

# NASA TECH BRIEF

## *Goddard Space Flight Center*



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### Source Deck Compression and Update Program (CAPS)

#### The problem:

Continuous expansion of the volume of data maintained on punched cards, magnetic tape, and disk requires increasingly compact and efficient methods of storing, updating, and retrieving.

#### The solution:

A program, CAPS, which compresses program source decks or other data coded in Hollerith format.

#### How it's done:

A card image record is compressed by the substitution of special EBCDIC characters for each group of two or more sequential blanks occurring in the data. The hexadecimal numbers 02 through 3E are used to represent groups of from two blanks up to and including 62 blanks, respectively. If there are 63 blanks in a group, no substitution is made for the 63rd blank. If there are more than 63 blanks, the 63rd and following blanks are compressed as a separate group. Since input data may be expected to include any of the special characters 00 through 3E, the hexadecimal character 00 is used as a flag when such characters do occur. Other characters are used to identify the beginning and end of a deck and to indicate whether a deck is in compressed

or uncompressed form. Assignment of sequence numbers and provision for updating of compressed decks permit maintenance of a CAPS library of program decks (or data files) on a sequential data set.

#### Notes:

1. The user is to supply system subroutine LAND (Logical AND function). The compilation will give an unresolved external reference error if this function is not used.
2. This program is written in FORTRAN IV (95%) and ASSEMBLER (5%) languages for the IBM-360/75/95 Release 19 computer.
3. Inquiries concerning this program should be directed to:

COSMIC  
112 Barrow Hall  
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Reference: GSC-11545

Source: Earl O. Merrill of  
Programming Methods, Inc.  
under contract to  
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