IBM 7040 Computer To Increase Rice's Electronic Brain Power

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Computer facilities on the Rice campus will be greatly increased in March, upon the arrival of an IBM 7040 high-speed digital computer. Eventually the machine will be housed in the Space Science building, but until that structure is built the 7040 will be located in the southwest wing of Abercrombie Laboratory, which has been refurbished to accommodate it.

The commercial rental cost of the computer is $25,000 per month. For the last eighteen months IBM has been giving colleges a 20% discount, but Rice will receive a 60% discount because it put in an order before the present rental policy was made.

$65 An Hour

In addition to the fees charged by IBM there will be other expenses: salaries for key punch personnel, programmers, and operators—the machine is to be attended all the time. Operational supplies such as cards and printer paper may alone cost around $1,000 a month.

Professors will pay the University for computer time with funds from research grants. The exact amount to be charged will be based on total expenses; at the moment the fee is estimated at $65 an hour, but might be as much as $80 an hour.

"We suppose that the installation may operate at a loss in the initial phase," said Dr. Henry H. Ratchford, Chairman of the Computer Committee and also Professor of Mathematics and Computer Science.

Will Use Fortran

The IBM 7040 is to be operated as an on-line computer so that cards are read directly into it, and information is printed out without the intermediate use of magnetic tape. "Card reading can also be done as a slave operation by another computer," Dr. Ratchford said.

In addition to card input-output equipment there are two other special features of this installation in comparison to the Rice computer: the 7040 uses Fortran language and has interchangeability of computer tapes with other IBM machines.

For several years some Rice men have journeyed to College Station to use a Texas A & M computer, according to the report of Mr. Walter Orverahl, the acting director of the Rice computer project. Others just used the small machines on campus or the computer which was built here between 1957 and 1960.

1620 Too Slow

The Physics Department has a 1401 which it uses for processing its data; access to the IBM 1620 is open to all and in fact is used by engineering undergraduates as a tool for doing homework.

"The IBM 1620 is several hundred times slower than the 7040 and has a more limited diagnostics Fortran language," Dr. Ratchford pointed out. The home-built Rice computer would take perhaps three times as long to solve simultaneous equations as the IBM 7040, but its command structure was designed for other purposes in addition to regular function: computer science research can be conducted on the custom-made machine by altering the circuitry.

Plan To Expand

Dean of Engineering F. R. Broten acknowledged that the Rice computer has a relatively small memory and in fact not much more can be held in its 8,000-word storage unit. Plans are now being made to add more 8,000-word blanks; "eventually we would like to have a storage for 32,000 words — that would make the Rice computer quite a respectable University computer."

At the same time that Rice is upgrading its computer facilities, A & M is doing the same in making its 709 into a 7094. "Before we get ours fixed up they will have a more powerful machine by a factor of five or six," Dr. Ratchford observed.

"Our facilities will be good, but if we are loaded and someone has a big program he might want to take it to A & M"