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Memorandum M-2696

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Division 6 - Lincoln Laboratory
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

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SUBJECT: Group 62 Section Leaders Meeting -- February 23, 1954
To: Division 6 Group Leaders; Group 62 Staff Members
From: A. P. Kromer
Date: February 24, 1954

Abstract: MIT has started an increased program of assistance in connection with memory design. All future core testing is to be done at IBM. Charactron tubes are to be secured from Convair for XD-1 and XD-2.

1. Memory

In line with the agreement to have MIT personnel assist IBM with the engineering work for this item, Guditz spent two days last week at Poughkeepsie. He will work with them in connection with the changes that are to be made to modify the frame built for the IBM array tester so as to make it suitable for use as an array frame in XD-1.

A meeting will be held later this week at Poughkeepsie to discuss specifications for the memory tester. Papian and others in his group will attend.

MIT has tested approximately 110,000 cores for the XD-1 memory. Of these approximately 70% were considered acceptable. All have been returned to IBM where the balance of cores required for one bank of memory for XD-1 have been procured and tested. IBM is in the process of ordering cores for the second bank of memory for XD-1 from General Ceramics who are still the only production supplier for this item.

Capacity of core testing facilities at IBM is such that not much if any additional core testing for XD-1 and XD-2 will be done at MIT.

2. Power

Purchase orders for the MG sets for the XD-1 system are in the hands of the IBM purchasing department. It is expected that these will be placed on the vendor by March 1.

The question of the addition of a casing around the MG sets to obtain more effective air cooling is presently being investigated. There is some added cost for this feature but this may be offset by reduction in the amount of ventilating equipment required.

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3. MTC

Certain minor systems problems exist but all indications are that both core memory and drum memory are working satisfactorily. The drum has ten digits in each of two fields now operating.

4. Display

At a meeting at Poughkeepsie last week IBM agreed to proceed immediately with placement of a purchase contract on Convair for approximately 120 19-inch Charactron tubes which will be required for XD-1 and XD-2. In the interest of developing an alternate second source of supply for subsequent production requirements IBM will continue their investigation of other suppliers.

A program is planned to have Walker Thomas of IBM work with Group 61 (C. Grandy) to secure detailed information regarding the number, kind, and designation of switches to be provided for each display console.

A joint meeting regarding design specifications for the area discriminator unit led to the conclusion that this would be a standard type display console. There will be two in each FSQ-7 Central; one for automatic initiation purposes and the other for handover. It is planned to have the program switch between these two units on alternate scans.

5. Circuits

The discussions regarding development of a way to simulate aged tubes in circuit performance measurements led to the conclusions that it would be more practical for circuit designers to obtain data regarding the output of the circuit under conditions which vary the voltage for every electrode in each tube, under application of a marginal check voltage, and with operation of extreme limit tubes. IBM will issue a report covering more details on this matter.

Gillette spent some time at IBM working with them on development of a test program for delay lines under conditions which they will be exposed to in the XD-1 system.

6. Outputs

A joint IBM-MIT meeting on February 16 reviewed the proposal for design of the black boxes to be associated with the output system. Results of this meeting have been circulated for comment by the EDO-SO. It is expected that the specifications for these units will be written up by Hopkins and Jeffrey and issued as M-2697 approximately March 1 for EDO-SO concurrence and subsequent approval.

Group 62 is engaged in circuit development for the modulator and demodulator for output data transmission. Group 62 (Aronson) is setting up to do the packaging design for this equipment. Since IBM will not construct this material it will have to be built or subcontracted by Lincoln.

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7. Lincoln Approvals

- A. Test memory approved in letter of February 19, 1954.
- B. Marginal checking for Central machine approved in letter of February 16, 1954.
- C. EDO-SO concurrence was reached for design specifications on maintenance console, power supply system, and area discriminating unit.

Signed:

A. P. Kromer
A. P. Kromer *AK*

APK:hpm

cc: J. W. Forrester
R. R. Everett

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