done at Columbia University and the Massachusetts Institute of Technology (MIT). This interview begins with Hurd discussing his academic career and how he became a mathematician. He briefly sketches his professional career and comments on his work at Oak Ridge dealing with the installation of an IBM 602 to start the data handling problems. This lead to Hurd's association with several people from IBM inlcuding Wallace Eckert, George Gross, and Watson Senior. In 1949, Hurd joined the staff of IBM to evaluate the combination of the 603 and the 405. Hurd also began to recruit young engineers and mathematicians for IBM. He eventually formed the applied science department within the company. Briefly comments on IBM's effort during the Korean War years and their design and development of the defense calculator. Colleagues mentioned include Alston Householder, John von Neumann, Jerry Haddad, Mina Rees, John Curtis, Franz Alt, Richard Clippinger, Henry Wallace, and John McPherson.

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Interviewee: Cuthbert Hurd (1911-)
Interviewer: Robina Mapstone and Henry S. Tropp
Date: October 11, 1972
Repository: Archives Center, National Museum of American History
Description: Transcript, 91 pp.

Abstract: This interview is missing page 87.

Begins discussion with the Atomic Energy Commission at the Oak Ridge facility and the problems that Hurd needed to solve there. Hurd had experience making computations on punched card machines. One of the problems involved the simulation of the gaseous diffusion plant, K25. Hurd designed a procedure using punched cards, sorters, collators, reproducers, tabulators, and a machine called the 602. Ultimately Hurd and Oak Ridge received IBM's 604. This work led Hurd to seek a position with IBM. Hurd comments on the individuals who worked for IBM, the controversy with Northrop and the announcement of the Card Programmed Calculator (CPC). Briefly discusses von Neumann's consulting on the simulation of the gaseous plant K25 at IBM in the fall of 1949 and various other colleagues and the projects. Touches upon the west coast activities of IBM, the 701, the later 700 series machines, and anecdotes. Colleagues mentioned include Wallace Eckert, Ben Wood, Herb Grosch, John von Neumann, Ralph Palmer, Jerry Haddad, George Brown, and Rex Rice.

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Interviewee: Harry Douglas Huskey and Mrs. Huskey (1916-)
Interviewer: Henry S. Tropp
Date: March 9, 1972
Repository: Archives Center, National Museum of American History
Description: Transcript, 46 pp.

Abstract: Harry Douglas Huskey was born in 1916, in Bryson, North Carolina. He graduated from the University of Idaho in 1937 with a BS in mathematics and physics. He later went to Ohio University where he earned a MA in mathematics and in 1943 received his Ph.D. mathematics from Ohio State University. Tropp begins the discussion with Huskey's recollections of Tibor Rado. Rado was a professor at Ohio State when Huskey was working on his Ph.D. there between 1939 and 1943. Huskey did his dissertation under Rado on the topic of Lebesgue surfaces. Huskey describes Professor Rado's time in a Siberian military prison, his hijacking of a train from Siberia to Vladivostok, and ultimately his return to Hungry. Rado finally settled at Ohio State where he was a member of the Department of Mathematics and eventually chairman. He taught real variables, things related to the area of surface, and point set topology. Huskey himself went to the University of Pennsylvania in 1943 to teach in the Math Department. Huskey's first introduction to computers came when he began working at the Moore School for extra money. Under Arthur Burks, Huskey was to report on how the Electronic Numerical Integrator and Automatic Computer (ENIAC) worked. In 1946, Huskey left the Moore School for the National Physical Laboratories (NPL) in England to work on the Automatic Computing Engine (ACE) project. Huskey briefly comments on Turing and his contributions to the project and his personal accomplishments. Huskey later joined the National Bureau of Standards (NBS) in 1947 where he helped start the Standards Eastern Automatic Computer (SEAC). In December of 1948, Huskey left NBS for the Institute of Numerical Analysis (INA) at UCLA to build the Standards Western Automatic Computer (SWAC). Discusses some of the people—Bill Gunning and Harry Larson—who worked with him on the SWAC. Recalls some of the problems encountered and the solutions used to solve them. Comments on Professor Robinson of Berkeley's Math Department who ran a program to compute Mersenne primes on the Standards Western Automatic Computer (SWAC) and a project built by Professor Morton, an electronic magnetic drum type machine. While at INA, Huskey took a year's leave to help Wayne State University set up their Computer Center from 1952 to 1953. At Wayne State, Huskey designed the Bendix G-15 drum computer. Touches upon the development of independent computer science departments and its emergence as a separate discipline. Colleagues mentioned: John von Neumann, Turing, Maurice Wilkes, James Wilkinson, Hartree, Berkeley Rossiter, Edward Condon, and J. Presper Eckert.

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Interviewee: Harry Douglas Huskey & Mrs. Huskey
Interviewer: Robina Mapstone
Date: April 19, 1973
Repository: Archives Center, National Museum of American History
Description: Transcript, 45 pp.

Abstract: (This interview expands upon the discussion of the Institute for Numerical Analysis (INA) in the preceding interview of March 9, 1972.)

Begins discussion with Huskey's involvement with the Institute for Numerical Analysis (INA) and how how it influenced computing and people. The INA was founded to foster work in computational mathematics and with the idea that new computing machines could do more interesting and significant things. At INA, Huskey helped build the Standards Western Automatic Computer (SWAC) which was dedicated in August of 1950. The SWAC was used primarily by people at the Institute and local aircraft companies. The Institute contributed a significant amount of numerical research, and made programming computers easier. The SWAC itself contributed it=s unique design from the point of view of the command structure, it had space saving programs. The SWAC also demontsrated that a computer could be built and by a smaller establishment and without a great deal of money. The INA also afforded mathematicians an opportunity to come and use the SWAC to run programs. Recalls individuals who did early work in programming languages such as SWAPAC, PACT, and BACAIC. Comments on his time at Wayne State University where he worked on the Bendix G-15, its programming language, INTERCOM, and other characteristics that set it apart from the EDVAC and SWAC. During Huskey=s tenure at INA, he maintained a relationship with Electrodata in Pasadena where he lectured once a week and he was involved in some consulting jobs. Comments on his experiences in other countries where he helped set up computers. Those mentioned in the interview include John Curtiss, Sam Alexander, Harry Larson, Ragnor Thorensen, Bill Gunning, Ed Lacey, David Rutland, Mike Malkenoff, Joe Weizenbaum, and Floyd Steele.

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