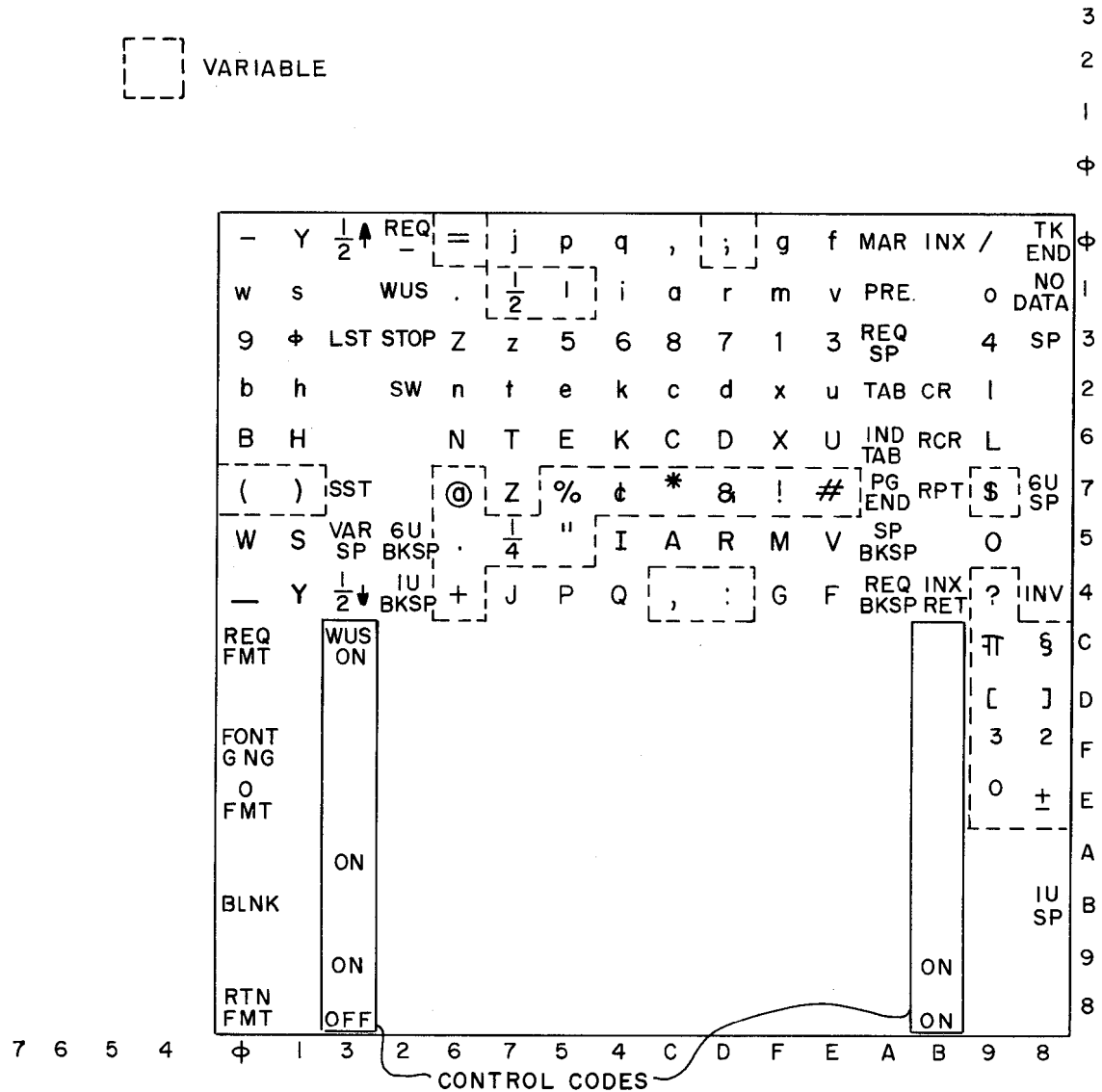


MEMORY ARRANGEMENT REPRESENTING A KEYBOARD HAVING BOTH FIXED AND VARIABLE CHARACTERS

D. A. Hamilton and A. A. Schwartz



The present approach relates to a keyboard compression approach having applicability to any technology which utilizes a keyboard having fixed and variable characters. This includes any display, typewriter or printer which has a font of a given number of fixed characters plus a number of characters which may be varied. The approach involves placing the variable characters in designated memory areas each of which is communicated with through a designated key on either a mechanical or

MEMORY ARRANGEMENT REPRESENTING A KEYBOARD HAVING BOTH FIXED AND VARIABLE CHARACTERS - Continued

display keyboard. Then, if a given variable character is to be varied, a new code designation indicative of the variation is substituted at the position that the variable character occupies in the memory.

In this connection, reference is made to the figure, which is an illustrative map of a portion of a memory occupied by a code set representative of the characters shown at the respective positions. Let us assume that the characters represented are characters in a 96-character standard keyboard. In such a keyboard, 29 characters are variable characters and the remainder fixed. In the illustration, these variable character positions in memory are shown enclosed within dashed lines. Thus, if one of the variable characters is to be changed, a new code designation is substituted at the indicated position in the memory which the variable character occupied. For example, suppose the "%" at position (5,7) is to be varied and replaced by "Δ"; then, the code for the "%" is removed from the memory position (5,7), and the code for the "Δ" is substituted for at this (5,7) position.

While this example has been applied to a keyboard in which most of the characters are fixed and a few are variable, the same principles apply to keyboards having primarily variable characters, such as keyboards which are all symbols. Even on such all-symbol fonts, where all the printable shapes change, still the control characters such as Tab and Carrier Return will remain the same. In such a case it is convenient to maintain these control codes at fixed positions in the memory, as shown surrounded by the solid lines in the figure, whereby all other areas in the memory would contain the codes for variable characters which could be freely substituted, one for the other.

In a system requiring simultaneous representations of several keyboards, the memory requirements may be reduced by using only one table in memory to represent the nonvariable characters and control codes. Then, positions representing variable characters are marked with special codes, indicating that a secondary table corresponding to a specific keyboard should be examined.

Each secondary table need only specify the variable characters. In the example shown, each secondary table will contain only 29 entries.