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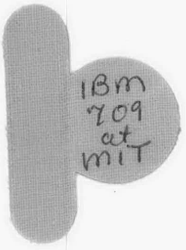
The Massachusetts Institute of Technology today reported a statistic of the times:

More than 2,000 students and faculty members of 32 New England colleges and universities have learned how to use one of the world's largest high speed digital computers since the M.I.T. Computation Center was opened in June, 1957.



These figures were contained in a report on the first three years of operation of the M.I.T. Computation Center. Established by International Business Machines Corp. and M.I.T. for education and research in the New England schools, the Computation Center today also marked the beginning of operations with a new machine -- an IBM 709 computer.

Installation of the new computer at M.I.T. was observed in brief ceremonies and a luncheon yesterday for representatives of IBM and M.I.T. The use of the $2,500,000 IBM 709 and its predecessor, an IBM 704, was contributed by the company as part of its program of assistance to education and academic research.

With the departure of its workhorse IBM 704, which had served since June, 1957, the staff of the Computation Center reviewed some salient parts of the record:

1. In the last three years, slightly more than 1,000 different problems have been run on the IBM 704. These problems represent about 8,000 hours work with the machine.

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2. Use of the computer doubled in three years and probably would have tripled if more time had been available. Since last fall, it was in use on a round-the-clock basis.

3. As a part of space history, the machine at M.I.T. was one of the first to calculate the orbit of Sputnik I. It was put to work on this problem in connection with the "Operation Moonwatch" optical tracking of the Smithsonian Astrophysical Observatory.

4. In computer science, the IBM 704 enabled M.I.T. scientists to devise new "languages" with which to communicate special problems to computers. Among these developments are one called COMIT, constructed for machine translation and research in human languages. Another, with the name of LISP (for list processor), permits operators to instruct a machine to solve problems in mathematical logic. A third new language is DYNAMO, which is used in simulation of industrial and business situations.

What kinds of problems has the computer tackled? Dr. Philip M. Morse, professor of physics and director of the Computation Center, said they include accounting, nuclear physics, psychology, meteorology, business cycle prediction, physiology, astronomy, public medicine, and game playing.

Sample problems run on the 704: Calculation of the thermonuclear reactions in stars by Professor Fred Hoyle, of Cambridge University, prominent British cosmologist; simulation of automobile traffic flow, and estimation of short-term changes in demand in the poultry market.

At the time of its installation, the IBM 704 was the only large scale data processing system of its type devoted exclusively to education and research. M.I.T. is now one of only two universities which has an educational and research

computation center equipped with an IBM 709. In addition, about 24 research assistantship grants are made each year by IBM to attract graduate students to the field of computer science and encourage them to become specialists. About half of the grants are made at M.I.T. and half at the other cooperating institutions.

Greater efficiency in operation is the advantage of the new 709 over the 704, according to Loren Bullock, IBM Representative at M.I.T. With four independent channels for getting information into and out of the new computer, the 709 can overlap the functions of input, computing and output. The machine can perform from 10,000 to 40,000 operations a second and has a high-speed magnetic core memory that can hold 32,768 computer "words."

Research is in progress to provide the computer with several parallel input-output channels, so that several users can share the use of the machine thus considerably increasing its flexibility and availability.

What new educational advantages can be expected from the growing use of the Computation Center? Dr. Morse said: "By next academic year the majority of the students entering M.I.T. will learn how to use a digital computer before they obtain their undergraduate or graduate degrees."

Dr. Morse also announced that Dr. F. J. Corbato has been appointed associate director of the Computation Center. Dr. Corbato, received a bachelor of science degree in 1950 from California Institute of Technology, and a doctor's degree in 1956 from M.I.T. He has been with the Computation Center since 1956.

New England colleges and universities that cooperate in operation of the Computation Center are: Amherst, Babson, Bates, Bennington, Boston College, Boston University, Bowdoin, Brandeis, Brown, Clark, Colby, University of Connecticut, Dartmouth,

Goddard, Harvard, University of Maine, University of Massachusetts, Middlebury, Mt. Holyoke, University of New Hampshire, Northeastern, Providence College, University of Rhode Island, Simmons, Tufts, University of Vermont, Wellesley, Wesleyan, Williams, Worcester Polytechnic and Yale.

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