June 5, 1959

MEMORANDUM TO: 1401 File

SUBJECT: Change in Control for Recomplementing

The process of recomplementing a "B" field, when a change of sign occurs, may require that the B-MAR reverse-scan the B-field until the word mark of the next-right field is encountered, and then forward-scan and recomplement.

A new scheme will be adopted to replace the above process; the B-MAR will now reverse-scan to the sign of the B-field (units position) and then forward-scan to recomplement.

In order for this process to work, the sign of the B-field must be readily identifiable. This will be accomplished by an initial, automatic setting of the sign of a positive B-field to A-B bits whenever a positive A-field is subtracted from the B-field, or when a negative A-field is added to the B-field.

If the operation does not require a change of the B-field sign, than recomplementing will not occur and the B-field will retain the A-B bits for positive sign.
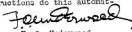
If the operation does require a change of the B-field sign, then recomplementing will occur, and the sign of the B-field will be set to B-bit only.

Also, if the sign of a negative B-field should change as the result of an ADD or SUBTRACT operation, the (positive) sign will be set to A-B bits.

As a result of this new mode of operation, the following should be noted:

An order for the recomplementing process to work, zone-bits cannot be carried in accumulators (in which recomplementing may occur) in other than units and high-order positions.

The sign must be stripped from the units positions of these accumulators when the contents are to be printed. The EDIT and MOVE AND ZERO SUPPRESS instructions do this automatically.

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