Appendix K   March 5, 1965

TO: Robert Graham
FROM: J.H. Saltzer
SUBJ: On Providing a Keypunch Facility for the 636.

In the period before a time-sharing supervisor is operating on the 636 system, there will be a need for the equivalent of a keypunch in order to write 636 GEM programs. At Project MAC, this keypunch can be easily provided by the 7094 time-sharing system; thus utilizing the powerful CTSS editing facilities.

It is suggested that the TYPSET command, which has proven to provide a very usable editing language, can be easily modified to act as a keypunch facility. This command program has been carefully organized in such a way that the main editing program does not depend in any way on the character set being edited, or on the format of character storage. Instead, short MAD or FAP-coded modules handle all format processing. For example, to change TYPSET to read and write files containing four 8-bit characters per word requires only a trivial reassembly of one FAP subroutine, and reloading of the command. To change output format from line-marked records, to records separated by carriage return characters requires replacement of one module with another off-the-shelf module (which has already been coded for another purpose).

More elaborate features, such as interpretation of tabs can easily be incorporated by borrowing the TABSET subroutine from the ED command. (If the GEM assembler is written appropriately, tab interpretation would be unnecessary.)

Some trick will have to be used to get the file produced with the "keypunch" onto cards. Hopefully, character formats can be arranged so that a "7-punch" output can be used, perhaps by off-line reproducing the cards one column to the left.