

April 12, 1957

MEMO TO: Mr. S. W. Dunwell

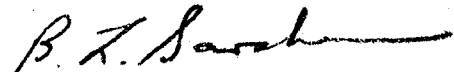
SUBJECT: Specifications for the Exchange

REFERENCE: Your memo to H. K. Wild dated April 4, 1957

The following comments are made with respect to the referenced memorandum on the Exchange specifications.

1. The memorandum indicates that present Exchange is to be built with Los Alamos money and is to be delivered to them. We outlined the Exchange to Los Alamos personnel the first part of February, with the request that we review it with them on March 1. There has been no contact with Los Alamos personnel since the February meeting. These specifications should be reviewed with them at the earliest possible date.
2. The specification of the 155 cpm punch (using the 535 mechanism) may not be correct. In a recent visit to Endicott, Mr. Jack Gibson observed that the special production of this device is limited to a total of 50. A model of a 250 cpm punch will go to product test by June 1957. It is hoped that this will replace both the 535 and 537 punches. In view of these facts and in view of a need for the most accurate system, it may be better to consider a 100 cpm (523) pending the availability of a 250 cpm punch. (I have asked Mr. Gibson to send you a copy of his trip report).
3. We should realize that two 500 lpm printers are not equivalent to one 1000 lpm printer on Los Alamos type applications. Most of the printing requirements result in needing the highest capacity of printing in relatively short periods of time. The down-time on the 720 is excessive. However, there appears to be little else that can be done at the present time.
4. If 729 tapes are to be considered an integral part of the system and the exchange is to be restricted to eight-bit bytes, then a converting unit capable of matching six and eight-bit bytes must be provided. The goal of eight-bit bytes implies system input-output equipment capable of operating normally with eight-bit bytes. I feel strongly that a converter must be considered a part of each I/O unit normally operating with the system, if a converter is required through byte incompatibility.

5. Considerable thought has been given to interrogation units by several people on the Stretch program. It would appear that some advantage should be taken of this work with respect to the typewriter unit. It would also appear that considerable work would have to be done in a low-speed I/O area in order that appropriate space might be left in the exchange box.
6. The high-speed disk memory which has been specified does not require any of the circuits of the exchange being specified.
7. The subject of error correcting and detecting codes is an extremely important one. The interaction between the automatic correcting system, the programmer and the system operation must be considered quite carefully.
8. The principle that individual input-output units will not be equipped with plug boards or other special devices is a good one. The application of this principle probably should be investigated quite carefully with respect to the operation and use of each individual input-output device within various machine system.



B. L. Sarahan

BLS:jv

cc: Dr. W. Buchholz
Mr. C. E. Frizzell
Mr. R. A. Gregory
Mr. W. J. Lawless, Jr.
Mr. J. C. Logue
Mr. W. D. Winger
Mr. H. K. Wild
Mr. D. W. Pendéry