RECOMP II PROGRAM NO. 1091

PROGRAM TITLE: FLEXO Simulator for SNAP Input (Aurora Revised)

PROGRAM CLASSIFICATION: Executive & Control

AUTHOR: Aurora Gasoline Company

PURPOSE: To simplify the preparation of input tapes needed
                          for use with the SNAP assembly program. Besides
                          speeding up the type-in of statements as compared
                          to the original FLEXO, provisions are also in-
                          cluded to allow making corrections on and listing
                          of previous statements.

DATE: 13 July 1961

FLEXO Simulator for SNAP Input (Aurora Revised)

INTRODUCTION:

Aurora Gasoline has made frequent use of the SNAP "Symbolic to Numeric Assembly Program" developed by Kenneth P. Swallow of U. S. Army CDEC, Ft. Ord, California. The resultant programs have proved to be highly satisfactory since optimization is a must for many of Aurora's applications.

However, the FLEXO routine was found to be very slow and cumbersome, and placed considerable strain on the operator. To eliminate these drawbacks, Aurora rewrote the program, using a different technique. The result is a much faster and more flexible input routine:

(a) Each field begins normally in letter shift, rather than figure shift.

(b) Each field is terminated with the "TAB" key, rather than "line feed".

(c) Each field need not be completely filled nor restricted to figure shift before termination.

(d) Statements are stored in memory until completion of all input; then punch-out occurs.

(e) Statements are automatically numbered with a "Card No." and may be corrected at any time before final punch-out.

(f) Statements may be listed starting at any "Card No." and continued to the final statement if desired.

(g) Previously punched tapes can be read in, corrections made, and reassembled.

METHOD: The five fields of each statement are "typed-in" or "tabbed-thru" in a logical assembly program format. This FLEXO program then inserts the necessary Fig. shifts and spaces to give the unique format required by SNAP. The fields are stored in memory, one to a word, from channel 1, up thru channel 73.

Corrections are made on the statements in memory by use of the "Card No.'s". A listing of previous statements may be made at this time.

Finally, the stored statements are punched on paper tape for use by the SNAP assembler.

RESTRICTIONS: Memory will hold 755 statements (each having 5 fields) before the computer will remind the operator to dump memory and proceed to a 2nd memory fill.

USAGE:
A. Set Margins to allow at least 40 spaces between them. Set all tabs on typewriter down. Set paper 6 lines from top of sheet (66 line sheet).

B. Feed in FLEXO (Aurora Revised). Program occupies 0000-0044 and 7400-7757. Storage occurs from 0100 to 7376.

C. Depress START 1 (with B, C, D all up)

  1. Type in statements.

    a. Each field starts normally in L/S.

    b. "TAB" to omit any field or to terminate a field either partially or completely filled.

    c. Use "line feed" to erase the current statement. (or Start 2, C up)

    d. Original FLEXO restriction on using F/S while spacing or terminating no longer applies.

D. When completed, punch-out statements via START 3 (D up). Normal halt is 7777.

E. Variations:

  1. To make correction on a previous statement:

    a. START 2 (C down, B up). Halts at 7707.

    b. Input card No. on console:
"N"; "+"; "No"; "."; "Enter"; "Start"
To correct statement 56, type on the console: N + 56 . Enter Start

    c. Type new statement

    d. Continue (with C on or off) or jump to new statement as desired.

    e. Note: "C" down will cause card No. to be indented one space.

2. To <u>list</u> previous statements:

    a. <u>START 2</u> (C down, B down).

    b. Input card No. on console as in E 1 b.

    c. Set B up to terminate listing; card No. of last statement will be repeated and program will revert to Paragraph E 1 c.

    d. Note: Sense Switch "B" down will cause card No. and its corresponding statement to be indented one space.

CAUTION:

    After listing previous statements or making corrections, be sure to set card No. to final statement plus one before punching out tape via START 3 (D up). Use START 2 (C down) to set the card No. (Para. E 1 a and E 1 b.)

3. To <u>feed in</u> a previously punched-out tape for corrections or listing:

    a. <u>START 3</u> (D down). Halts at 0002.

F. Error Halts.

1. If statements fill memory (755 total).

    a. Types "Dump Memory".

    b. Use START 3 (D up)

    c. <u>Then START 1</u> (B down);

2. If listing reaches end of memory

    a. Types "End Memory".

    b. No action required.

3. If previous tape being fed in for correction reaches end of memory:

    a. Types "Memory Full"

    b. Make corrections or listing as desired and punch out 1st memory. (Start 3, D up)

    c. Restart Feed-in routine (Start 3, D down)

    d. Repeat 3 b on this 2nd memory.

G. <u>To Assemble</u>

   1. Feed in **SNAP** 4 program.

   2. Feed in <u>**SNAP revisions**</u> (supplied with this new FLEXO)

   3. Load tape from FLEXO output.

   4. Depress START 1.

Example:

T P	S N	LOCATION	CODE	ADDRESS	ADDRESS	REMARKS
		START	FCA	DATA	VO	
E		DATA			1	

After entering FLEXO, type:
(TAB) START (TAB) FCA (TAB) DATA (TAB) (SPACE) V (F/S) O (TAB)
E (TAB) DATA (TAB) (TAB) (TAB) (SPACE) (SPACE) (SPACE) (SPACE) (F/S) 1 (TAB)

FLEXO INPUT

CARD	TS	LOC	OP	DATA	INST
001		START	FCA	DATA	VO
002	E	DATA			1
003					