PROGRAM TITLE: AFIT 021 NUMBER INPUT FROM TYPEWRITER OR
                           CONTROL CONSOLE

PROGRAM CLASSIFICATION: Subroutine

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PURPOSE: To input a number to any location in memory, either in
                           Fixed or Floating Form. Trapping mode commands $-64\omega.0$;
                           $-65\ \omega.0$ and $-66\ \omega.0$ are used, where ω is a four digit octal
                           address at which the number is to be stored.

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$+ 00\ \overset{..}{06}73\ 0\quad + 04\ 0773\ 0$

PURPOSE: To input a number to any location in memory, either in Fixed or Floating Form. Trapping mode commands $-64\ W.0$; $-65\ W.0$ and $-66\ W.0$ are used, where W is a four digit octal address at which the number is to be stored.

COMMAND - $64.\ W.0$ Fixed Decimal to Floating Binary Input.

When the command $-64\ W.0$ is encountered, the machine will stop at location 0675.0*, waiting for a number to be entered from the typewriter. Type the number in the form

$$\begin{pmatrix} N \\ or \\ , \end{pmatrix} \quad \begin{pmatrix} Sign \end{pmatrix} \quad \begin{pmatrix} Integer \\ Digits\ or \\ Zero \end{pmatrix} \quad \begin{pmatrix} Decimal \\ Point \end{pmatrix} \quad \begin{pmatrix} Fraction \\ Digits \\ or\ Zero \end{pmatrix} \quad \begin{pmatrix} TAB \\ or \\ CARR. \\ RET. \end{pmatrix} \quad (\ s\ )$$

The subroutine will return to the main program at the command next following the negative command -64; on exit, the number is present in floating binary form in the A and R registers, and also at locations W, $W + 1$.

COMMAND - $65\ W.0$; Floating Decimal to Floating Binary Input.
When the command $-65\ W.0$ is encountered, the machine will stop at location 0741.0* waiting for a number to be entered in floating decimal form. For example, 156.73 will be entered as $+ .15673 \times 10^3$.

Type the number in the form

$$\begin{pmatrix} N \\ or \\ , \end{pmatrix} \quad \begin{pmatrix} Sign \end{pmatrix} \quad \begin{pmatrix} Decimal \\ Point \end{pmatrix} \quad \begin{pmatrix} Digits \end{pmatrix} \quad \begin{pmatrix} TAB \\ or \\ CR \end{pmatrix}$$

The machine will stop at 0742.0^x waiting for the ten's exponent. Type

$$\begin{pmatrix} Sign \end{pmatrix} \quad \begin{pmatrix} Digits \end{pmatrix} \quad \begin{pmatrix} Decimal \\ Point \end{pmatrix} \quad (\ s\ )$$

Exit from the subroutine is to the command next following the negative command $-65\ W.0$; on exit, the number is present in floating binary form in the A and R registers, and also in locations W, $W + 1$.

COMMAND - 66 ω.0: Fixed Decimal to Fixed Binary Input.

When the command -66 ω.0 is encountered, the machine will stop at location 0713.0* waiting for a number to be entered in mixed decimal form. Type

$$\begin{pmatrix} N \\ \text{or} \\ , \end{pmatrix} \begin{pmatrix} \text{Sign} \end{pmatrix} \begin{pmatrix} \text{Integer} \\ \text{Digits or} \\ \text{Zero} \end{pmatrix} \begin{pmatrix} \text{Decimal} \\ \text{Point} \end{pmatrix} \begin{pmatrix} \text{Fraction} \\ \text{Digits} \\ \text{or Zero} \end{pmatrix} \begin{pmatrix} \text{TAB} \\ \text{or} \\ \text{CR} \end{pmatrix}$$

$$\begin{pmatrix} \text{Sign} \end{pmatrix} \begin{pmatrix} \text{Binary Scale at} \\ \text{which number is} \\ \text{to be entered} \end{pmatrix} \begin{pmatrix} \text{Decimal} \\ \text{Point} \end{pmatrix} \quad (\text{ s })$$

The binary scale must be within the range -39 $\leqslant$ scale $\leqslant$ + 39

There is no error return; if the number will not hold at the scale specified, its most significant digits will be lost.

Exit from the subroutine is to the command next following the negative command -66 ω.0; on exit, the number is present in the A register and also in location ω.

Notes. (1) The routine is relocatable; if its location is changed, the addresses marked above with an asterisk will be changed correspondingly.

(2) If it is preferred to enter the number from the control console rather than the typewriter, the only changes needed are:

(a) When the machine stops, press FILL SOURCE button on the control console.

(b) Use ENTER button in place of TAB or CR.

(3) Location occupied 0673 - 0773, plus fourkey words +0774 - 0777

$$\left. \begin{matrix} 0000 \\ 6764 - 6765 \\ 7000 - 7012 \end{matrix} \right\} \quad \text{Trapping Mode Entry.}$$

Unused location, 0710.

```
0000    +1570120+5770100

0000    +1570120+5770100

6764,+0077610+5706740
5 ,+0077610+5707370
    6  +0077610+5707110 .

7000↓
   ↓-7700240+0170020
    1   +4270111+4100460
    2   +5077661+0000001
    3   +4100000+4277610
    4   +3377600+4000140
    5   +0377660+4277660
    6   +5767000+0077600
    7   +4277630+5777621
7010    +6470000+4277621
    1   +5777601+5767001
    2   -5767000+0077600

L77100
C+0006730+0407731
S

0673    +0000000-0000000
    4   +4207040+7106750
    5   -0000000-0000050
    6   -7000000-0000000
    7   +6407000+5777600
0700    +3006720+0006760
    1   +3577650+3077660
    2   +0006750+4500000
    3   +0477650+4000000
    4   +3510010+5770111
    5   +3500000+5770111
    6   +3500000+5770111
    7   +0000000-0000231
0710    +1413120-0020001
    1   +4207300+4207330
    2   +7107130+4000000
    3   +0000000-0000030
    4   +1000000-0000000
    5   +0000000-0000030
    6   +6407200+6607300
    7   +5777600+4000000
0720    +0007150+4100010
    1   +6077760+5177710
    2   +4277661+0077740
    3   +0377760+4277641
    4   +0007130+4100000
    5   +6077750+0007140
    6   +4000000+4000000
```

```
    7   +0177750+4000000
0730    +6027631+5770111
    1   +0077760+4277721
    2   +0007140+4100000
    3   +6027631+5770111
    4   +0000000-0000470
    5   +0000000-0000000
    6   +0000000-0000470
    7   +4207730+4207710
0740    +4207540+7107410
    1   +4365601-4365601
    2   +0000000-0000010
    3   +0007410+6007620
    4   +0007420+5007721
    5   +5107000+0307670
    6   +6007660+6407500
    7   +6607600+5777600
0750    +3077720+0777740
    1   +3577720+0077760
    2   +0377770+6077760
    3   +5277600+3077720
    4   +3510010+5770111
    5   +3077720+0577740
    6   +3577720+0077760
    7   +0177770+6077760
0760    +5177650+3077720
    1   +3500000+5770111
    2   +4365601-4365601
    3   +0000000-0000000
    4   +5000000-0000000
    5   +0000000-0000020
    6   +0000000-0000001
    7   +0000000-0000001
0770    +0107670+6007660
    1   +6410010+6607600
    2   +5777650+3007620
    3   +3510010+5770111
    4   +1413100-0016001
    5   +6200440-0200171
    6   +0377400-0000001
    7   +0017210+2000001

L77360
S
```

AFIT 021
Input Routine
+00 06730 + 04 07730

3G

APPENDIX I

OPERATING INSTRUCTIONS

PROGRAM TITLE: AFIT 021 NUMBER INPUT FROM TYPEWRITER OR CONTROL CONSOLE

This routine is a relocatable one; because we use the same plan for all relocatable routines, we do not, for our own purposes, include instructions for the use of a relocatable tape on every write-up. For external use, perhaps, such instructions should be included. They are given on our write-up of AFIT 015 "Relocator," as applied to AFIT 021, they are as follows:

1. Put the tape in the photoreader and press the photoreader FILL button. The tape stops after reading in about half way. It has merely read in the relocation routine at 7710-7757, and the display panel shows the word

$$+ 00 \quad 0673 \quad 0 \quad + \quad 04 \quad 0773 \quad 0$$

wnich indicates that if read in directly (i.e., without relocation) then AFIT 021 will occupy memory from 0673 to 0773, inclusive, plus four key words at 0774 - 0777.

2. If this location is satisfactory, press the START button on the CONSOLE. AFIT 021 will enter to 0673 to 0773 as the rest of the tape passes through the photoreader.

3. If the memory region shown on the display panel is not satisfactory, then

    a. Press CLEAR on the console

    b. Press C   on the console

    c. Enter a command word

$$+ 00 \ (x \ x \ x \ x)0 \pm 00 \quad 00000$$

       where x x x x is a four-digit-octal-address, congruent with 0673 (i.e., having 3 as its fourth digit) at which it is desired that the relocated AFIT 021 should commence.

    d. Press START on the console. The rest of the tape will read in the routine, will then be relocated, and the new memory locations occupied will be shown on the display panel.

B1