MEETING OR CONTACT REPORT

Date of Report: June 19, 1958

Organization & Location:	Date: June 16, 1958
BuShips, BuShips Building, Fort Mead, Maryland	Reported By: H. G. Kolsky
Project:	Department: 749
STRETCH-HARVEST	Follow-up Date:

PERSONNEL PARTICIPATING:
(Place asterisk next to those on distribution list. Other distribution show at end of report)

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The meeting was called to discuss the results of the HARVEST Timing Simulator runs which have been made during the past month.

Mr. Willard suggested that since there happened to be a class on HARVEST meeting that morning that we give our report before the whole class. (This accounts for the size of the group present.)

At a meeting held May 21, 1958 (Ref: Meeting Report, H. G. Kolsky, May 27, 1958) a discussion was held concerning the possibility of altering the SIGMA timing simulator to evaluate the HARVEST (non-streaming) performance. A list of problems was prepared at that time for which performance figures were desired. After the meeting Messrs. Kolsky and Cocke made the necessary changes in the SIGMA Simulator and the problem runs were started. A preliminary report (Ref: Letter on Harvest Simulation, N. J. Blazensky, June 4, 1958) was made two weeks ago.

Since the results presented will be described in detail in a forthcoming report, I will give only an outline of what was presented here.

A total of 25 Runs were made which simulated approximately 170 separate combinations. The variables studied in the runs were:

1.   Problem Type

2.   Field Length of Operands

3.   Fields crossing word boundaries vs being in separate words

4.   The effect of the High Speed Exchange and Medium Speed Exchange on the computing speed.

5.   The effect of putting Data in Fast Memory, Instructions in Main Memory, both in Fast, or both in Main.

6.   Number of Main Memories.

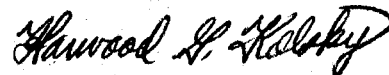Qualitatively the most significant results were:

1.   The short field lengths are most sensitive to all the system configurations, but are not seriously effected by memory conflicts, etc.

2.   The crossing word boundary cases take about 1.5 us longer per operation than the separate word cases.

3.   The computer is able to keep the arithmetic unit going even under a very heavy barrage of I/O transmission. (rates far beyond any presently postulated).

4.   The Fast Memory improves performance mainly by the amount of its shorter read-out time.

There was also some discussion of programming difficulties, floating point performance, etc.

The following additional runs were requested for 6-bit additions:

1.   Case in which data and instructions are in Fast Memory, Exchanges are reading and writing in Main Memory.

2.   Case in which data is in Fast Memory, instructions in Main Memory, Exchanges in Main Memory.

Mr. Willard also expressed interest in getting an approximate quantitative measure of the System's performance vs its "complexity" (e.g. extra levels of look-ahead, etc.)

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