

POUGHKEEPSIE

June 27, 1957

EXCHANGE FILE MEMO

SUBJECT: Meeting on Basic and High Speed Exchange

On Tuesday, June 25, 1957 a meeting was held in Mr. Mussell's office for the purpose of discussing the performance specifications and organization of the Basic Exchange and to discuss some of the problems of High Speed Exchange communications with the main memory.

Those in attendance were:

Messers: R. Blosk
W. Buchholz
J. D. Calvert
J. Cocke
R. P. Fletcher
E. Foss
L. E. Kanter
R. E. Merwin
H. A. Mussell
J. H. Pomerene
W. Stringfellow
H. K. Wild
W. Wolensky

The general performance characteristics as described in Exchange Memo No. 20 were explained and discussed. It was decided that there would be no departure from the performance levels and design objectives presented unless further analysis of system requirements or design criteria resulted in sufficient and positive reasons for so doing.

The timing problems arising when incorporating the operation of the High Speed Exchange into the system were next discussed. It appears that these problems are most severe when the High Speed Exchange is operating the High Performance tape at the speed of 100x727 speed in simultaneous Read/Write mode.

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Schemes involving (a) extra buffering in the High Speed Exchange or in the memory bus with additional timing and control, (b) anticipation circuitry with lockout features to prevent the instantaneous references to any one memory from exceeding the limit, (c) restrictions on simultaneous operation of Exchanges, (d) allocation of memory blocks to Exchanges to prevent conflicts, (e) reducing somewhat the word rate of High Speed Tape (f) suitable combinations of the foregoing, were introduced as possible solutions to the problem.

After discussion the following approach to the solution was agreed upon. A High Speed Exchange and Memory Bus will be designed in a straightforward and economical manner foregoing the use of complex and expensive timing and buffering techniques. Influence of the word rate of the High Speed Exchange upon the Basic System will be minimized. The limit on the word rate of the High Speed Exchange imposed by the system designed to the above criteria will be reflected in the upper bound of the word rate of the High Performance units connected to the High Speed Exchange. Any possible reduction in the tentatively proposed word rate of the High Performance Tape should be minor. It is recognized, however, that 100x727 speed appears to be just over the break over point which results in a step increase in the cost of coupling the High Performance Tapes to the system at a speed of somewhat less than 100 times 727 speed.

The specifications of the High Speed Exchange and memory bus will be presented in a meeting in the near future.

Another problem discussed was the influence of the Hamming Check stations upon the system. A meeting was scheduled for Thursday, June 27, to discuss the situation.



H. K. Wild

HKW:ps

cc: All those present and
S. W. Dunwell