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Memorandum M-2456

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Division 6 - Lincoln Laboratory
Massachusetts Institute of Technology
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By: R. R. Everett
Date: 2/1/60

SUBJECT: BIWEEKLY PROGRESS REPORT FOR AM/FSC-7
To: J. W. Forrester, R. R. Everett, Division 6 Group Leaders
From: A. P. Kromer, P. J. Gray
Date: October 2, 1953

Floor Layout for Building A

A proposed floor layout for the basement of Building A has been drawn up and is being circulated for comments.

Cooling Equipment

Based on information given to Francis Associates previously, they have reported that it will be necessary to arrange to have air flow completely around each of the vacuum tubes in the pluggable unit rack module if the desired bulb temperature is to be achieved. Vertical flow of air past the sides of a stack of tubes will not provide sufficient cooling. Changes in pluggable unit design are underway to provide for the recommended type of air flow. In view of the proposed method of having air flow outward from the tube chassis, the need for front doors on the equipment may again be reviewed, for the space between the tube chassis and the front door will not contain a controlled air stream. This will be discussed further with the IBM mechanical design section in the near future.

Arithmetic Element & Control

A final proposal for improved block schematic layouts of the left and right arithmetic elements is being drafted at IBM. It is hoped that this will fulfill all requirements calling for greater detail on these drawings. This detail includes factors such as pluggable unit division, their pin number ties, wire terminations and other modular identification.

Efforts to standardize pluggable units for the register section are still in progress. Although definite conclusions cannot be made until basic circuitry has been frozen, it is felt that a high-speed flip-flop, two gate tubes and four cathode followers may be resolved into a standard pluggable unit.

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Internal Memory

Further decisions have been reached regarding the design of the X and Y crystal matrices. M-2428 is being issued covering these decisions in detail.

The question of air cooling the core planes has been investigated, and it appears that a satisfactory arrangement can be made to maintain the cores at the desired operating temperature, without affecting the cooling of the remainder of the machine.

Memory Cores

General Ceramics has received an order for 200,000 cores from IBM. The first shipment of 20,000 cores was ready Sept. 23. The order is to be completed by November 15.

Radar Inputs

At a recent meeting with representatives of Bell Telephone Laboratory and A.T.&T. Company people from Project Lincoln and Project High were advised of the specifications for telephone lines which should be used as design criteria for equipment associated with transmission over phone lines. M-2436 will be issued summarizing these requirements. As a result of this discussion, it is necessary to change the SDV receiver design somewhat, since the telephone lines will be of less high quality than previously estimated. No time delay is expected to result, however.

A testing program for the radar mapper and the SDV demodulator is being worked out with Division 2 and IBM. A set of tests will be proposed by E. S. Rich of Group 61, who will also be available for judging the performance of the mapper when these tests are applied.

Group 24 delivered a SDV receiver-demodulator to IBM for use in the development of input equipment.

Display System

At a recent meeting in Poughkeepsie, agreement was reached regarding the switching logic for Drums II, III and IV. The proposal agreed upon is outlined on IBM drawings No. 13193, "Output Switching Logic for Drums II and III," and No. 13293, "Output Switching Logic for Drum IV."

Discussions concerning the expanded display which is to be built into the system indicate that an analog method of producing this display would probably be simpler and require less equipment than a digital method. An investigation of methods of producing an analog display of sufficient quality is being given highest priority. However, a new proposal for a digital method which will minimize additional equipment is to be presented to the display group.

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