

Memorandum M-2427

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Division 6 - Lincoln Laboratory
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Cambridge 39, Massachusetts

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SUBJECT: BIWEEKLY PROGRESS REPORT FOR AN FSO-7
To: J. W. Forrester, R. R. Everett, Division 6 Group Leaders
From: A. P. Kromer, P. J. Gray
Date: September 18, 1953

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By: R. Everett
Date: 2/1/60

Floor Layout for Building A

Layout of the equipment in Building A is continuing as rapidly as information on development work can be assembled and correlated to show the physical size of the necessary racks and frames. A scale model of the building will be made in the near future to help in the final layout.

Cooling Equipment

Preliminary discussions with the cooling-equipment engineers have reaffirmed the seriousness of the problem of fitting this equipment into the basement of Building A in Lexington. Recommendations will be drawn up as soon as the consultants are able to furnish approximate dimensions on the air handling and refrigeration equipment.

Arithmetic Element and Control

Agreement has recently been reached covering the loads that can be driven by gate tube circuits, pulse amplifier circuits, and register driver circuits. This action permits IBM to start to finalize the block schematic work on the central portion of the machine.

The pluggable unit is still undergoing redesign in order to provide additional strength, and to incorporate changes arising from certain equipment cooling considerations.

IBM is currently working on a series of written descriptions of all registers and sections of the Left & Right Arithmetic Elements. These will ultimately be issued as H-Notes.

Initial tests at IBM on high-speed flip-flops built with the etched wiring and dip soldering technique look very hopeful, and it is expected that this technique will be used.

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Maintenance and Operation Console

A preliminary mechanical design of the console is underway at IBM. Experiments have been undertaken to determine the feasibility of photographing the neon lights using a 35 mm and a Land camera. Results with the 35 mm camera were good, but Land camera results were not too successful.

Internal Memory

Agreement was reached on many XD-1 memory questions in meetings with IBM, and detailed design work can now go ahead. In general, mutual agreements were reached regarding the memory plane design (i.e. packaging), plane wiring sequence, the general memory layout and floor plan (a rack 16 feet long with the shower stall to house the memory planes themselves), and a sketch of block diagrams and timing diagrams. Also, circuits for sense amplifier and digit plane driver were generally agreed upon, but the exact values of certain of the components are still to be determined by experimentation. These decisions are discussed in more detail in MIT Memorandum M-2405.

Tape Card and Switch Inputs

The manual input switching matrix block diagram is completed. Circuit design and pluggable unit arrangements are now in process.

Output System

The establishment of February 1, 1954 as the completion date for specifications for the output drum will permit Group 61 to participate to a greater extent in the preparation of these specifications, and also will permit more experience with the Cape Cod System to be utilized.

A series of meetings with Group 24, which is engineering the devices for the ground-to-ground communication is to be started. The first two subjects will be crossteling and automatic height finding data handling.

Display System

The study of the power supply specifications recently furnished by IBM raises a question regarding the adequacy of the high voltage supply for the display system if the final decision is to use the Charactron tube in the large display console.

Later this month a group from MIT and IBM plans to visit Consolidated and other companies on the west coast. The purpose of the visit is to survey the situation regarding Charactrons from the standpoint of a) the circuits with which they will work, b) the availability of tubes should it be decided to use them, and c) the schedules on which a number of tubes could be procured.

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Display System (Continued)

Plans are underway to have a matrix from the Charactron tube furnished to Hughes Aircraft to have it built into a cathode ray tube having the special surface which provides long-time storage. This tube is being considered for use in the digital information display.

IBM is planning to centralize their display development work in the Vestal Laboratory at Endicott, where the work will benefit from experience with display equipment for other IBM projects.

Signed: _____

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